

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 44.

CONTENTS FOR OCTOBER, 1927

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Published on the first day of each month by American Carpenter and Builder Co.; Wm. A. Radford, *President, Treasurer and Editor-in-Chief*; Wm. A. Radford, Jr., *Vice-President*; E. L. Hatfield, *Vice-President and General Manager*; Bernard L. Johnson, *Vice-President and Editor*; Roland D. Radford, *Secretary*; S. C. Kellenberger, *Dealer Service*; Charles G. Piker, *Eastern Editor*; Delbert W. Smith, E. B. Wolfson, G. R. W. Edgettumbe, L. E. Ketch, O. H. Sutter, Cecil W. Blasius, H. P. Sessions, J. J. Dubro, Dan E. Dunn, *Advertising Staff*.

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PROTECTION FOR OUR READERS—The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interest of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

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MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

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Buy Nearer Home and Save Time and Money!

Use the Directory—Canary Colored Paper,
Pages 167 to 182—and Learn Addresses of
Near-by Branches of Many Distant Concerns

Very Useful Service Inaugurated by AMERICAN BUILDER

IN the canary colored paper section, pages 167 to 182, we present a brand new service for American Builder advertisers and readers—one of the most important and helpful we have ever offered.

“Where can I get it near home?” “Who is the dealer in my section of the country?” are questions asked every day by readers in referring to articles advertised and described in the *AMERICAN BUILDER*.

This Distributors' Directory Number will go a long ways to give this information. The names of all advertisers in this issue, their addresses and products, and for many concerns the branch sales offices, warehouse stocks, retail dealers and other data are arranged in handy order for quick reference when you are in the market for supplies or information or when you want quickly to secure samples.

This Distributors' Directory will make sales more certain by lessening sales resistance. If a buyer knows where he can see the advertised products or where he can

obtain them within a reasonable distance from home the sale is more than half made.

Preserve this October Directory for future use and reference all through the year. In connection with the April Green Paper Directory of Commodities this October guide makes a complete buyers' service for builders and contractors.

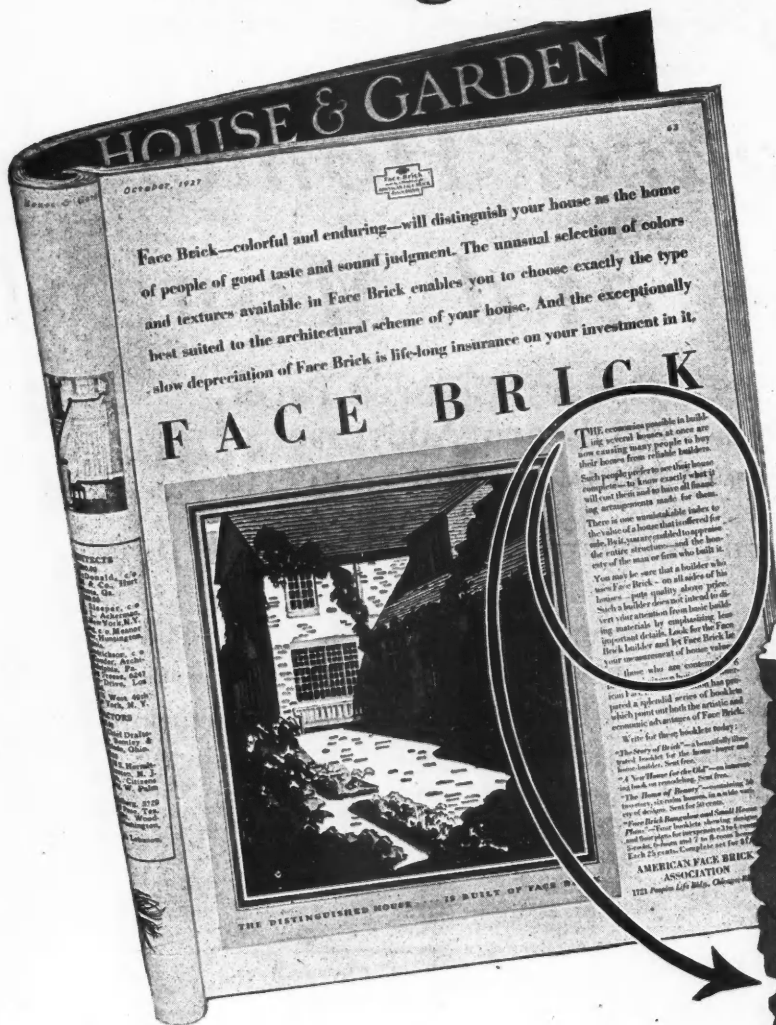


A Correction

IN the August issue of *AMERICAN BUILDER*, under the caption, “Building Industry Far Greater Than Usually Pictured,” we stated that the Dodge figures of “contracts let” omitted practically all the residential buildings erected by investment builders for resale where no contracts were required. We have since been advised by Mr. Thomas S. Holden, the able statistician for F. W. Dodge Corporation, that their figures of “contracts let” do include a large number of residential projects where there are no architects and no general contracts. The term—“contracts let” is, therefore, a trifle misleading.

Undoubtedly, the Dodge figures are as complete as they can make them; but, even with the correction in mind, the Dodge figures are far from doing justice to residential building—by far the greatest form of building activity from the standpoint of either value or volume. The Dodge figures include highways, paving, sewers, water and gas mains, dams, bridges and other engineering work and show a residential percentage of somewhere in the neighborhood of 40 per cent, whereas building permits show it to be about 64 per cent, including only cities of 25,000 population and over. If it were possible to secure the figures from all cities and rural areas, the residential percentage would be—as shown by *AMERICAN BUILDER* survey—about 69 per cent.

How the AMERICAN FACE BRICK ASSOCIATION Is Selling YOU to the Public



THE clipping reproduced below contains a message to the public that you will appreciate. It is an excerpt from the current Face Brick advertising campaign which is reaching a large majority of prospective home-owners in all communities. Note especially that this text sets forth arguments which you can readily capitalize and which will tend to maintain a steady demand for houses built of Face Brick. Team work always wins. Let's pull together. Urge the use of Face Brick and we will urge the public to patronize you.

THE economies possible in building several houses at once are now causing many people to buy their homes from reliable builders.

Such people prefer to see their house complete—to know exactly what it will cost them and to have all financing arrangements made for them.

There is one unmistakable index to the value of a house that is offered for sale. By it, you are enabled to appraise the entire structure—and the honesty of the man or firm who built it.

You may be sure that a builder who uses Face Brick—on all sides of his houses—puts quality above price. Such a builder does not intend to divert your attention from basic building materials by emphasizing less important details. Look for the Face Brick builder and let Face Brick be your measurement of house values.

those who are contemplating

These Booklets Will Help You

"The Story of Brick," a beautifully illustrated booklet for the home-buyer and home-builder. Sent free.

"A New House for the Old," an interesting book on remodeling. Sent free.

"A Manual of Face Brick Construction," 116 pages, a text book on three types of Face Brick wall construction, giving the contractor all the information he needs in building Face Brick houses. Sent for \$1.00.

"Face Brick Bungalow and Small House Plans"—Four booklets showing designs and floor plans for inexpensive 3 to 4-room, 5-room, 6-room and 7 to 8-room houses. Each 25 cents, the set \$1.00.

"The Home of Beauty," fifty 6-room houses selected from a nation-wide architectural competition. Sent for 50 cents.

"Two Apartment and Double House Plans," 14 attractive designs of duplex and double houses, showing 28 plans of 5 and 6 rooms each. Sent for 25 cents.

AMERICAN FACE BRICK ASSOCIATION

1763 Peoples Life Building, Chicago, Illinois

The Dealer Who Displays This Sign



Carries the Best Quality in Face Brick

AMERICAN BUILDER



Formerly AMERICAN CARPENTER AND BUILDER

1827 Prairie Ave., Chicago—250 Park Ave., New York City

Building Activity Continues

SEVENTEEN of the principal building centers in the country showed building construction gains in August, while eight leading cities of the twenty-five principal building centers displayed decreases. These cities made a gain of 22 per cent in August over July this year.

Both New York and Chicago were among the eight recording losses, although the total volume was relatively high. The losses in actual amounts, however, on a comparative basis with a year ago, were so large that the aggregate for twenty-five cities was a negligible gain, according to the national monthly building survey of S. W. Straus & Co.

Of the 500 leading towns and cities in the country, the building volume for August was a 10 per cent loss. In August these same cities had permits totaling \$340,805,205 as against \$376,047,440, making a loss of 9 per cent. These cities represent more than 80 per cent of the urban construction in the country.

The volume for the twenty-five leading cities for August this year was \$207,456,016 as against \$206,014,086 in August, 1926, \$228,686,491 in August, 1925, and \$169,816,823 in July this year.



Freak Building Opposed

DECLARING that the "leading cause for agitation against skyscrapers in general is the promulgation of projects for freak structures," the Height Limitation Committee of the National Association of Building Owners and Managers has advocated that all such plans be discouraged. The committee's report on the subject says:

"Buildings 80, 100 and 120 stories high are not likely to prove an economic success.

"Buildings of the wedding cake style, the spy glass style, the piled-up-packing-case style cannot be esthetically justified.

"Projects for such structures which are given a vast amount of publicity tend to arouse public resentment. They provide the easiest sort of mark to be hit by the criticism of those opposed to all high buildings. The most meritorious of buildings are made to suffer for the errors of the much exploited monstrosities.

"Discouragement of such ill-advised projects seems to be something in which property owners and managers might well concern themselves in their own and, at the same time, in the public interest."



Winter Building Gains in Favor

"BUILDING and allied trades cease to suffer from winter slump as the popular winter building bogey is routed," says George E. Warren, assistant general manager of the Portland Cement Association in commenting on the large volume of projects planned for the 1927-28 winter season. "Wise builders are planning now for construction straight through the cold weather season. Use

of 12 months in the year instead of eight or nine months, eliminates the loss from seasonal depression that has been so costly to industry.

"Construction engineers agree that building in winter is not only practical but highly desirable from the owner's point of view as well as that of the worker. Structurally, building operations can go on through cold weather without any risk if ordinary precautions are taken.

"Employment during the winter months means that the economic stability of business will be maintained," Mr. Warren points out. "Not only men employed on construction work but those supplying building materials and engaged in the many lines touched by construction are able to retain their standards of living.

"Maintenance of these standards, and with them buying power, is reflected automatically in the marts of trade. Healthy activity in a \$5,000,000,000 industry is stimulating to all others.

"Building statistics for the past few years reveal that more and more buildings are being financed and built during the winter months. In 16 cities surveyed pay-rolls and material purchases have mounted each year. Indications are, according to contractors, that the winter of 1927-28 will eclipse any previous winter period."



Economical Refrigeration

AN average saving of \$105.36 a year is reported by American housewives who have turned from ice to electric refrigeration, according to a nation-wide survey recently completed by one of the largest manufacturers of domestic electric refrigerators. Three questions were asked of 10,000 owners of this company's refrigerators and the answers from the first comprehensive survey of electric refrigeration cost ever made.

A summary shows that the average cost of operation is \$2.66 a month, as compared with an average of \$5.59 a month formerly paid for ice figured on an annual basis, electric current averages \$31.92 as compared with \$67.08 for ice or an annual saving of \$35.28 and actual operating costs. Added to this is an astounding saving in food spoilage prevented by electric refrigeration.

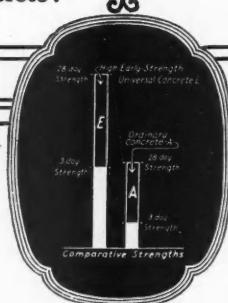
With ice, these losses average \$5.84 a month or \$70.08 a year, a greater amount than the cost of the ice itself. Summarizing the economies in operating costs and the savings by elimination of food spoilage the average total savings per family with electric refrigeration is \$105.36 a year.

The survey included users of all size models and was based on three points—previous cost of ice per month, cost of electric current used in refrigeration per month, and saving actually effected each month through elimination of food spoilage. Care was taken to have all sections of the country represented with a fair proportion in the warmer sections. Any replies which failed to cover all three points were discarded.

Here are some good selling points for the house that is equipped with electric refrigeration.

... answering your Questions regarding High-Early-Strength Concrete

QUESTION	ANSWER
1—What is High-Early-Strength Universal Concrete?	Concrete with a 3-day strength equal to the 28-day strength of ordinary concrete.
2—Are special materials and equipment needed?	No. It is made with the <i>usual</i> materials, <i>usual</i> labor, <i>usual</i> equipment and standard Universal cement, all applied according to thoroly tested methods.
3—What is its chief advantage?	Saves time! Concrete for foundations, buildings, sidewalks, pavements and improvements of all kinds is made ready for use in 3 days instead of 3 weeks.
4—Is there any additional important advantage?	Yes. Such concrete not only has a higher <i>early</i> strength, but also a greater <i>ultimate</i> strength and therefore is <i>permanently</i> better and stronger than ordinary concrete. (See diagram.)
5—Is its use restricted to certain kinds of jobs?	No. Because it may be made as workable as desired, High-Early-Strength Universal Concrete is used for any and all kinds of concrete work.
6—Has High-Early-Strength Universal Concrete been fully tested?	Yes. Thousands of laboratory tests, years of experiment and hundreds of actual jobs prove the value of High-Early-Strength Universal Concrete.
7—What other advantages does High-Early-Strength Universal Concrete offer?	It is unnecessary to stock extra brand of material as High-Early-Strength concrete is obtained with the <i>usual</i> materials, <i>usual</i> labor, <i>usual</i> equipment and the same quality Universal cement as used for ordinary construction.
8—Where can I get detailed information on High-Early-Strength Universal Concrete?	Full details for use on any concrete work will be sent promptly on receipt of the coupon below.



(Copyright U. P. C. Co. All rights reserved)

High-Early-Strength concrete "E" made by using special methods and standard Universal cement is *permanently* better and stronger than con-

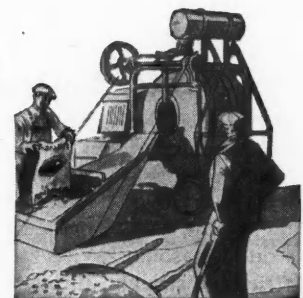
crete as ordinarily produced as shown in the diagram. More detailed information furnished promptly on request. Just use the coupon.

Name _____

Address _____

UNIVERSAL PORTLAND CEMENT CO.
 210 South La Salle Street, Chicago
 Without obligation, please send me detailed information on methods of securing strong concrete in 3 days with the usual materials and equipment.
 AB 10-27

Universal Portland Cement Co.
 Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York
Concrete for Permanence



Everybody's Business

By FLOYD W. PARSONS

The Black Age Passes

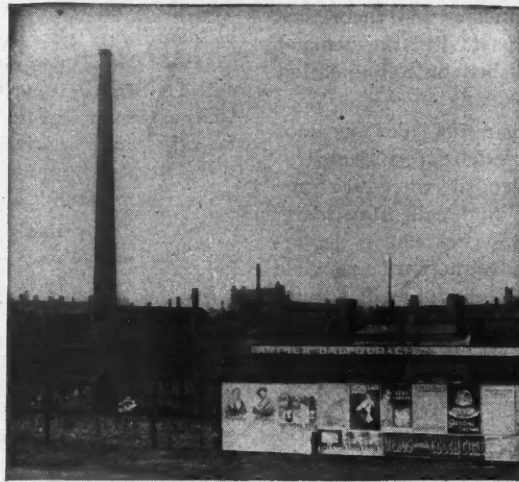
THE invention of the steam engine ushered in a "black age." All other considerations were quickly subordinated to the utilization of heat and power. Almost everywhere smoking chimneys were looked upon as evidences of progress and enterprise.

Decades passed without there being any material change in the situation. Recently science came to the rescue of a long-suffering humanity. The chemist called attention to the astounding waste of precious values entailed in the burning of raw coal. The doctor came forward with irrefutable figures proving how severe was the damage done human health by the acids pouring forth from the nation's chimneys. The housewife awakened to the drudgery caused by sooty air, and property owners as well as merchants finally became conscious of the enormous losses they were compelled to sustain as a result of barbaric heating practices.

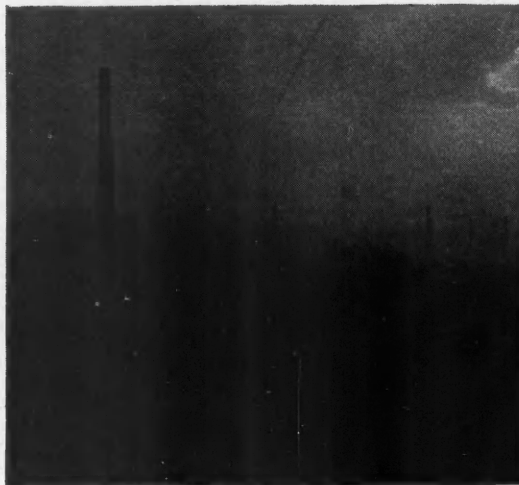
Now we enter a new age in which human aspects are commencing to decide vital issues. The intelligent citizen no longer has any sympathy for the notion that the earth's atmosphere is a proper dumping ground for the refuse cast off by crude furnaces. The government is supporting the proposal that there shall be an end to practices which largely reduce the hours of sunlight and cut off a substantial percentage of the valuable ultra-violet rays contained in unskimmed solar radiations.

A new philosophy of sunlight has swept over the world. It has been disclosed that plants live because of the light of the sun and not its heat; that solar radiations are bactericidal; that natural sunlight enriches human blood in calcium, phosphorus, iron and probably iodine; that it is absorbed by the blood increasing the number of white cells and the number of platelets, thereby rendering the individual more or less immune to disease; that the radiations we get from the sun are most potent in the early morning hours, and that their value to the body is due to chemical reactions which take place and not merely to warming the blood. If this were not true it would be equally beneficial for us to warm our blood by taking hot baths or remaining in warm rooms.

People everywhere are turning their homes and offices as far as possible into solariums. They have dismissed the idea that the efficacy of sunlight is principally confined to such ailments as rickets and tuberculosis. The dermatologist uses sunlight extensively in the treatment of cutaneous affections, and no less successful results have been obtained through the use of this same great agency as a remedy for digestive disorders and rheumatic conditions. The annual curves of both the phosphorus and the calcium content of



Sunday in a Large Industrial City.



Monday in the Same City.

the blood of infants in New York City follow the monthly height of the sun.

Cellar-grown children, like cellar-grown plants, will not continue for long in normal health. There will be a deficiency of chlorophyll in the plant and of haemoglobin in the child. The great Rollier found in his many clinics in Switzerland that when the sunlight failed to appear for days at a time, his patients were injured, and they would not start again on their rapid advance to health until the sun's rays returned.

People who live largely in sunlight do not require so much food as those who spend their time in the shade. When radiant energy passes directly into the body by way of the skin, there is less need to burn up fats or carbohydrates in order to keep the blood warm. Light is a food substitute that can be made to afford material relief to our digestive mechanisms.

The light of the sun is our benefactor—its heat our enemy. We must try to use the hours of the day that give us the light rather than the heat. Each individual must take his solar radiations in doses, the amount being determined by careful experiments. Some respond to light more easily than others. People who tan quickly are the best subjects. Those who freckle instead of turning brown must move carefully. Red-haired folks are usually refractory to sun treatments, and in

such cases time and patience must be exercised. An overdose of sunlight will do damage just as will excessive eating and drinking.

Sunlight and cold appear to be a more ideal combination than sunlight and heat. In other words, a hundred clear days in Canada would benefit the human body more than a hundred clear days in Florida. The trouble is that in our Northern States the winter days are so generally cloudy and the daylight hours so few. One of the best arguments favoring daylight saving is the fact that this permits us to utilize the light of the sun in the early morning hours when the heat is not so great. Our ancestors knew that it was good to get up early but they didn't know why.

All of this represents merely a non-technical scratching of the surface of a few sunlight fundamentals. It is a fascinating subject that anyone can take up as a hobby with much profit. Never before were we so sunshine-conscious. In a few years the average person will refuse to buy an automobile or work in an office that is not equipped with glass that lets through the ultra-violet rays of the sun.

This new attitude toward hygienic living will prove a powerful factor in putting an end to our present dirty civilization. Dirty desks, sooty window sills, blackened

buildings and soiled tapestries will disappear. Laundry bills will be substantially less and there will be a huge saving to industry as a result of the material decline in absenteeism and in efficiency now caused by sickness.

Everyone dislikes smoke, but many have believed that its evils are exaggerated and the remedies too theoretical. Such may have been the case in the past. But the demand for smoke abatement today is established on a foundation of facts that are wholly tangible.

In one smoky community last year 794 tons of soot and dust were deposited per square mile. In a comparatively clean community the total deposit was 101 tons. Smoke from industrial towns of this kind will often travel 50 miles. The average soot particle settles under the influence of gravity at a very slow rate. Sometimes a particle shot from the top of a chimney 100 feet high will require three weeks to reach the ground in still air. Industrial smoke contains much ash and little nitrogen, so it is of very little use as a fertilizer for crops. The soot from domestic chimneys is richer in nitrogen, but is rendered useless as a fertilizer by the large percentage of tarry matter that goes with it.

Crops for many miles are seriously affected by the drift of sulphur from the chimneys of nearby towns. Even hearty evergreens in some manufacturing districts become so damaged by smoke that they fail to flower in the summer and lose their leaves in the fall. The cost of washing tarry deposits off glasshouses amounts to about \$23 per acre, and sometimes this work must be done four or five times a year where the atmosphere is continually smoky. People in such sections pay a smoke tax every time they buy a bunch of flowers.

Smoke acids lower the nutritious value of grass, and cause the farmer to purchase more feed for his stock. Also the soil in smoky regions suffers a serious loss of lime, resulting in a deficiency of lime content in the milk obtained from local cows. In some regions the soil is so acid from smoke that constant dressings of lime are necessary. This encourages the growth of rank weeds and thick grasses.

A recent investigation in an eastern community disclosed that in twelve months the hours of sunlight totaled 1167. A few miles away with climatic conditions precisely the same, except that there were fewer smoking chimneys the hours of sunshine totaled 1402—a 17 per cent increase of sunlight. Any number of measurements throughout the country have indicated as much as a 40 per cent absorption of total daylight by smoke clouds.

Smoke doubles and triples the expense of cleaning. It means more window-washing, more servants, more speedy blackening of curtains and quicker discoloration of pictures and other household articles, especially those made of silver and brass. The sulphuric acid in smoky air damages mortar, masonry and metal-work as well as fabrics and vegetation. Even the steel rails of a railroad have shown a loss of weight of more than a pound per year per rail in a smoky atmosphere as compared with a loss of only 0.18 pound in a district where the air is clean. The examination that brought forth this fact was continued for 17 years.

Coal dust, smoke and soot increase the death rate from acute lung diseases. Two large towns located in the same

industrial district are built in precisely the same style, and differ only in the amount of coal smoke in the air. The first town is situated on the eastern edge of the district and receives coal smoke only from the west. The second town lies in the center of the region and has an atmosphere constantly charged with smoke. In the first community the death rate per 10,000 from acute non-tubercular lung diseases, taking people between the ages of 15 and 60, is only 11. In the nearby smoky town the death rate is 35. Another similar survey covering 24 cities, half industrial and the other half non-industrial, showed a death rate of 26.5 in the smoky communities, and a death average of only 17.5 in the towns having a clean atmosphere.

Unfortunately many of us preach one thing and practise another. We praise sunshine and then manufacture smoke to shut it out. It is time we recognized the truth that it is not the cold that kills, but the darkness of our winters. Such a realization, coupled with an already full appreciation of the multitude of evils that result from living and working in a dirty environment is certain to bring us to a clean civilization where our buildings will be something more than huge piles of blackened masonry.

More gratifying than all else is the clear evidence that smoke-abatement campaigns throughout the country have been taken out of the hands of emotional faddists and self-seeking politicians. Present programs to clean up the air and let in the sun are being directed by trained engineers who not only recognize the necessity of suggesting remedial measures that are practical, but who appreciate the need of gaining the interest and co-operation of present smoke offenders by doing all that is possible to work no unnecessary hardship on American business generally.



Students Build Complete House

AS a part of its regular class work, the Department of Building Construction of the Carnegie Institute of Technology built the stucco bungalow shown in the illustration. All the construction, including bricklaying, masonry, carpentry, plumbing, electric wiring and painting was done by students enrolled in the Department of Building Construction. This bungalow was displayed during the annual exhibition of the institution and proved to be one of the most popular attractions of the evening. It was estimated that from 8,000 to 10,000 visitors inspected it.



Stucco Bungalow Built by the Students at Carnegie Institute of Technology as a Part of the Regular Course in Building Construction.

Old Houses Made New

An Experiment Which Proves There is a Vast Field of Profit for the Builder in Rehabilitating Old Dwellings

By GEORGE E. PIPER



This 28-Year-Old House Was, Before Rehabilitation Started, a Drag on the Prosperity of the Community.

At Moderate Cost the Old House Shown Below Was Made New, Its Value Doubled and What Was Formerly an Eyesore Became an Attractive, Livable Home, an Asset to the Neighborhood.

THERE are in the United States, according to a survey conducted by the Division of Building and Housing of the United States Department of Commerce, more than 20,000,000 dwelling houses. The majority of these dwelling houses were not built last year, or the year before, or the year before that, as great as has been the volume of building in the last few years. The average age of these 20,000,000 dwelling houses doubtless is nearer 15 years than 10. And a huge number are from 20 to 30 years old.

All these homes on any scale of present day living conditions are obsolete, or near-obsolete. Thousands of them are rotting away and are eyesores in their communities. The owners are prohibited from selling and building new homes in new localities because of the low sale price the old homes will bring. The old homes are increasingly fire-hazards as they fall into further decay and disrepair. They lessen the value of the property around them and the tone of streets generally. Certainly they are a drag on the prosperity, health and welfare of the nation.

Now, the people that live in these homes have purchasing power. They work in factories, offices, stores and on farms. They are no more eager to live in unbeautiful, undignified and inconvenient surroundings than are any other group of people. A goodly portion of their income

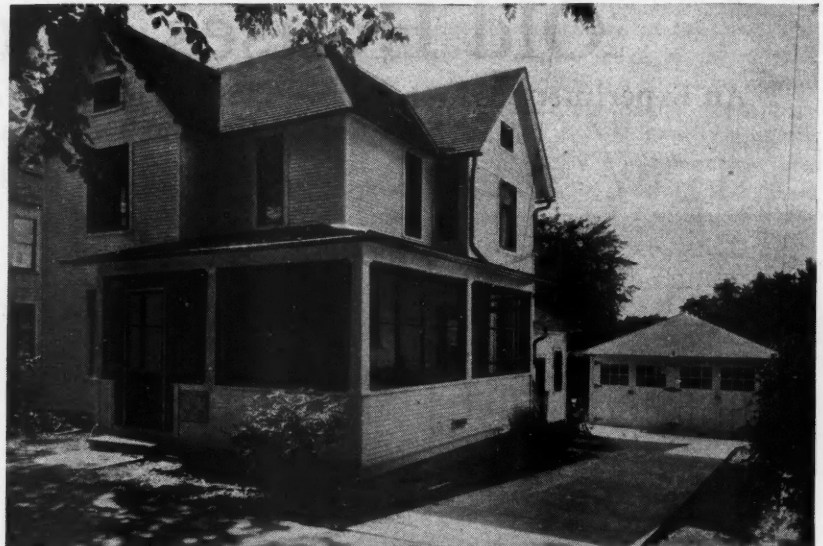
is being spent on items of living other than the home, largely because these other things are easier to purchase. Home-building and rehabilitating unfortunately appear to be formidable, technical problems that the average home-owner hesitates to undertake without guidance. The owner of the average obsolete home doesn't know, for example, that his home can be rehabilitated—be made new again.

In considering the problem of improving living conditions and increasing the volume of business in the building industry, "Household Magazine," with which the writer is associated, hit on the idea of carrying through, first hand, the rehabilitating of an obsolete house. This procedure seemed the only way of determining accurately the feasibility and practicability of home-rehabilitation. The step decided on, the next thing was to find a house situated near enough to Chicago to make it easy of access to all who might be interested in the experiment.

The investigators sent to find a home for the experiment came to Dixon, Illinois, a city of about 10,000 population on the Rock River, and found they had been anticipated. Quite unknown to anyone but itself, Dixon had been carrying on a home-rehabilitating movement for better than three years, in which time more than 76 houses had been rebuilt, remodeled, or both. In one case an enterprising man had taken a decaying old barn, the frame of which was sound, and had made it into an attractive and up-to-date residence. Certainly Dixon seemed an auspicious testing-ground.

Everyone consulted was eager to co-operate. A dilapidated old residence, two stories and eight rooms, on one of the best streets in town, was located. This house had been vacant for several months. Looked at from the outside or looked at from within, it was just one of those discouraging pieces of construction that create an unhealthy feeling of depression in the beholder. To the layman it probably would have seemed beyond redemption, or as a possible last stop on the way to the poor house.

However, Mrs. Florence Plummer White had seen the possibilities of the house, and had purchased it before the investigators arrived in Dixon. Mrs. White's idea was to



With a New Screened Porch, a New Roof, Fresh Paint and a New Two-Car Garage the Entire Appearance of the Old House Was Changed and Modernized.

remodel the house into a two-family dwelling and to rent it for profit, a procedure she has followed with other houses in Dixon. Now she intends to live in it. Told of the plan to conduct an actual field test in home-rehabilitation, Mrs. White quickly consented to turn the house over to "Household Magazine." A number of manufacturers with a direct interest in a national home-rehabilitation movement then were asked to contribute such products of theirs as would be required for the experiment.

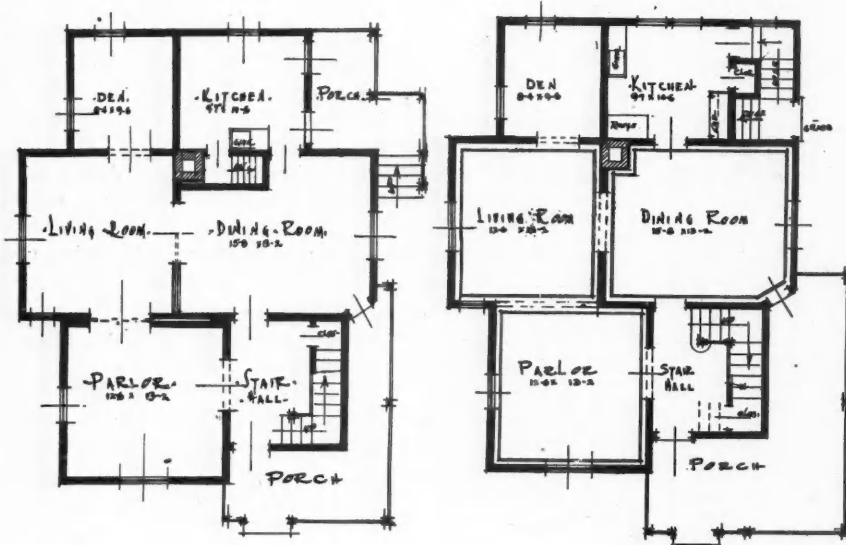
With these preliminary details out of the way, K. J. T. Ekblaw, construction expert for "Household Magazine," went to Dixon to learn what could and had to be done. Quotations from Mr. Ekblaw's notes will serve more effectively than anything else could to present the condition of the house before rehabilitation was started.

"Paint almost weathered away. House only painted twice in 28 years. Steps, porches and exterior window sills rotted. Roof just about all gone. Inside, stairs to second floor steep, inconvenient, ugly and in bad condition. Floors worn, uneven and not worth trying to save. Plastering cracked and fallen away, with lath exposed and rotted or broken in many places. Kitchen dark, dirty, no modern equipment. Electric wiring exposed and strung in hap-

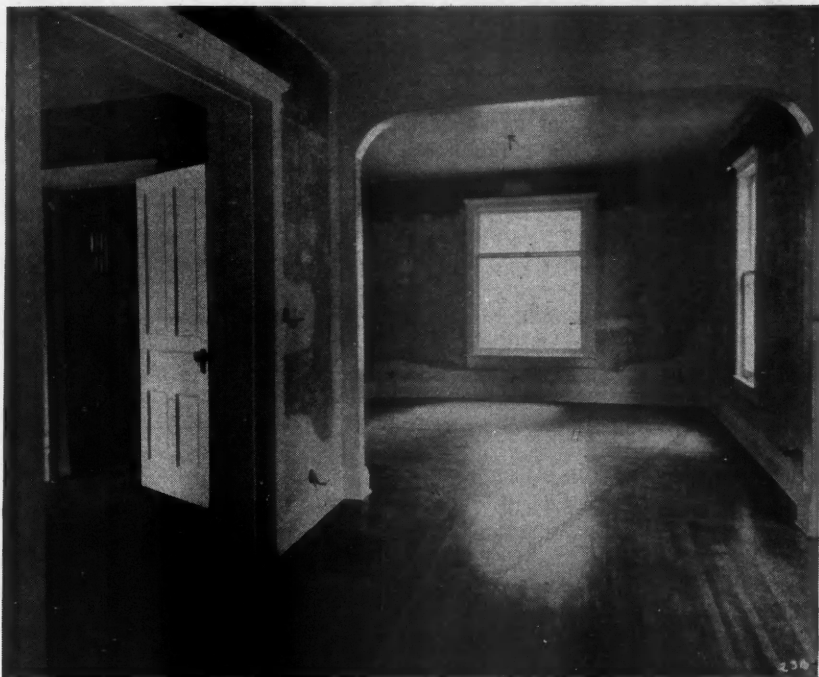
hazard manner. Upstairs, obsolete fixtures in bathroom including iron tub and unsanitary toilet. Plumbing not worth saving. Wood floor in bathroom rotting. Walls and ceilings upstairs broken and dirty. Basement incredibly dirty with rotting wood floor and dank, foul odor over everything. Footings weakened by displacement of dirt around them."

Add to all this that the house is 28 years old, was wretchedly planned from the standpoint of layout and convenience, that the stairs leading from the kitchen to the cellar were hardly more than a stepladder in a rotting, foul well, that gutters, downspouts, flashing and porch supports were virtually gone, that the front porch was an ugly old-fashioned "stoop," and you have a fair picture of the condition of the house before rehabilitation was started.

There were, however, on the favor-



At the Left the Original First Floor Plan, at the Right the Remodeled Plan. Only such changes in arrangement were made as would present no difficulties to the average carpenter-builder co-operating with the owner.



An Arched Doorway Joining the Old "Front Parlor" and "Back Parlor," New Oak Flooring and Refinished Walls and Trim Aided in Replacing Dinginess with Beauty.

able side these four features: The foundations of the house were firm and strong, the wood frame was in good condition as was the wood siding with which the exterior had originally been finished, and the warm air heating plant was only two years old. From a construction standpoint the house was a shell, with a beyond-repair roof on the top. And in the rehabilitation, the house is being treated virtually as a shell.

One of the things kept firmly in mind by Mr. Ekblaw in planning the rehabilitation was that no changes be made in design or layout other than those which would present no difficulties were the rehabilitation being planned by the average carpenter-builder in co-operation with a home owner. In other words, practicability and ease of achievement were striven for.

At bottom, literally and figuratively, was the rehabilitation of the basement. Footings were strengthened, the rotten wood floor torn out, the ground leveled and a cement floor laid. Then the basement was cleaned out. At the top a new shingle roof was laid and new flashings, counter-flashings, gutters and downspouts were put in place. Rotting window sills were replaced with new ones. The old rear porch and the front "stoop" were torn off. In the front a living-porch of considerable dimensions was erected over a new foundation. In the rear an enclosed stairway was put down to the basement in the place where the old porch had been, and a grade entrance was made in the stairway enclosure.

With this done most of the house was given a priming coat of white paint, and after the thirsty wood had gotten hold of the paint the old house actually seemed to sit up and grin, as though it felt that good.

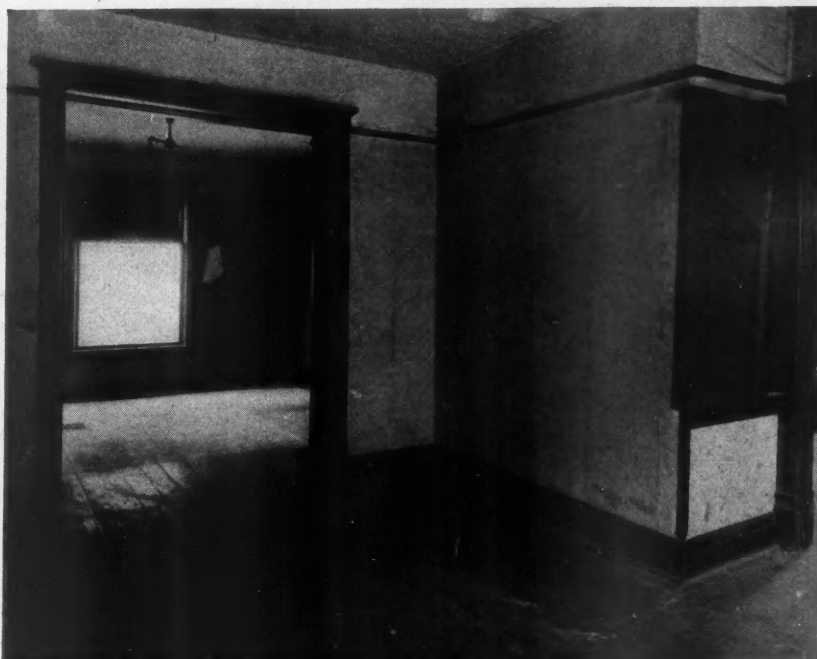
On the inside the old stairs to the second floor were torn out and replaced with easy and sightly stairs. The old "front parlor"

and "back parlor" were made into a living room by simply removing a sliding door and its framing and by arching the opening thus made between the rooms. New oak flooring was laid all through the house. The old back stairway to the basement—it must have been perilous to life and limb to descend it—was closed up in both the dining-room and kitchen, giving more space in the dining-room.

Two windows replaced the single dingy window that had kept the kitchen dark—not light. The house was completely wired with the most approved wiring system and ample outlets for lamps and electrical conveniences were provided. New lath was applied wherever needed and the plastering put in first-class condition, with wall-board used in the kitchen and the enclosed rear stairway for economy.

The foregoing summarizes the progress to this writing. Here's what remains to be done: Modern bathroom equipment, an automatic electric pressure system supplying soft water to bathroom, kitchen and laundry, including tub, toilet and lavatory and a linoleum floor covering. New lighting fixtures throughout the house. New shade rollers and shades. New sink, range and built-in cupboard in the kitchen. Washable enamel paint in both the kitchen and bathroom. New asbestos covering on heating pipes. All new screens, including screens for the porch. New coal chute. Laundry tubs and space for drying in the basement. Installation of an insulating blanket of dry-fill gypsum in the attic. Redecoration of the entire interior, with texture-and-tone effects, in the living-room, hall, dining-room and den, and with wallpaper and paint in the bedrooms. Two more coats of white paint on the exterior.

In listing the details of the rehabilitation, one item has been left to now, because of its importance, and because it should be kept in mind when the cost of rehabilitation is discussed. It is the two-car garage which is under construction to the rear of the house. This garage is of wood



The Old Interior was in Bad Condition—Floor Rough and Worn, Trim Dilapidated, and Plaster Cracked and Falling.

and will be lined with sheathing board for fire-safety and insulation. It has a cement floor. A concrete drive will be laid from it to the street.

Now for the cost. The contract was let to a Dixon contractor on a cost-plus basis. Materials donated by manufacturers have been figured at their full retail price. All cost data has been carefully and accurately kept that the figures may present the true story.

The total cost of the rehabilitation, including every item of labor and materials that has been listed, will not exceed \$3,500, with the probability that the figure will be nearer \$3,000 than \$3,500.

Let us see what this means. The old house situated as it was on a 50x150 lot, could hardly have been worth more than \$6,000, with the value uncertain and purchasers scarce because of the condition of the house, and with the house a weight on the value of the property all around it. When the rehabilitation is completed, the house will be virtually a new seven-room house, equipped with modern comforts and conveniences, good for a new lifetime as a home. It would be a courageous contractor who would attempt to duplicate it for less than \$12,000.

Now, it should be borne in mind that not only a new home has been created, or an old one rehabilitated, but that through the application of labor to materials new wealth has been created, and the endless ramifications of this new wealth in the process of creation and its effect on the national prosperity are easily apparent. And that this example of home-rehabilitation being carried on in Dixon can be duplicated over and over again within the United States also is easily apparent.

Owners of obsolete homes want to rehabilitate them. Certainly bankers are eager to loan money for rehabilitation. Civic organizations, women's clubs, national organizations, will support a home-rehabilitation movement, for the social consequences, the social good that will result from the rehabilitation of America's obsolete homes, are of too vast importance to fail to gain the support of every organization with a proper interest in the movement. It is a movement which opens a large and almost untouched field of profitable business for the builder.

The meat of the kernel simply seems to be that people are awaiting being shown how their homes can be rehabilitated. And it seems that any national, sectional or independent movement toward home-rehabilitation should concern itself with that practical and down-to-earth aspect—how the rehabilitation can be done, constructionally, decoratively and financially.

It already has been stated that the principal reason the dollar of the owner of the obsolete home goes into things other than home-rehabilitation is that these other things are made easier of purchase by him. But if his lumber dealer, or his contractor, went to him with the support of his banker and the support of the manufacturers of lumber, building materials and equipment, and showed him precisely how his old home could be made a new home, he'd be more than willing to lend a ready ear.

Surveys among owners of obsolete homes in different parts of the country have revealed just this condition. Consider, solely, the millions of homes in the United States in 1927 that are without bathrooms. Then answer the question: Do these people want bathrooms?



Making a Living Room of the Old "Front Parlor" and "Back Parlor" by Substituting an Arched Opening for the Old Sliding Doors Was One Step in the Rehabilitation of This Old House in Dixon, Illinois.

A Leader in Lumber

How J. C. Scofield, Born to the Business, Has Achieved an Outstanding Success in the Lumber Industry



J. C. Scofield, Founder, President and General Manager of the Windsor Lumber Company, Limited, of Windsor, Ontario, Seated at His Desk in the Handsome Office Presented to Him by a Group of Loyal Employees Who Have Aided in and Shared the Success He Has Built.

J. C. SCOFIELD, head of the Windsor Lumber Company, Ltd., Windsor, Ontario, was literally born into the lumber business for his father maintained a lumber mill in the back yard of his home in Woodstock, Ontario. He also had a retail yard in the same town and the son, born and raised under this influence, has stuck to the lumber business throughout his life.

In 1890, J. C. Scofield left Woodstock and went to Toledo, Ohio, where he spent 10 years in the wholesale lumber business. In 1900 he moved to Pittsburgh where three years of retail lumber business were added to his experience. Then in 1904 he joined the Payne Lumber Company and for 10 years sold Payne doors throughout the country. In 1914 Mr. Scofield decided to get into business for himself and started the Windsor Lumber Company.

At the start this new company was an obscure, "one shed" affair with a one horse delivery wagon. The 13 years which have passed since its founding, however, have seen it develop into the largest wholesale and retail lumber concern in its community. At the start, in addition to William Griesinger who assisted Mr. Scofield in the office and who is still with the firm as secretary and treasurer, five men were on the payroll. Today more than 100 men are employed and the old, one horse wagon has been replaced by a fleet of trucks and light delivery automobiles.

Since starting his business in Windsor, Mr. Scofield was elected President of the Ontario Lumber Dealers Association and is now President of the Rotary Club of Windsor and the Essex Motor Club, and is active in many civic organizations and developments. In fact whenever anything in the way of civic movements or betterments is planned in Windsor or the Border Cities, "Jim" Scofield is in on it and in an active capacity.

Mr. Scofield is a firm believer in good advertising and attributes much of the credit for the growth of his business to it. Besides regular newspaper advertising, the company makes use of an elaborate free plan service. Each month 300 illustrated, home plan books, furnished by the world's greatest organization of specialists in home building, are mailed to architects, contractors and prospective home builders free of charge. While this service entails considerable expense, it has proved profitable for the company, and has shown a great influence on the house design of the community. In Windsor it is possible to see whole streets of houses, built from designs taken from these plan books.

Mr. Scofield's private office has been described as one of the finest in Canada. It stands as proof of the high esteem in which "The Boss" is held by his organization. Last winter, while Mr. Scofield was away on a holiday in Florida, his loyal employes, many of whom had been on the payroll for years, spent several weeks of careful planning and surprised him on his return with a completely new office. This office is equipped not only as an efficient work room but also lacks nothing in comfort and even luxury. It is entirely trimmed in mahogany with panel wainscoting, has an electric fireplace, handy filing cabinets built into the panelling, an aromatic cedar closet, oak floor, panelled ceiling, special attractive lighting fixtures and luxurious, upholstered furniture.

Adjoining the office is an estimating room, panelled and entirely lined with chestnut finished with a walnut stain and white filler. Though this office sets such a high standard it does not in any way overshadow the factory for Mr. Scofield is a believer in good equipment and extensive improvements in manufacturing facilities have recently been carried out which keep his shops up to a point of leadership among woodworking plants.

REAL ESTATE AND SUBDIVISION WORK

Billboard Merchandising

WHEN planning his advertising of all kinds it behooves the home builder and real estate developer to pay close attention to all the mediums of publicity he uses so that he may be rewarded adequately for every advertising dollar expended. Newspaper copy needs to be evolved carefully, and so does the copy used on billboards and outdoor bulletins.

When riding along the streets of our cities, taking note of the many outdoor bulletins that plaster vacant lots and cry for attention, one is bound to stop and ask the question: "Can outdoor advertising be made to pay those having homes and building lots for sale?"

It is the purpose of this article to give an affirmative answer to this query because it is the writer's belief that outdoor advertising can be made to pay the real estate developer handsome dividends.

For purposes of exposition outdoor advertising of real estate developments, homes included, may be divided into direction boards and merchandising bulletins. Direction boards do mainly what their name "direction" implies, that is, they direct the reader to a certain real estate development. Such boards may be placed at some distance from



A Well Designed Direction Board Carries Simple, Clear Directions, Plain Identification and Brief Easily Read Copy.

the project under sale, and the number of such boards used should be gaged entirely by the size of the project under development and the amount of advertising money that is apportioned for this purpose.

A board, used by the H. C. Thorman Co., general real estate developers in San Antonio, Texas, illustrates the principles of good direction board building. First, this board makes the direction very clear. A large, red arrow, pointing towards the development in question,

was painted across the top of the board. In the arrow in big white letters was this wording:

"DRIVE ACROSS THE OLMOS DAM INTO"

"Park Hill Estates" was in dark letters just below the arrow. The rest of the copy was worded thus: "Exclusively for fine homes," with the name of the company at the bottom of the board.

Some good points of this board are: It made the direction clear both by arrow and the wording, "Drive Across the Olmos Dam." The message was short, pointed and not crowded on the board. Plenty of white space was left around the edges and between the parts of the copy; contrasting colors were used so that the eyes of motorists would be caught and held long enough for the



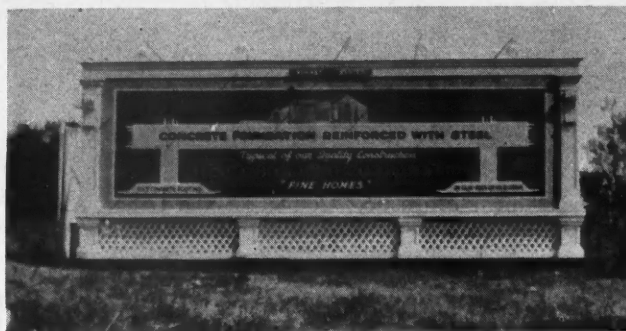
One of the Best of Merchandising Boards Tells Its Story Largely by Pictures with Only Simple Copy, Which Can Be Read from a Passing Automobile, Without Effort.



Two More Examples of Effective Direction Boards Which Also Carry a Merchandising Appeal, the Latter Is Best Exemplified by the Board at the Right with Its Pictures of Buildings For Sale.

message to be taken in.

Merchandising boards in a strict sense are also direction boards. There are these two differences, however. First, direction boards may be placed at some distance from the properties under sale; merchandising boards may be also but usually are placed near or on the properties for sale. Second, the direction board's message merely directs the observer; the merchandising message usually directs, too, but it aims, through pictorial means in most cases, to create in the minds of observers desire of ownership.



Here Not Only a House Is Illustrated but Also the Foundation Which This Company Features as One of Its Specialties.

home building firm, also strikes original notes in its outdoor advertising. This company makes a specialty of concrete foundation work reinforced with steel. One of its boards showed such a beam, anchored in concrete footings. A picture of a home was also painted above the beam. Another Busby board showed reproductions of two Busby homes, one at each side of the board. This was also a direction board, the message running:

"22 Stucco and Brick Homes of this type now building in Next Block West. See those that are furnished. Open Daily."

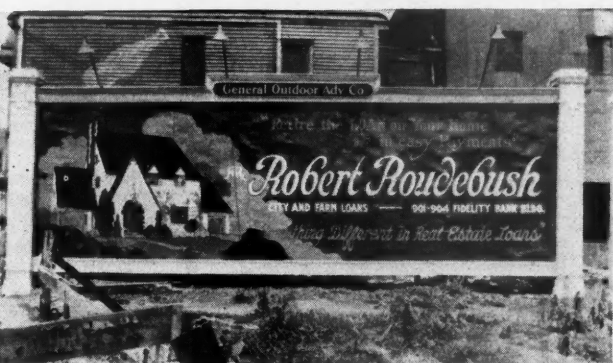
It can thus be seen that good merchandising boards are nearly always illustrated. The Chinese have an old adage that runs in this way: "One picture is worth 10,000 words." Certainly, one good house picture on a board is worth a whole board full of word copy. The eye can see and easily take in the picture with the probable result that desire of possession will be initiated in the mind of the observer, a process of thought that can hardly be expected to be started by words alone because people glide by boards in cars too rapidly for the eye to take in much in the way of words. Pictures show how the homes look, too, and "seeing is (often) believing," and therefore convincing.

Something remains to be said about the size and the "trimmings" of outdoor boards. The insignificant board or one that has a poor setting cannot be expected to compete successfully for attention with any of the fine boards described in this article. All of these boards were hand painted on galvanized tin, the work being done by expert outdoor advertising company artists. The "talking" qualities of such boards are head and shoulders above boards that are just "thrown together" by an ordinary carpenter and a sign painter.

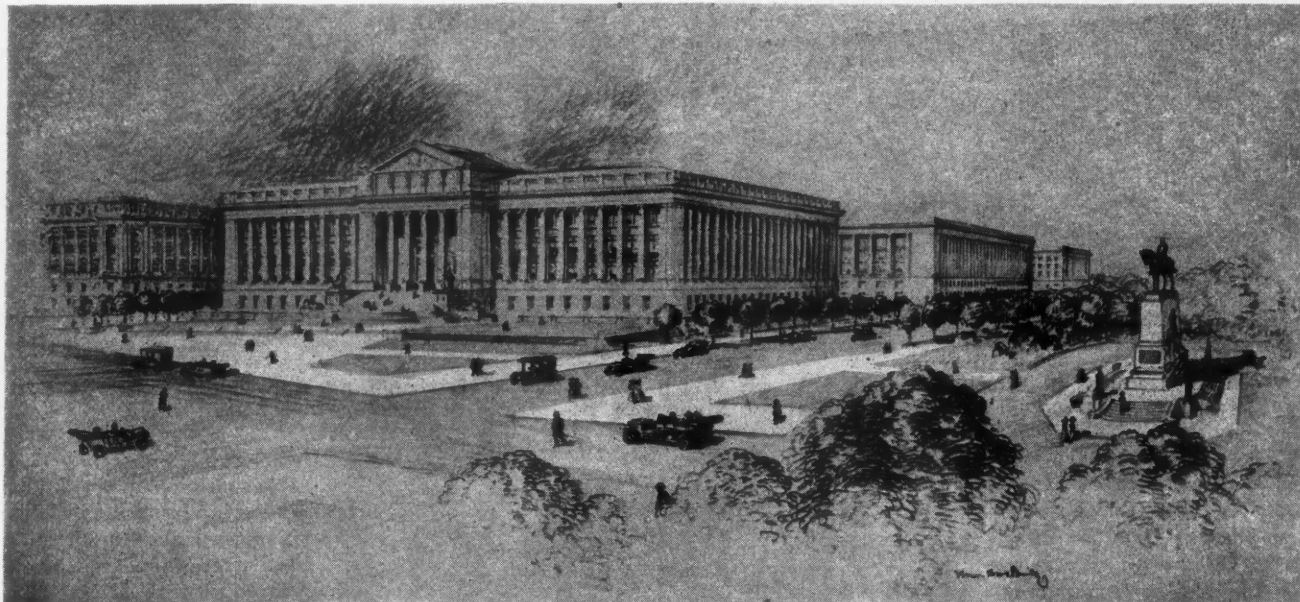
One of the best merchandising boards ever seen by the writer was used by the American Building Corporation at the entrance to the company property in San Antonio, Texas. This board showed handpainted reproductions of four of the corporation's homes. The homes were grouped so that the observer could not help noting that as one was sold a large cross would be drawn across its picture on the board and the word "sold," painted in. The price of each house was painted under its reproduction.

Thus it would seem expedient for the real estate developer to employ the services of an expert outdoor advertising company. These people have the "goods," and while, of course, the builder or developer will want to supervise the copy carefully, the advertising people can certainly put on the artistic touches and the "trimmings" in such a way as to give the board a really fine setting. And the setting does count. For instance, all the boards, described here, have lattice work under them. Pilasters are commonly employed at the sides.

A. W. ROE.



And Here Are Other Boards Which Prove the Old Chinese Adage that "One Picture Is Worth 10,000 Words."



New Buildings Proposed for the Department of Justice, Commerce and Labor, Along Fifteenth Street, South of Pennsylvania Avenue, as a Part of the Plan for a "New Washington."

The New Washington

Our National Capital is Now on the Way Toward Completion According to the Original Plan and Present Day Requirements

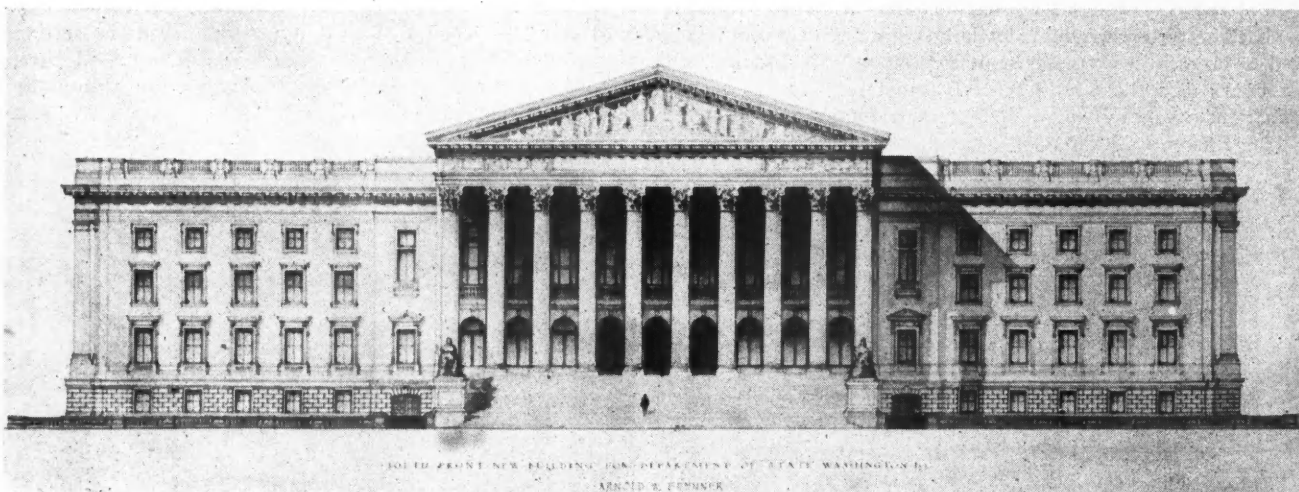
PHOENIX-LIKE, the dreams and plans of a more beautiful, as well as a more efficient and useful Washington, are arising from the rapidly cooling embers of the last Congress appropriation of some \$500,000,000 for new public buildings.

The business life of the nation is to secure a new and unified Department of Commerce. Labor is to have a new home and the dignity of law will be upheld in a new Department of Justice while a foreign policy will be promulgated from a new Department of State.

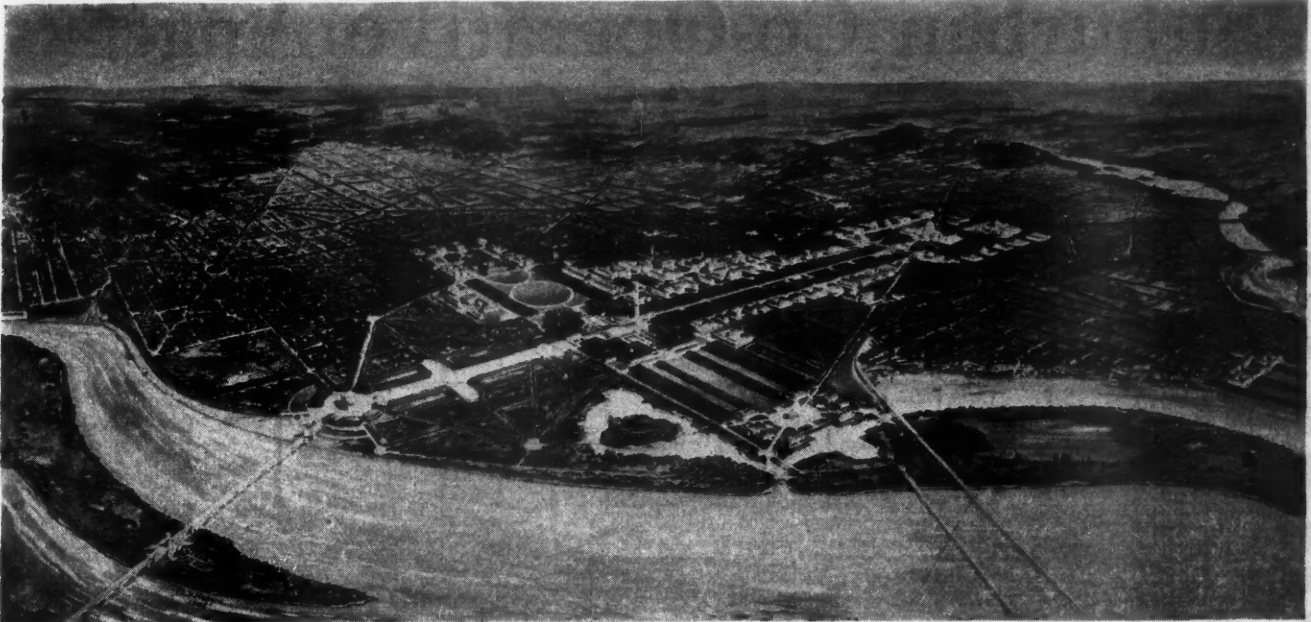
These and their related projects have the approval of the President who advocated stern economy and a cautious Secretary of the Treasury and the Commission of Fine Arts which has inherited the mantle of Major L'Enfant. Better public buildings are to bring more efficient government service, is the belief of all these experts.

Activities of the Federal Government have increased to such an extent during the last 15 years that Government bureaus are billeted in office buildings and temporary structures like soldiers occupying an enemy's country. A large section of the mile-long open space between the Washington Monument and the Lincoln Memorial has been taken for a seemingly endless series of buildings occupied by the Army, Navy and Shipping Board. They were put up during the war and, despite their arm-chair lunchrooms with white tile construction, are temporary and flimsy. Across the street from them are "Tempos" of even less substantial construction. These are of the same type that corrupt the Mall between the Capitol and the Washington Monument.

In these wooden buildings are stored irreplaceable records. Some of them house the Bureau of the Census. Others contain records of the Bureaus of Internal Reve-



South Front of the New Building Which Will Be Provided for the Department of State Under the Present Building Program for Our National Capital.



A View of Washington, D. C., from Arlington, Showing the New Bridge That Is Now Being Constructed to Connect with the Lincoln Memorial.

nue and tax papers, the loss of which would greatly embarrass Uncle Sam should fire destroy them. The bureau now has eight offices in eight buildings outside the Treasury Department and its own building. The General Accounting Office is scattered through 20 buildings. The Department of Agriculture is scattered all over Washington in 45 buildings, of which 17 are government owned and 28 are rented.

The Patent Office is months behind in its work because of cramped quarters. This venerable and classic building is crowded from basement to eaves with clerks and records, and Congress has had to authorize additional personnel to clean up the congestion.

A plan for the placing of all government buildings along the Mall between the Capitol and the Washington Monument was developed in 1901 by a committee which, later, was merged into the present Commission of Fine Arts. At the very outset there was an obstacle to such a unified treatment of this mile-long green stretch. The Botanic Garden, a few acres of glass surrounded by a forbidding iron picket fence, cuts off access to the Mall at the Capitol end. The Fine Arts Commission contends that the garden's usefulness in providing members of Congress with cuttings of shrubs and plants for distribution among their constituents, can be just as great elsewhere.

It was in anticipation of this removal that Congress authorized the location of a memorial to General Grant and later a site for a monument to General Meade was fixed, but until Congress provides a new site for the Botanic Garden the development of this section of the Mall is stopped.

The administration buildings of the Department of Agriculture and the National Museum and the Freer Gallery have been erected on the Mall in accordance with the plan of 1901. It is proposed to range new departmental buildings parallel with them and leave in the center an open space 300 yards wide from Capitol Hill to Washington Monument.

The cost of these new buildings will be partly offset by the huge sums now paid out in rent. Today the Treasury Department is spending annually \$1,135,000 in rent for privately owned buildings in all sections of Washington for different branches of the Government service. Throughout the country an additional \$23,000,000 is spent for the rent of Federal offices. The Post Office Department is

now paying more than \$12,000,000 for its rented properties.

The new buildings now about to be started will not be Greek Temples. Some of them will be of the modern office building type. Some of them will be monumental, a few of them large enough to cover more than a single block. Among these will be the Archives Building for the storage of old records of priceless historical value that are now housed in odd buildings and are in constant danger of destruction by fire, dampness and rats.—UTHAI VINCENT WILCOX.



A Concrete Bridge of One-Arch Type

MOST graceful and substantial is this newest of Pasadena bridges spanning its beautiful "Arroyo Seco." The canyon is narrow and deep, requiring a bridge-height of 68 feet though only 336 feet in length exclusive of the short approaches. The material used is wholly of reinforced concrete, and its lines extremely artistic because of their simplicity and massive form. The roadway is 20 feet, with six-foot walks on either side, and ornamental lights only at the ends of the bridge.

The Arroyo which it spans is one of California's "dry rivers," the perpetual joke of all tourists as it carries water only during the flood season.

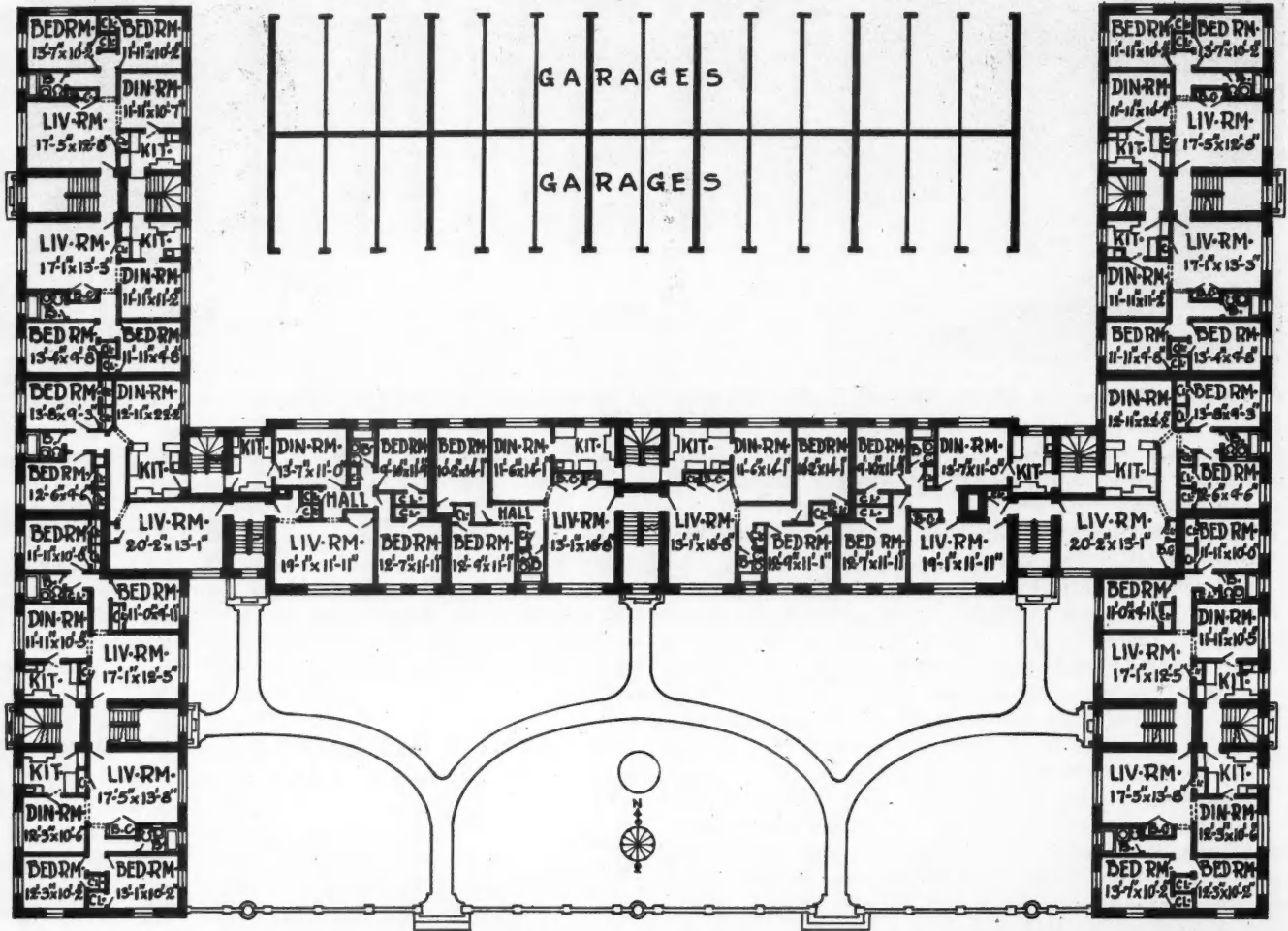
The entire cost of the structure was \$68,000, half of it paid by the citizens of Pasadena, the rest by the residents of the San Rafael Hills, whose estates cover the high ground west of the city limits. In addition to its usefulness as transportation across this deep arroyo the bridge carries water mains, gas, sewage and electric conduits. LEE McCRAE.



The "Arroyo Seco" Bridge, a Single Concrete Arch.

Suburban Co-Operative Apartments With 28-Car Garage

Herbert B. Beidler, Architect, of the Architectural Firm of Edward B. Krenn



Niles Center, a Newly Developed Chicago Suburb, Is to Have This Fine New Co-operative Apartment Building Containing 43 Five-Room Suites. There will be a men's club room, an indoor golf course and a playroom for children. In the rear will be a 28-car steam heated garage.

A Commodious Apartment Design with Ten Rooms and Two Baths

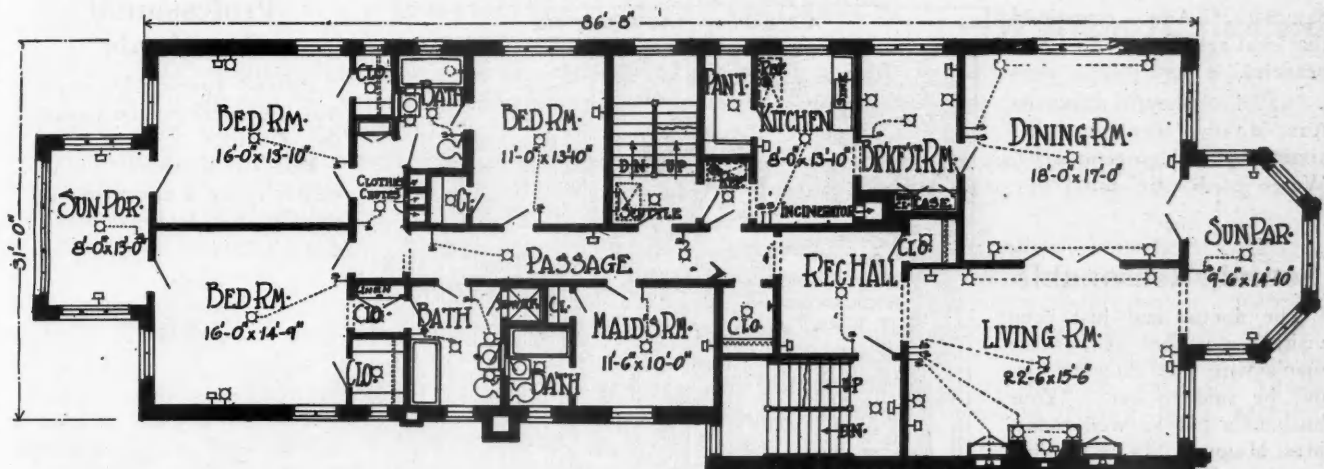
DUBIN AND EISENBERG, Chicago, Architects

AFTER the compactness of modern large apartment buildings, it is somewhat refreshing to look over the plan of a generously proportioned apartment such as shown on the floor plan on this page. Here, in each suite, we have ten rooms, sun porch and two baths. The living room is 22 feet 6 inches by 15 feet 6 inches, dining room 18 feet by 17 feet, and two of the bed rooms are about 16 feet by 14 feet each. The bay in front constitutes a sun parlor, with glass doors into both living room and dining room, making these rooms exceptionally bright and cheerful.

The two buildings shown in our illustration are both from

the same plan, only one is reversed, allowing a private service driveway to serve both buildings.

In place of the rear service entrance so often found in connection with two and three-flat buildings, there is a side entrance and interior stairway connecting with all floors. This obviates the usual rear entrances and outside stairways which occasion a noisy rear traffic and detract greatly from the privacy of the apartments passed. A pleasing feature is provided in place of these rear stairways in the shape of a sun porch, 8 by 13 feet, connecting with both rear bedrooms.



These Two Apartment Buildings, Each Containing Three Large Suites of Apartments, Are Located at 6231 and 6235 Kenmore Avenue, Chicago. The plan shown above was used for each building but reversed in one case. The rooms are large and conveniently arranged. Dubin and Eisenberg, Architects.



Building Note

A colored cook came home after midnight from a revival meeting shouting at the top of her voice. Her employer, letting her in, said:

"Aunt Mandy, this is all foolishness. Religion shouldn't be so noisy. Tell that preacher of yours to give a sermon on the building of King Solomon's temple, which arose without even the sound of a hammer. And remember that real religion is quiet and peaceful."

"Lawd, honey," answered Aunt Mandy, "us niggers ain't aimin' to build no temple yit. We is jes' blastin' now!"



Sounds Reasonable

The doctor had just been visiting a patient and as the man's wife was showing him out he said to her: "Your husband's not so well today, Mrs. Maloney. Is he sticking to the simple diet I prescribed?"

"He is not, sorr," came the reply. "He says he'll not be after starvin' himself to death just for the sake of livin' a few years longer."—*Furnace Installations.*



The Builders

The following poem, quoted by a speaker at the Asheville convention of the A. G. C., appealed to a great many who heard it, and for this reason it is being presented here:

"The architects dream, they are dreamers of dreams,
And the builders make dreams come true,
And from steel and stone and from clay and sand
They fashion the world anew;
But whether they work with marble or sod,
The builders are hand in hand with God.

"They go to the forest for palm and pine,
The stuff for the humbler homes,
And the mountains give up their granite gifts
For the statelier spires and domes;
But whether they work in marble or sod,
The builders are hand in hand with God.

"They rear huge piles that pierce the sky,
And the ships that master the sea,
They bridge the rivers with spans of steel
In the service for you and me.
But whether they work in marble or sod,
The builders are hand in hand with God.

"The dreamers dream and the builders build,
And the work of the world goes on,
And the work of the dreamer and builder stays
When the dreamer and builder are gone;
But whether they work in marble or sod,
The builders are hand in hand with God."

—WILL REED DUNROY.



Professional Standards

Patient (nervously) — And will the operation be dangerous, Doctor?

Doc — Nonsense! You couldn't buy a dangerous operation for forty dollars.—*Cornell Widow.*



Eternity

A negro parson was seeking to impress upon his flock the immensity of eternity. He pointed dramatically toward a window, where was visible in the distance a huge mountain.

"Ef er sparrer wuz er flyin' roun' dat mount'n day in an' day out, jest techin' it wid de tip o' his wing oncet ebery thousan' years—when dat mount'n wuz wore down ter

ter de groun', den it would be just be bre'kfus time in hell."—*Brown Jug.*



Add Snappy Comebacks

Angry Motorist—Some of you pedestrians walk along just as if you owned the streets.

Irate Pedestrian—Yes, and some of you motorists drive around just as if you owned the car!—*Judge.*



A Natural Mistake

Boss—Say, where in blazes are you two worthless porters going? Why don't you get to work?

Jackson—We're working, boss. We're carrying dis here desk up de stairs.

Boss—I don't see any desk!

Jackson—Well, for the Lord's sake, Snops, ef we hain't gone an' clean forgot de desk.



Business "Fust"

Mandy to Sambo, reading the evening newspaper. "Listen heah, yo'! Ah didn't buy yo' dat paper for entertainment! Jes' confine yo'self to dem want ads, niggah!"



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 Pat. March 15, 1921, and Sept. 30, 1924.
 ColorKeed Plan Patented April 19, 1927.

COLORKEED HOME PLANS

TRADE MARK
 Registered in U. S. Patent Office.

"Improved Roads and Paved Streets Open Up New Home Building Opportunities." —William A. Radford

THE AUTO is the builder's best friend. It has not only widened his field of easy operation, making it now a simple matter to handle work over half a county; but it has also brought him hundreds of new home building customers.

Open up an attractive subdivision or put up some good looking homes out on the edge of town where land is cheap and landscapes charming and you will see how easily the home buyers drive out from town, and how easily they get back and forth.

But the greatest thing the auto has done for builders is to teach them the value of modern improvements. We are no longer willing to drive a 1916 model; neither are we willing to buy and live in the out-of-date house equipped with fixtures and in the style of a generation ago. The buyers today want improved quality and up-to-date appointments and the builders who are willing to keep in step with the times are doing well supplying this automobile-driving, home-seeking world.





The LACONIA

Inexpensive Home of Modified Colonial Design, ColorKeeD Floor Plans on Page Opposite

THE popular sun parlor or living porch of the present day has done much to modify the old-time styles of architecture. For instance, the true Colonial ordinarily places the entrance exactly on the center line, arranging all windows in a perfect balance, right and left. If a sun room or porch is wanted at one end there must be a similar extension at the other, which calls for a greater width than the average lot will accommodate.

But architects and home builders have compromised this problem for the smaller home builder by arranging a graceful symmetry of the unbalanced sort. For instance, in the design presented here, the entrance is moved to the extreme left of the house proper, the balance being maintained by building on the large living porch and carrying the heavy cornice around it continuing the lines of the main house design.

The result is a graceful

composition of genuine Colonial feeling. The width is only about 37 feet, which leaves ample room for the drive to the garage, all on a 50-foot lot. The house proper measures $27\frac{1}{2}$ by 24 feet and contains a very large living room lighted from three sides, a square corner dining room, convenient kitchen

with good pantry space; while upstairs there are three big corner bedrooms with an extra large bath. A folding stairway in the ceiling of the upper hall gives access to the third floor where there is considerable good and usable space.

The basement in this design is laid out in a very interesting way. A partition through the middle divides the laundry and associated activities from the heating plant and its associated equipment. Also the fuel room placed under the living porch extension is separated from the rest of the basement by a solid brick wall and a tightly fitting door. There is little excuse in the



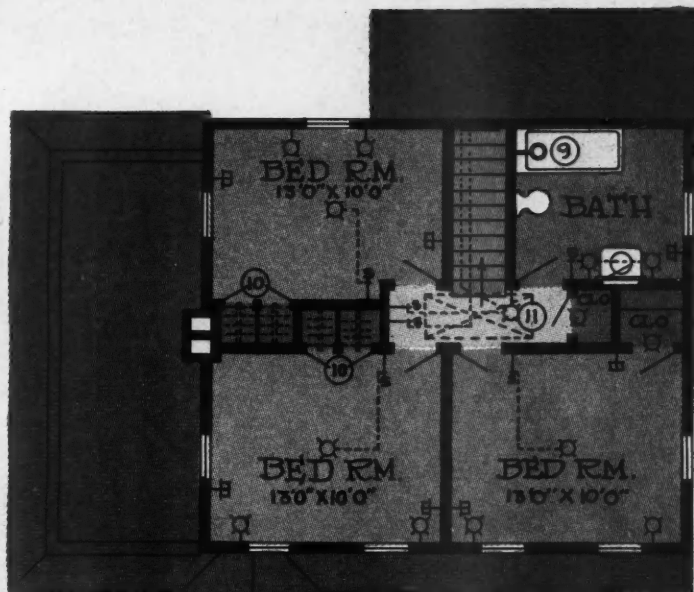
Detail of Front Entrance

24'-0"

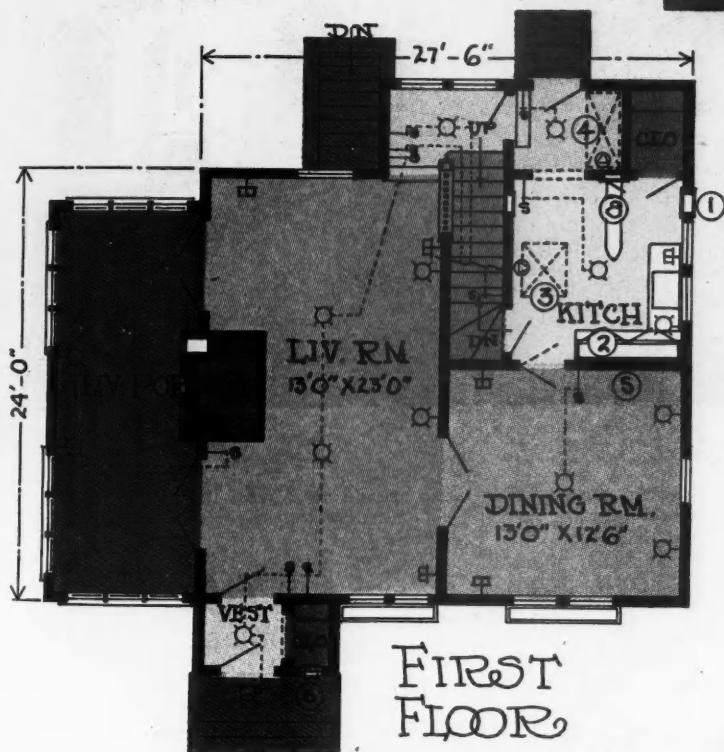
ColorKeeD Floor Plans of "The LACONIA"

modern home for basement dust and dirt; and this separation of the basement activities will encourage good housekeeping and will keep what dust and dirt there is to a minimum.

The recommended equipment for this home, as well as for all other ColorKeeD designs, is indicated by the small numbered circles. Study the Key to Equipment to determine what each piece of equipment is. The up-to-date planner and builder of homes today is familiar with all of these items and is making provision for them. The basement equipment is probably most important and the items indicated for the basement of "The Laconia" should be planned into every other basement. R. C. Hunter and Bro., Architects.



SECOND FLOOR



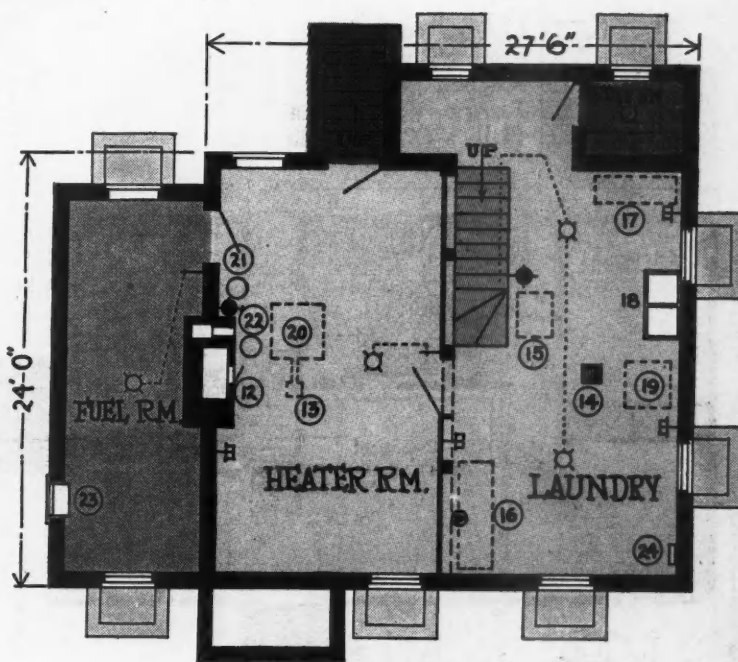
FIRST FLOOR

Key to Equipment

- | | |
|-------------------------------|---------------------|
| ① Ventilating Fan | ⑭ Electric Ironer |
| ② Kitchen Cabinets | ⑮ Laundry Tubs |
| ③ Gas or Electric Range | ⑯ Washing Machine |
| ④ Electric Refrigerator | ⑰ Heating Plant |
| ⑤ Thermostat | ⑱ Water Softener |
| ⑥ Built-in Mail Box | ⑲ Water Heater |
| ⑦ Fireplace Throat and Damper | ⑳ Coal Chute |
| ⑧ Built-in Ironing Board | ㉑ Electric Panel |
| ⑨ Tub Shower | Weatherstrips |
| ⑩ Efficiency Wardrobes | Storm Sash |
| ⑪ Disappearing Stairs | Screens |
| ⑫ Clean-out Doors | Lighting Fixtures |
| ⑬ Oil Burner | Convenience Outlets |
| ⑭ Floor Drain | Water Supply System |
| ⑮ Laundry Stove | Radiant Gas Heater |
| ⑯ Clothes Dryer | Casement Windows |
| | Dishwashing Sink |

COLORKEED HOME PLANS

- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof
- Basement
- Fruit Cellar
- Fuel Room
- Stairs



BASEMENT



The LA CROSSE

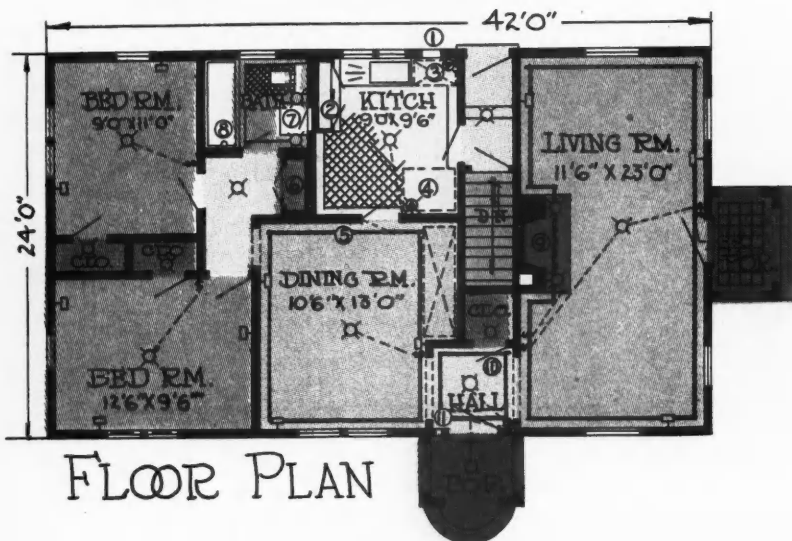
A HOME of individuality and charm in rough troweled stucco. The cheerful red roof with its unexpected curves makes a fascinating picture. Dimensions are 24 x 42 feet and the arrangement of five rooms and bath is very practical.

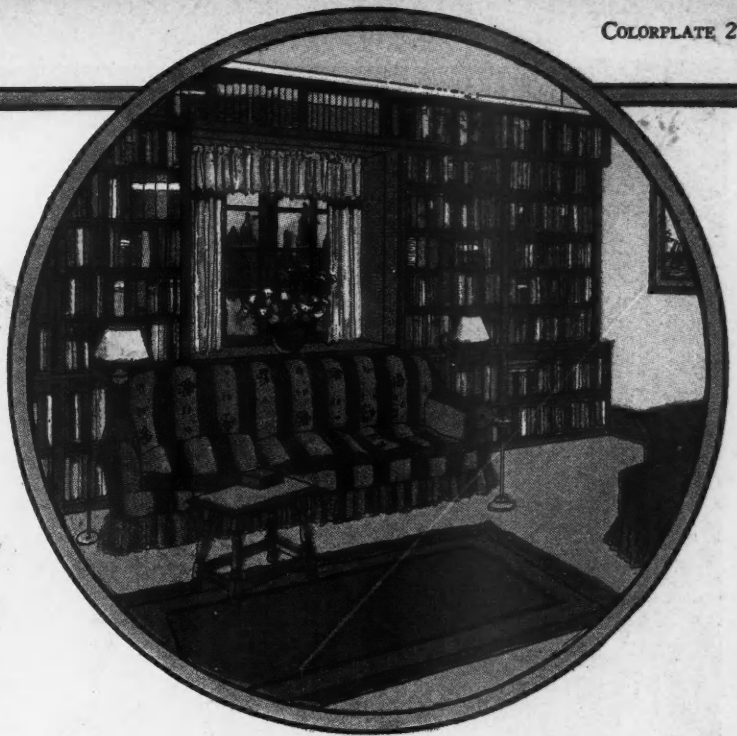
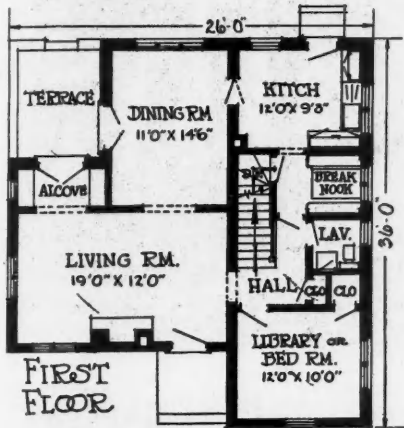
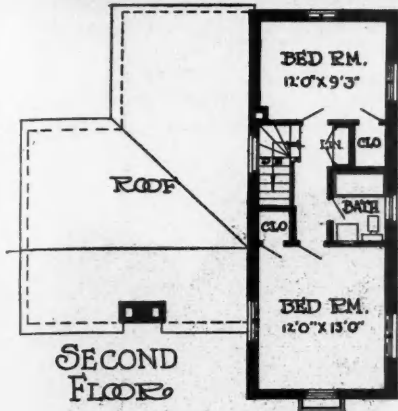
COLORKEY HOME PLANS TRADE MARK D

	Living Room		Closet
	Dining Room		Bed Room
	Kitchen		Bath and Lav.
	Pantry		Porch
	Halls		Roof

Key to Equipment

- ① Ventilating Fan
- ② Kitchen Cabinet
- ③ Mechanical Refrigerator
- ④ Gas or Electric Range
- ⑤ Thermostat
- ⑥ Moth Proof Wardrobe
- ⑦ Medicine Case
- ⑧ Tub Shower
- ⑨ Fireplace, Throat and Damper
- ⑩ Mirror Door
- ⑪ Built-in Mail Box
- Weatherstrips
- Storm Sash
- Screens
- Lighting Fixtures
- Convenience Outlets
- Electric Panel
- Washing Machine
- Clothes Drier
- Coal Chute
- Heating Plant
- Oil Burner
- Water Supply System
- Hot Water Supply
- Water Softener
- Radiant Gas Heaters
- Casement Windows
- Dishwashing Sink





The LAKE COMO

THE strong personality of the Mediterranean style continues to have its appeal. No town and no suburb is complete without its Spanish or Italian design. The strong lines and the vivid coloring make a wonderful contrast relished by those who like to be different. The example illustrated below makes a beautiful home and the arrangement of rooms as indicated to the left leaves nothing to be desired for the modern American home. The color sketch above suggests the effectiveness of open book shelves filled with brightly colored bindings has the dominant decorative motif for the library.





The LAIRDSVILLE

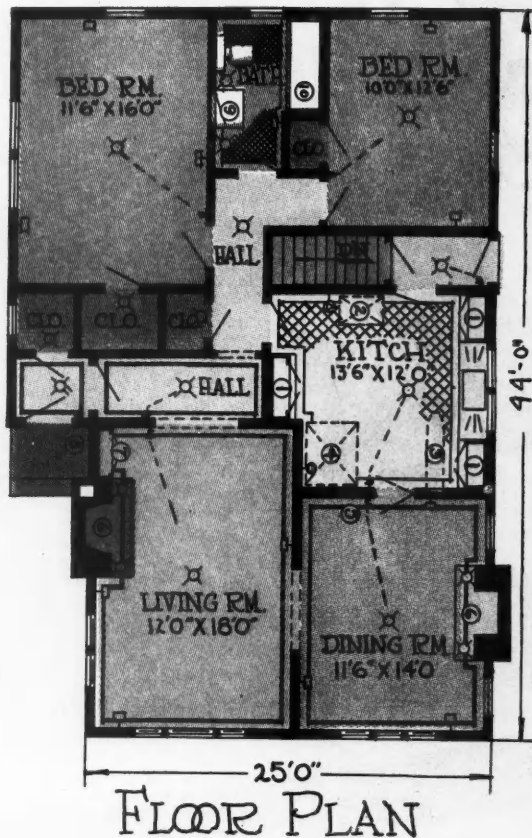
AN English cottage of strong personality featuring the high ceilinged, studio-type living room. This design illustrates well the effectiveness of unusual windows and window arrangements. Five delightful rooms are pictured in the ColorKeeD Floor Plan below.

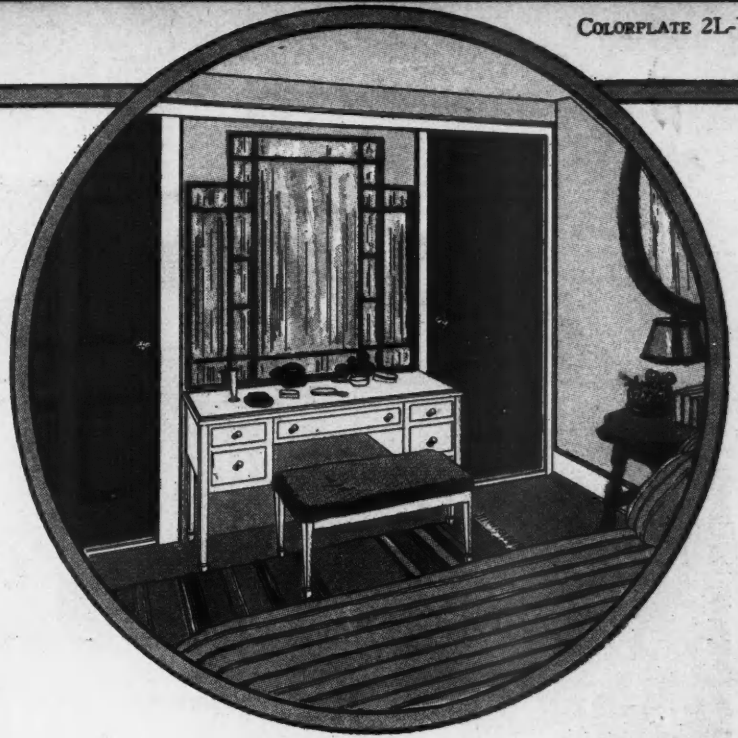
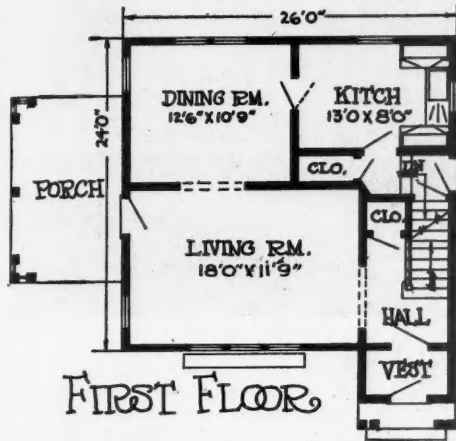
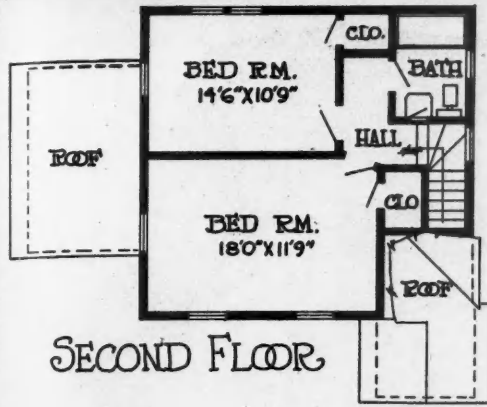
COLORKEED HOME PLANS TRADE MARK

	Living Room		Closet
	Dining Room		Bed Room
	Kitchen		Bath and Lav.
	Pantry		Porch
	Halls		Roof

Key to Equipment

① Kitchen Cabinets	Lighting Fixtures
② Electric Refrigerator	Convenience Outlets
③ Built-in Ironing Board	Electric Panel
④ Gas or Electric Range	Washing Machine
⑤ Thermostat	Clothes Drier
⑥ Fireplace Throat and Damper	Coal Chute
⑦ Built-in Book Case	Heating Plant
⑧ Built-in Mail Box	Oil Burner
⑨ Medicine Case	Water Supply System
⑩ Tub Shower	Hot Water Supply
Weatherstrips	Water Softener
Storm Sash	Radiant Gas Heaters
Screens	Casement Windows
	Dishwashing Sink

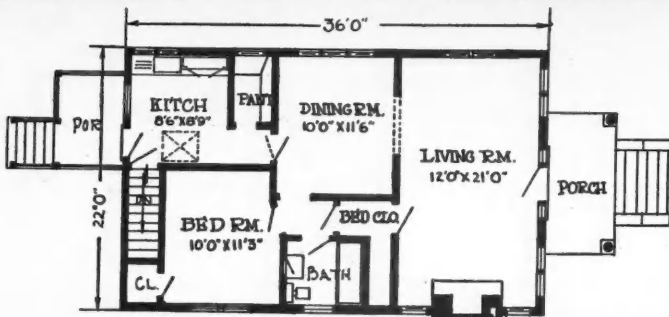




The LAKEVIEW

HERE is a very satisfactory low-cost home containing five large rooms and bath besides the two comfortable porch additions which mean so much to the livability of the home without adding very much to the cost. The house proper is only 24x26 feet. However, with its heavily shingled side walls and prominent roof lines, its window flower boxes and window shutters it makes a stalwart appearance, holding its head up in any neighborhood. Color sketch above suggests furnishings for one of the bedrooms.

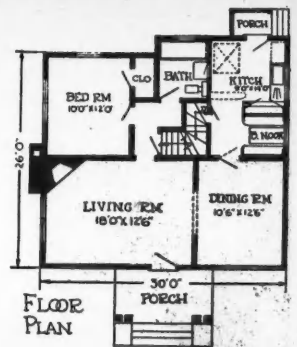




FLOOR PLAN

The LAMONT

Above and to the left we present a narrow lot home 22x36 feet, of five-room efficiency, thanks to the bed closet off the living room.



FLOOR PLAN

The LAMPORT

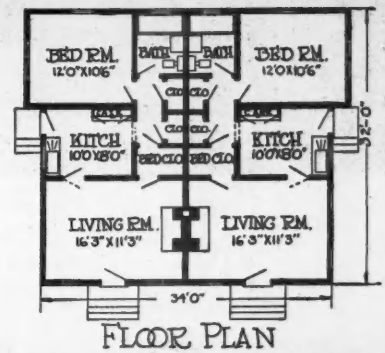
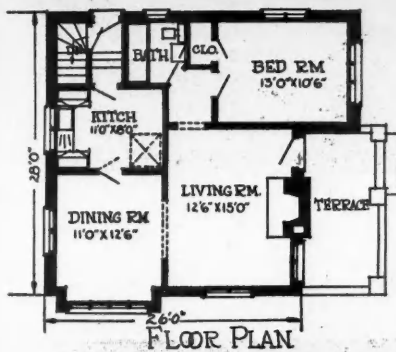
Below and to the right is an interesting little bungalow of four rooms and bath, size 26x30 feet.





The LANESVILLE

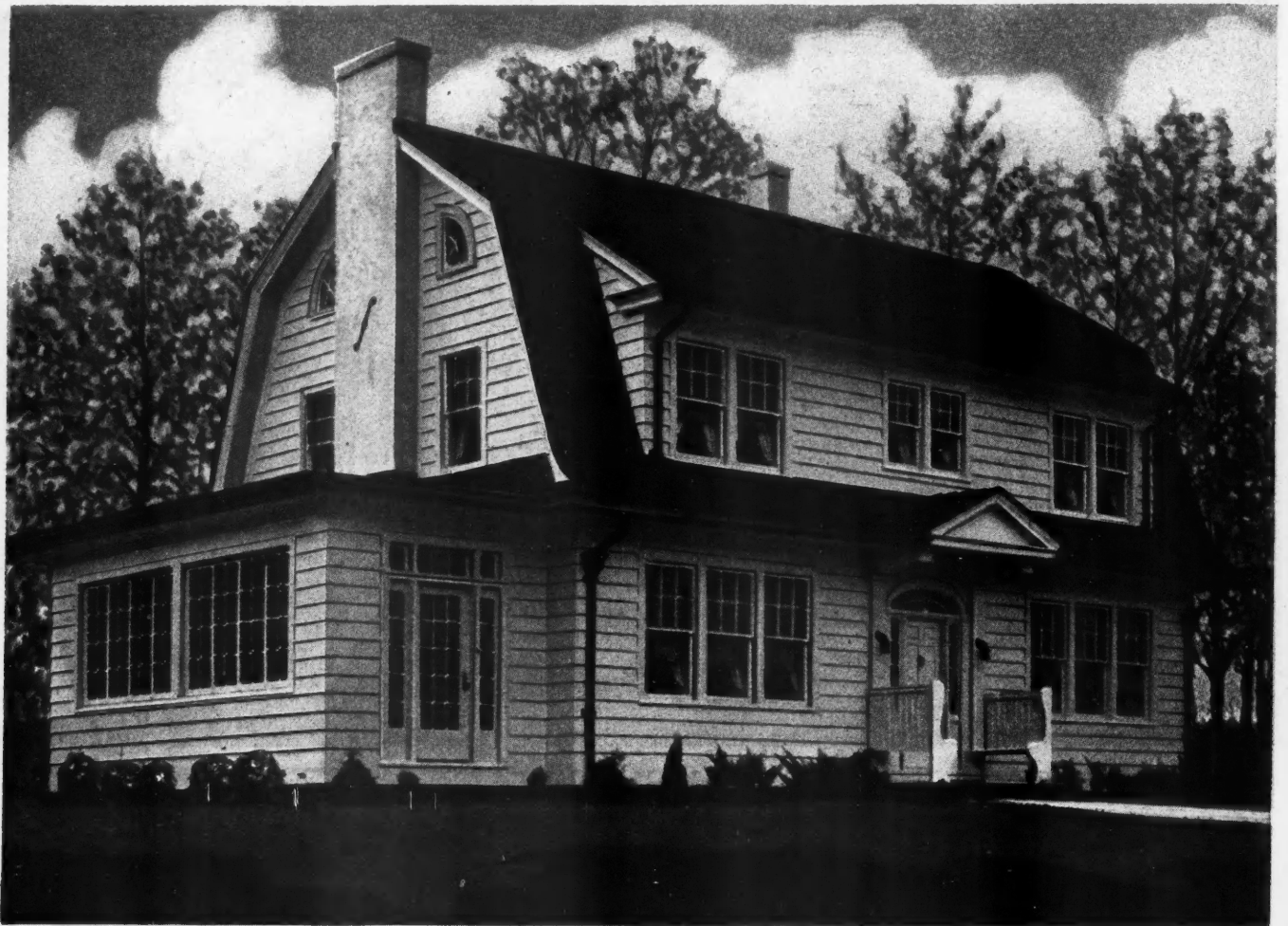
Above and to the right we present a substantial four-room home 26x28 feet.



The LANSFORD

Below and to the right is a double bungalow, three rooms and bath in each half. A money-maker in many localities.



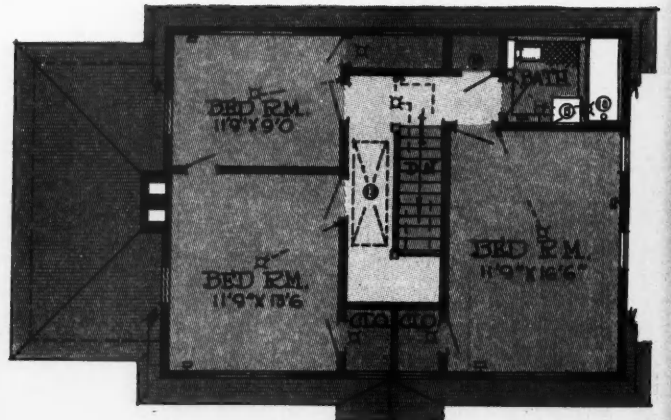
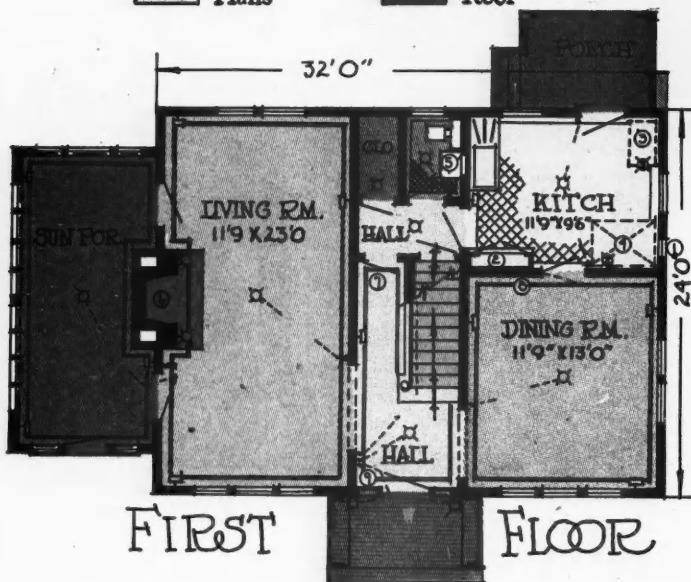


The LATHROP

HERE we illustrate a typical Dutch Colonial design embellished with that modern necessity, the big sun porch opening from the living room. In addition to this fine solarium, six rooms and two baths are provided—all of good size and well arranged.

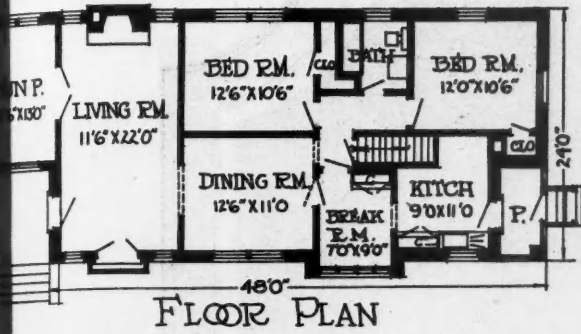
COLORKEY HOME PLANS TRADE MARK

- | | | | |
|--|-------------|--|---------------|
| | Living Room | | Closet |
| | Dining Room | | Bed Room |
| | Kitchen | | Bath and Lav. |
| | Pantry | | Porch |
| | Halls | | Roof |



Key to Equipment

- | | |
|-------------------------------|---------------------|
| ① Ventilating Fan | Screens |
| ② Kitchen Cabinet | Lighting Fixtures |
| ③ Refrigerator | Convenience Outlets |
| ④ Range | Electric Panel |
| ⑤ Medicine Case | Washing Machine |
| ⑥ Fireplace Throat and Damper | Clothes Drier |
| ⑦ Mirror Door | Coal Chute |
| ⑧ Thermostat | Heating Plant |
| ⑨ Built-in Mail Box | Oil Burner |
| ⑩ Tub Shower | Water Supply System |
| ⑪ Disappearing Stairs | Hot Water Supply |
| ⑫ Moth Proof Closet | Water Softener |
| Weatherstrips | Radiant Gas Heaters |
| Storm Sash | Casement Windows |
| | Dishwashing Sink |

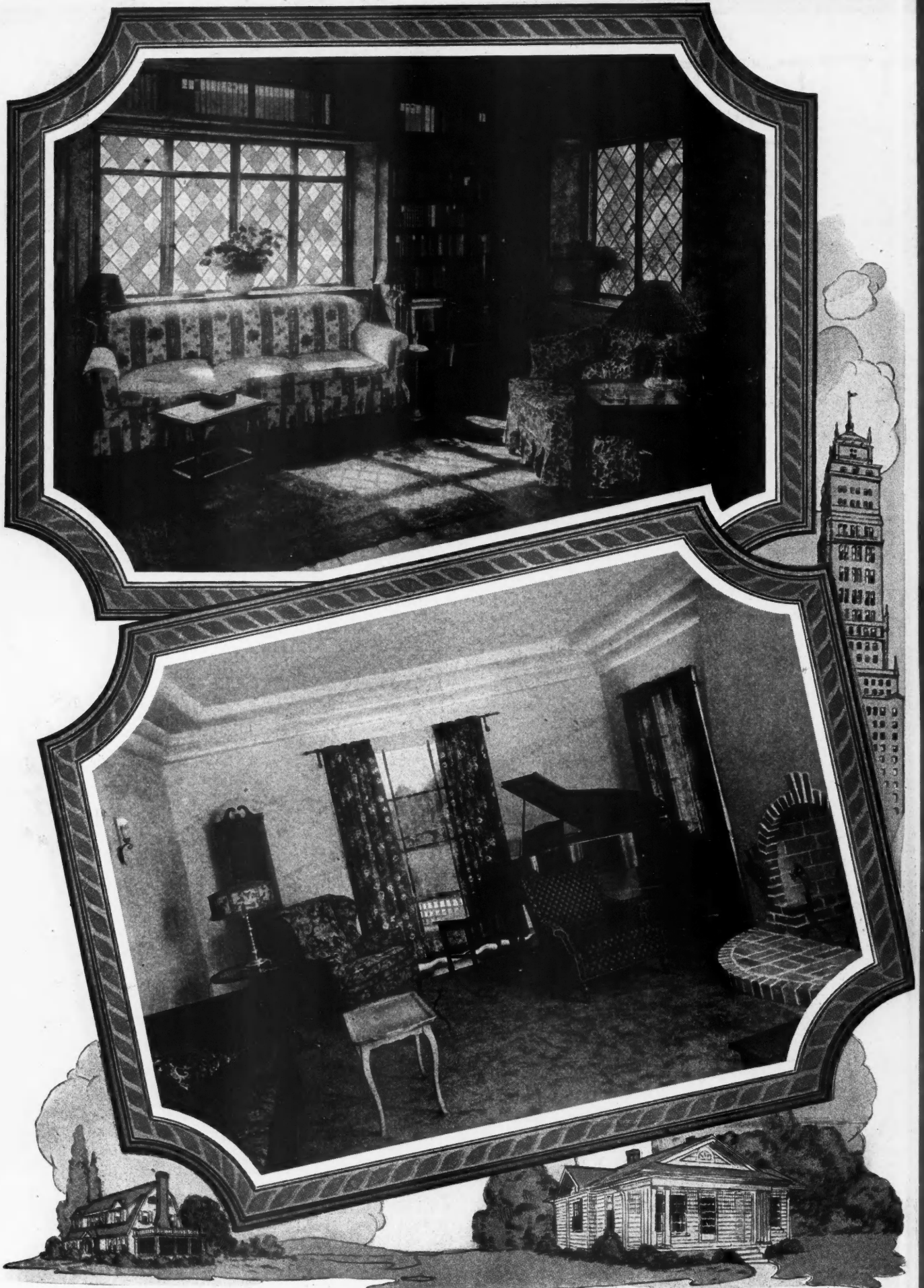


The floor plan shows a very attractive front arrangement with large living room, sun porch and connecting dining room. The bedrooms and bath are well separated from the rest of the house for quiet and privacy. The cheerful little breakfast room adjacent to the kitchen will be much used. The size on the ground is 24x48 feet, plus porch extensions. Color sketch to right suggests furnishings for the breakfast room.

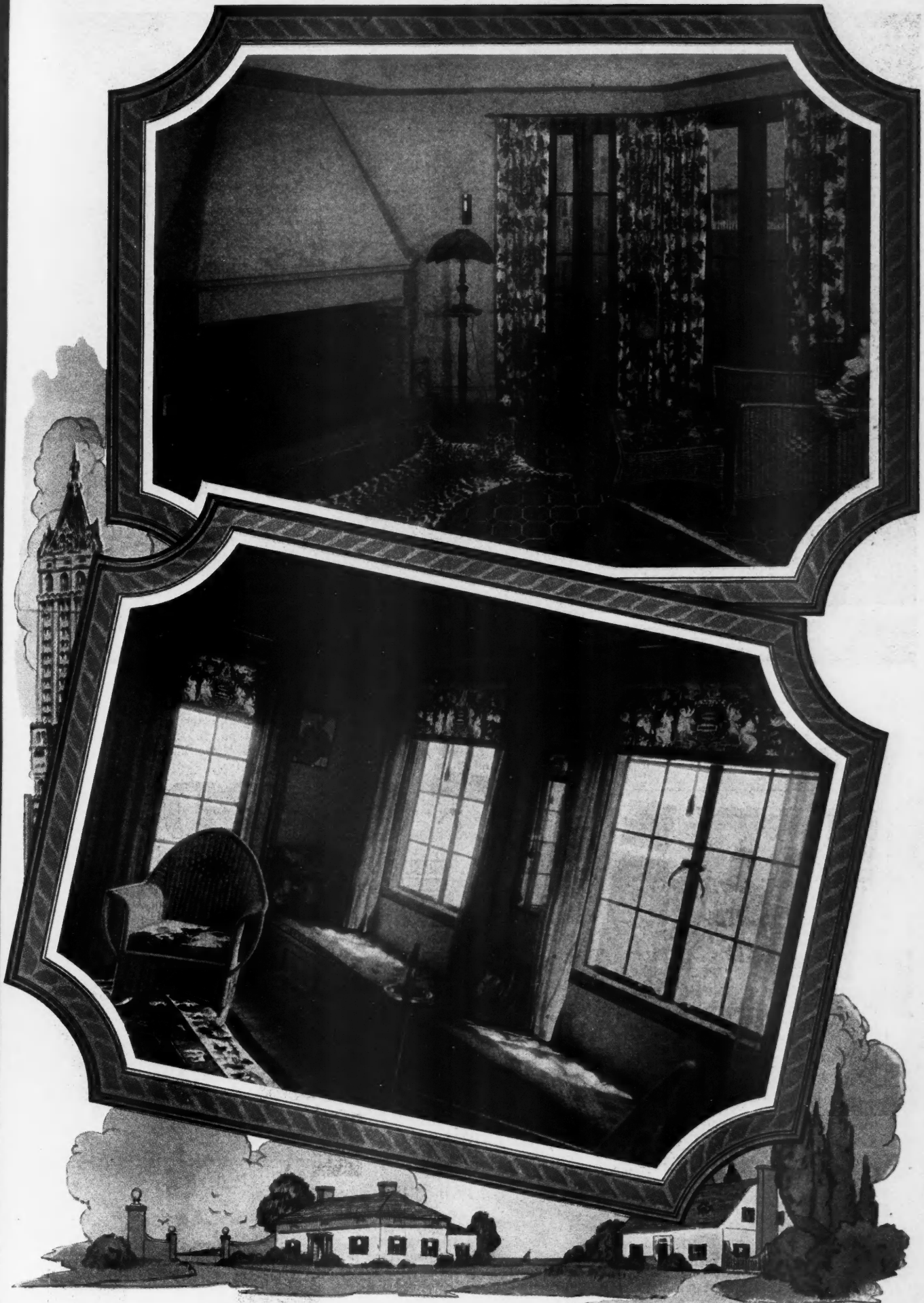
The LAVERNE

THE brick bungalow has been very popular in many cities where its narrow layout has permitted it to be built on 30-foot lots and still leave some space all around for light, air, landscaping and a place for the children to play. Thousands of home lovers have found in this type of structure the key to their problem. The design illustrated here is one of the most attractive. The arrangement of the rooms follows the customary flat-building style. In fact, life in this bungalow is similar to that in a first floor apartment with the disagreeable features left out. An attractive exterior is presented by using face brick all the way around, trimmed with stone and appropriately roofed with green tile.





The music room and the library pictured above contain a wealth of good suggestions for furnishing the modern home.

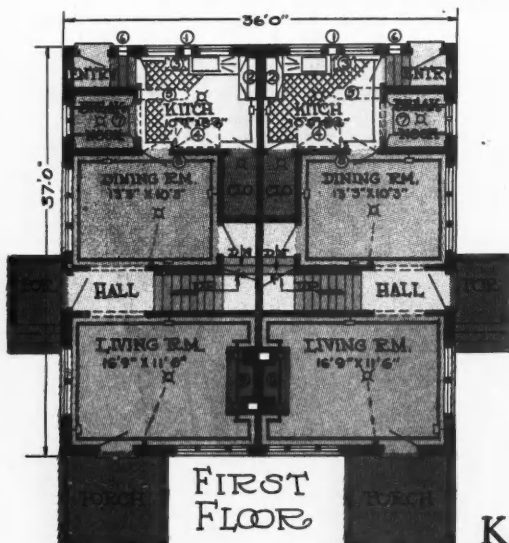


Two living rooms of unique individuality are illustrated here.



The LAWRENCE

A DOUBLE house popular in the east is illustrated—the first story brick and the second story a shingled gambrel. Each half has its own side entrance and its private front porch. Living room, dining room, kitchen, breakfast nook and stair hall are on the first floor and three big bedrooms, one of them labeled sleeping porch on the second floor.

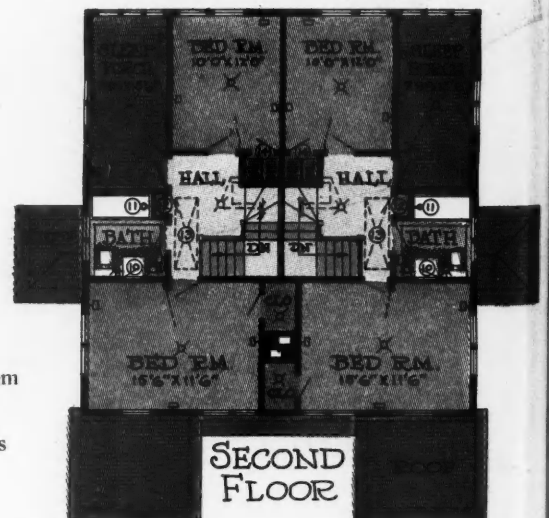


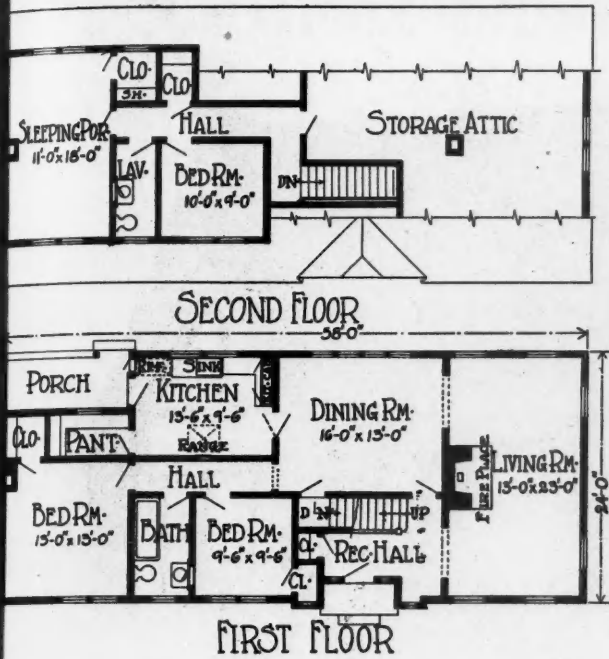
COLORKEY
HOME PLANS
TRADE MARK

	Living Room		Closet
	Dining Room		Bed Room
	Kitchen		Bath and Lav.
	Pantry		Porch
	Halls		Roof

Key to Equipment

- | | | |
|-------------------------------|------------------------|---------------------|
| ① Ventilating Fan | ⑩ Tub Shower | Clothes Drier |
| ② Kitchen Cabinets | ⑪ Linen Closet | Coal Chute |
| ③ Refrigerator | ⑫ Disappearing Stairs | Heating Plant |
| ④ Range | ⑬ Efficiency Wardrobes | Oil Burner |
| ⑤ Ironing Board | ⑭ Weatherstrips | Water Supply System |
| ⑥ Package Receiver | ⑮ Storm Sash | Hot Water Supply |
| ⑦ Breakfast Nook | ⑯ Screens | Water Softener |
| ⑧ Thermostat | ⑰ Lighting Fixtures | Radiant Gas Heaters |
| ⑨ Fireplace Throat and Damper | ⑱ Convenience Outlets | Casement Windows |
| ⑩ Medicine Case | ⑲ Electric Panel | Dishwashing Sink |
| | ⑳ Washing Machine | |





A glimpse of the big living room looking through to the stairs.

The LEAFDALE

THE impressiveness of length is well illustrated in this design—ideal for a wide lot. The street frontage measures 58 feet, the depth 24 feet. The high arched entrance suggests the high ceilinged living room at the right, which together with the reception hall and dining room occupy half of the layout. To the left are two bedrooms and bath and the kitchen. Upstairs are additional sleeping quarters. The entire design has a delightfully informal, home-like appearance, suggestive of the good old times in the country.





The LELAND

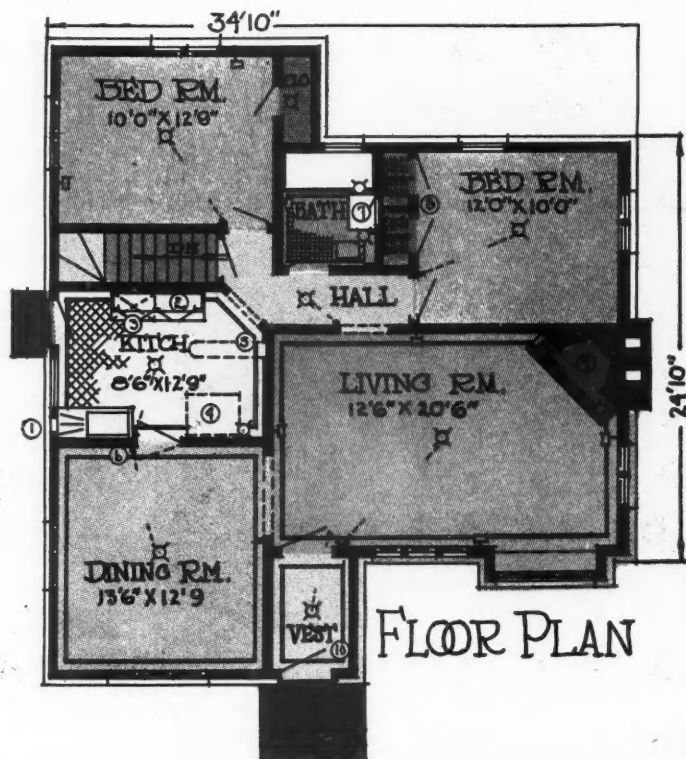
THIS is an English, half-timbered design embellished with face brick around the entrance. It makes a charming home of many surprises. The ColorKeeD plan below shows the ingenious way the rooms are arranged, five big rooms and bath.

COLORKEED HOME PLANS

-  Living Room
-  Dining Room
-  Kitchen
-  Pantry
-  Halls
-  Closet
-  Bed Room
-  Bath and Lav.
-  Porch
-  Roof

Key to Equipment

- | | |
|-------------------------------|---------------------|
| ① Ventilating Fan | Lighting Fixtures |
| ② Kitchen Cabinet | Convenience Outlets |
| ③ Electric Refrigerator | Electric Panel |
| ④ Range | Washing Machine |
| ⑤ Ironing Board | Clothes Drier |
| ⑥ Thermostat | Coal Chute |
| ⑦ Medicine Case | Heating Plant |
| ⑧ Efficiency Wardrobes | Oil Burner |
| ⑨ Fireplace Throat and Damper | Water Supply System |
| ⑩ Built-in Mail Box | Hot Water Supply |
| Weatherstrips | Water Softener |
| Storm Sash | Radiant Gas Heaters |
| Screens | Casement Windows |
| | Dishwashing Sink |



Excellent Design for a Ten-Story Office Building

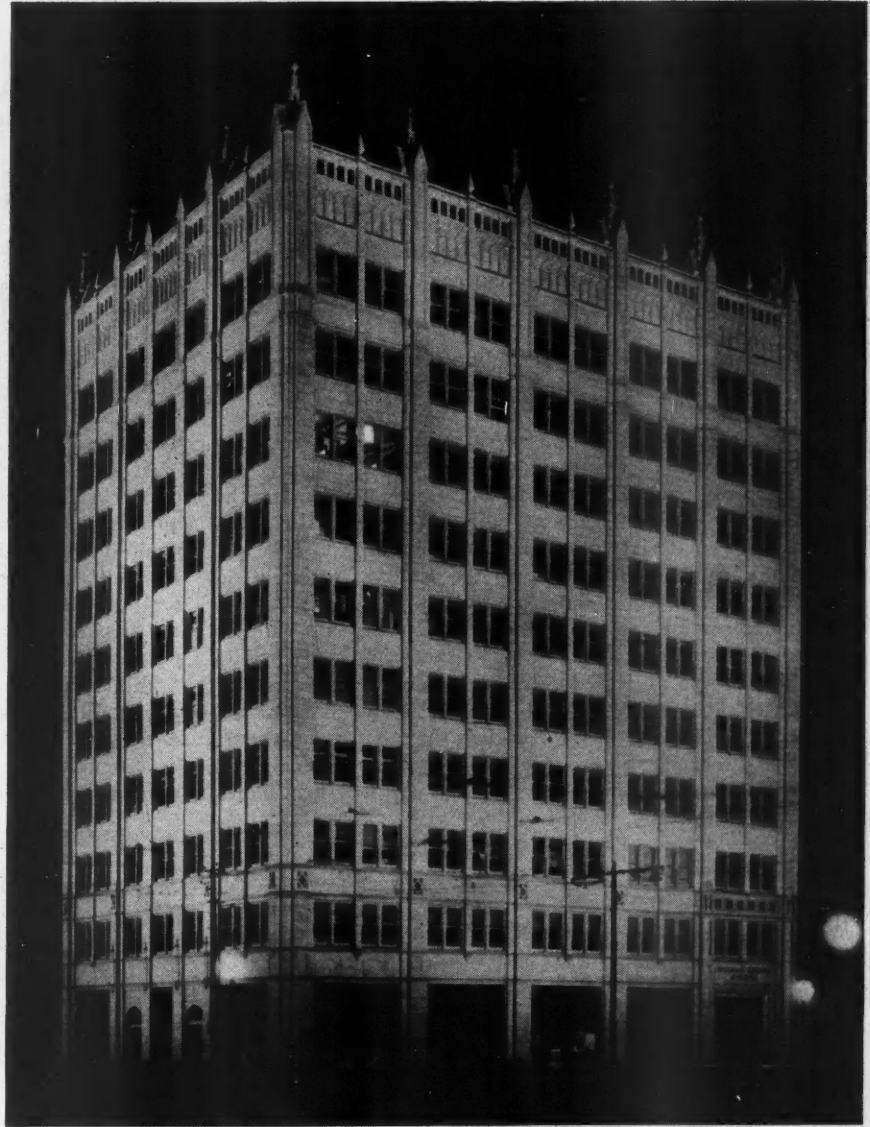
RALPH E. SCHAMELL, Architect

THIS ten-story office building for the National Reserve Life Insurance Company, Topeka, Kansas, built at a cost of \$500,000, is excellently designed, built and equipped.

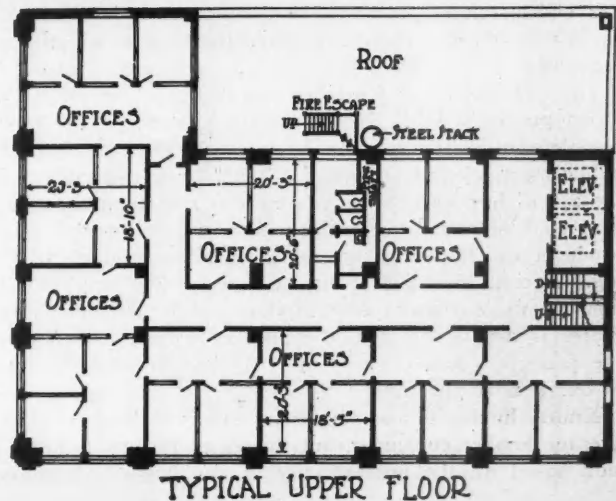
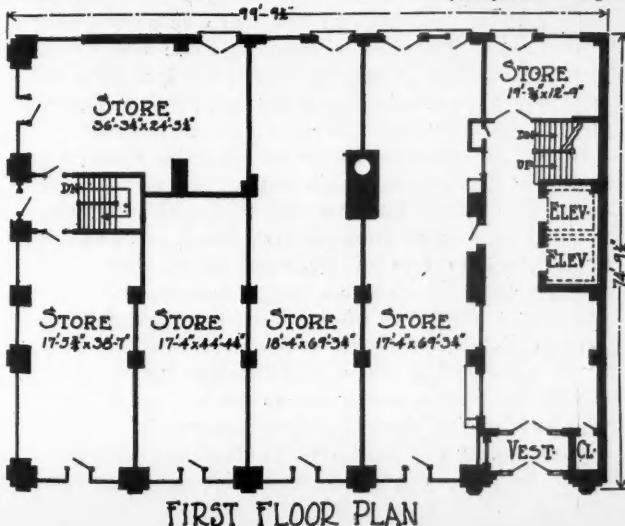
The style of the building is gothic and as the building is flood-lighted every night the impressiveness of this design is vividly presented to every passer-by. The exterior of the building is in terra cotta with polychrome colors. The interior lobby is also of terra cotta. Structurally, the building is a reinforced concrete frame with reinforced concrete floor slabs, brick curtain walls and brick backing for the terra cotta. All the corridors are finished with terrazzo floors, and Tennessee marble wainscots, seven feet high. All partitions throughout the building are constructed of 2-inch solid metal lath and plaster. All wood trim is in oak.

The first floor of the building is designed for shops and stores in addition to the offices of the International Mortgage Trust Company. The walls, floors, counters and fixtures of the trust company's rooms are of marble. The trust company vault is equipped with cedar lined storage space so that this company may rent space for the storage of furs.

The entire building is heated by means of a vacuum steam system. Radiation is automatically operated and thermostatically controlled. The two boilers in the basement are fitted with automatic oil burners, the fuel being stored underground outside the building. Other mechanical equipment in the basement includes a circulating refrigerated water system to drinking fountains on each floor. All water throughout the building is mechanically sterilized.



Night Picture of the National Reserve Life Insurance Company's Building, Topeka, Kansas. The flood lighting is so effective that the architectural lines of the building show to splendid advantage. The structure, complete, cost \$500,000. Ralph E. Schamell, Architect.



Better and Cheaper Homes

Use of End-Matched Soft Wood Lumber Represents Great Forward Step in Lumber Industry, National Wood Committee States in Special Report

WHAT the welding process has done for the metal industry the end-matching process will do for the lumber industry, says a report entitled "End-Matched Softwood Lumber and Its Use," issued recently by the National Committee on Wood Utilization of the Department of Commerce.

A sub-committee on end-matched softwood lumber headed by Mr. William F. Chew, representing the National Association of Builders' Exchanges, Baltimore, Maryland, and composed of eleven members recruited from leading architects, engineers, builders, contractors and lumbermen, has made a thorough study of the application of the end-matched system to softwood lumber.

For years, the committee report says, hardwood flooring strips have been provided with a tongue at one end and a groove at the other, thereby enabling the joining of two or more pieces. This principle now applied to softwood lumber will attain an even greater importance because of the wider general application of softwood lumber both for building construction and industrial uses.

Heretofore many billions of feet of lumber of lengths shorter than eight feet have not found an outlet, not because the material was defective, but due to the fact that the consumers have been in the habit of insisting on long lengths to be cut short on the job.

While for many purposes these short lengths would be difficult to handle, the end-matching of this stock would put them in the preferred class of building material. The committee's report points out that end-matched softwood lumber will be of the greatest importance for such purposes as flooring, ceiling, sheathing, concrete forms, and for similar covering purposes. It may be laid just like a ribbon and the end, sawed off at the extreme of a tier, may be used to start the following tier. In this way the material is practically one hundred per cent useable. End-matched lumber has also a very wide application in industry for such purposes as elevator construction, packing boxes, refrigerator and cooling rooms, bins, conveyors and for a number of other similar uses.

According to Axel H. Oxholm, director of the committee, this end-matching project is the second of a series which has for its object a more complete utilization of our timber resources.

The end-matching of lumber will increase the variety of forest products which is an important factor in the more complete utilization of the tree. It is obvious that the public must take advantage of all short cuts to economy in the use of lumber because commercial reforestation, which is of vital interest to the entire nation, is only possible if the producer can find a market for the various products of the log. A continued liberal use of lumber now employed in housing more than ninety million people in the United States is dependent upon the public's willingness to meet the producers half way in making the most sensible use of our lumber products.

Knotty lumber is a synonym for defective lumber, to the average lumber consumer, but this is an erroneous impression based on the unfamiliarity of the lumber-consuming

public with the character of knots and the application of knotty lumber without impairing good construction.

"It is possible to effect a saving of about 50 per cent of the cost of the lumber entering into the construction of floors, if sound, tight knotted stock is used for that part of the floor which is covered with carpets or rugs. Of course it is not recommended that defective knots be included in such material," says Axel H. Oxholm, director of the committee.

Current practice has usually called for flooring free from knots. While it is admitted that this clear flooring is very sightly, it is a proven fact that the flooring strips containing sound, tight knots are just as serviceable, although some people may object to the appearance. On the other hand, if the best grade of flooring strips could be reserved for that part of the floor which is exposed to view, and sound tight knotted stock be used under rugs, carpets or other floor covering, it is evident that this knotty material may be used to good advantage.

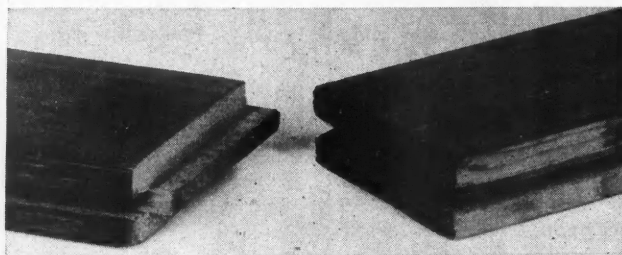
As our virgin timber supplies diminish, the percentage of lumber free from knots is decreasing, and as a consequence prices for such material will go up. If the public could put this tight knotted stock to good use it would eliminate an abnormal demand for high grade material for purposes where such stock is not needed, thereby permitting a continued liberal use of wood for flooring purposes.

While the use of sound tight knotted stock may not find a general application for floors covered with small rugs, it is confidently expected that this class of material will be extensively used in office buildings, hotels, stores, and other types of construction where only part of the wooden

floor is exposed to view. Inasmuch as the difference in price of sound tight knotted flooring strips and that of material free from all defects may be as high as 50 per cent, it is evident that a considerable economy in the cost of construction may be effected in this manner.

Besides the usual flooring machinery, the new product requires only the addition in the flooring factory of sim-

ple machinery for producing the very accurately cut end joint, a tongue on one end and a groove on the other. In laying, these joints are allowed to come where they will, just as in hardwood flooring, and the strips are nailed only at the floor joists. On the square end product it was necessary, of course, when making a joint in the middle of the floor for the carpenter to cut the piece back to the nearest floor joist, to miter-saw both ends of the joint as accurately as possible with a fine saw and then nail both ends down to the joist. Even when carefully done, one end might be a little high or low and require scraping down. On the new product, the end-matching brings the two ends into such exact alignment of the face that the joint is almost imperceptible to the touch, and is rigidly held. The carpenter does no sawing except at the wall at the end of the run, and this saw cut is not a joinery cut because hidden by the wall base or the shoe moulding, and can be sawn without careful squaring. The new product is, therefore, much faster to lay, by a difference which is often surprising.



End Matched Softwood Flooring Makes a Better and a Cheaper Job. Photo by the National Committee on Wood Utilization Department of Commerce, Washington, D. C.

End-matched flooring is 100 per cent floor; there need be no cutting waste.

The square-end product is preferred in long lengths to save carpenter labor in cutting the joints; and its lengths vary by 2-foot units on the theory that such length standards are more apt to hit the joists—though just why is not evident, since the usual joist spacing is 16 inches. In the new product long length becomes less important, because the matched end is as good as any of the rest of the floor; and as a matter of fact, unless a premium is paid to secure selection for uniform grain, the difference or "Strips" between adjoining pieces makes a much better appearance in the end-matched shorter flooring because it is interrupted or broken instead of extending nearly or quite across the room—just as the weavers of the old-fashioned rag carpet (which in the form of rugs is still popular) often relieved the monotony of solid through strips by "hit" or "miss" bands in which the contrasting colors were broken into shorter lengths.

In the new product also differences in length of 2 feet, or any other standard for that matter, become entirely unimportant, and different pieces may vary by one or two inches or even by fractions of inches and still go perfectly into the floor. This makes it possible at the factory to convert a No. 2 or No. 3 flooring into a clear grade of end-matched, merely by cutting out the knots and other defects; and nothing is wasted but the 2 inches or 4 inches of length containing the defect. Where such defects are cut out to raise the grade of the square-end product 2 feet must be thrown away in order to maintain standard 2-foot variations in the product. End-matched product, therefore, saves so much clear lumber from the waste pile that the cost of the end-working is considerably overbalanced, and in the price he pays the user of end-matched softwood flooring is participating in the saving from this closer utilization. It must be remembered that in softwood flooring, and especially southern pine, the dark heartwood is preferred; but this is the part of the log in which knots are to be found. End-matching makes the highest possible use of the clear material between these knots.

Another saving sometimes attempted with square-end material is even more practical with the new product, and that is in the use of a not entirely clear grade for the floors of bedrooms or in other parts of the house more secluded than the main living rooms. Small sound knots and other sound defects make as good a floor mechanically, but are considered less sightly and the effort is usually made to keep them out of the margins of the room, not covered by the rug, as far as possible. With the long square-end product this is somewhat difficult; but with the shorter lengths of the end-matched product it is perfectly practical to have all the margins of perfectly clear flooring with a less expensive floor under the rug.

End-matched softwood flooring and other end-matched products are bundled to the nearest foot, which means that a 5-foot bundle may contain pieces from 4 feet 7 inches to 5 feet 6 inches. The grading rules of the Southern Pine Association provide that on all end-matched product A grade is to have a minimum average length of 9 feet; B and better, 8 feet; B, 7 feet, and all common grades, 5 feet. The different manufacturers offer various assortments, as, for instance, 8-foot and longer with 15 per cent included of 2 to 7-foot; and besides the assortments of long lengths with a limit percentage of short, assortments of short lengths, 2 to 5 feet or 2 to 7 feet, may be purchased at very attractive prices and lay a surprisingly faultless and attractive surface.

Altogether, end-matching of softwoods is an idea the builder can talk to his clients with an assurance of everlasting satisfaction to them and of added profits and reputation for himself.



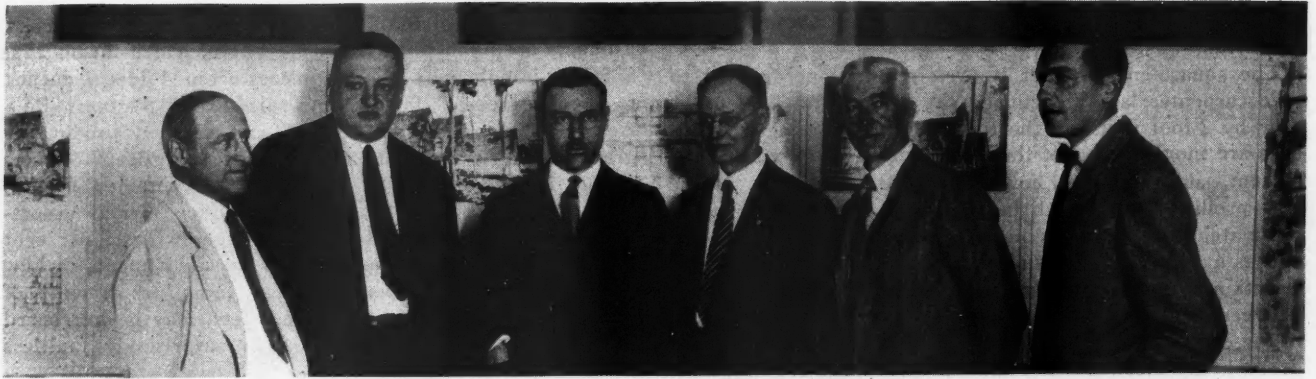
NATIONAL COMMITTEE ON
WOOD UTILIZATION
Department of Commerce
WASHINGTON, D. C.
FLOORING LAID WITH END
MATCHED SOUTHERN PINE

Each piece of lumber comprising this floor has been provided with tongues and grooves at both ends and edge—This end matching represents an important economy as lumber of any length specification may be used without waste.

In rooms where carpets or rugs are used an important economy may be effected by laying tight, knotted lumber under the carpet, reserving high grade lumber for the border where the flooring is visible.

Sample furnished by Jackson Lumber Co.,
Rockford, Illinois.

The Committee Recommends That Tight Knotted Lumber Can Be Well Used Under Carpets or in Room Centers Under Rugs.



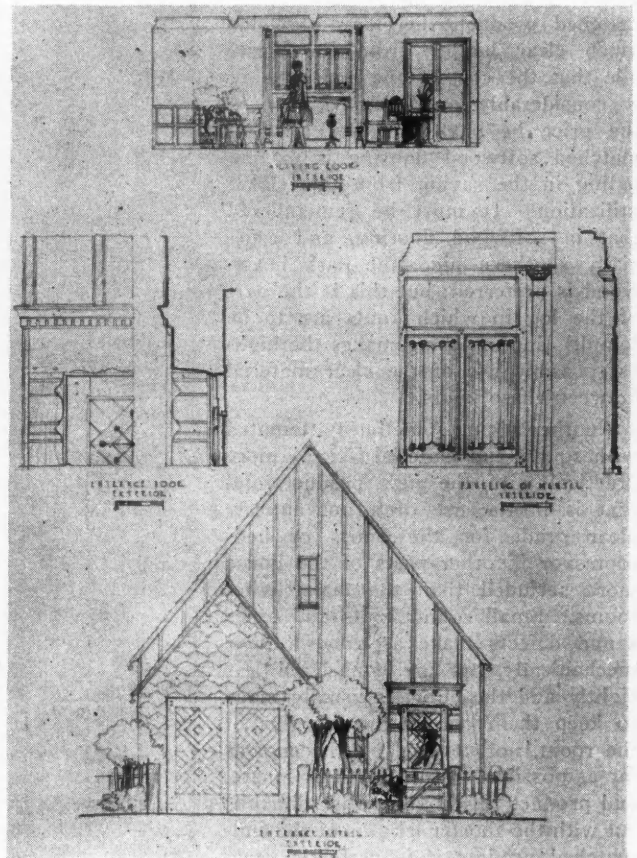
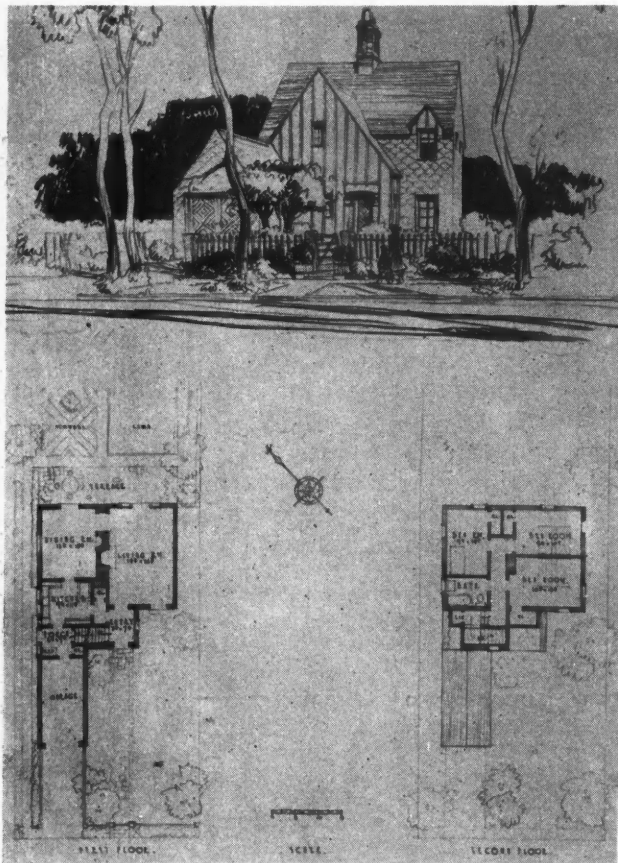
The Jury of Award in the Recent West Coast Woods Architectural Competition Included: Left to Right: W. R. B. Willcox, Director of the School of Architecture, University of Oregon, Eugene, Ore.; Henry C. Hahn, New York, N. Y.; Louis C. Jaeger, New York, N. Y.; Emory Stanford Hall, Chicago; David J. Myers, Seattle, Wash., Who Are Members of the Jury, and J. Lister Holmes, Seattle, Wash., Professional Advisor.

West Coast Woods Competition Prizes Are Awarded

IN the recent architectural competition, conducted by the West Coast Lumber Bureau and sponsored by the Washington State Chapter of the American Institute of Architects, the first prize, \$2,000 in cash, was awarded to Otho McCrackin of Hutchinson, Kansas, for the best design of a residence and garage built principally of wood. The second prize, \$500 in cash, was awarded to Angus McSweeney, of 250 Santa Paula Ave., San Francisco, California. Another design by Mr. McSweeney received honorable mention and an additional \$100 award.

Nine other designs which received honorable mention and awards of \$100 each were submitted by: John J. Landon, Los Angeles, California; H. Roy Kelley, Pasadena, California; Alfred Cookman Cass, New York, N. Y.; Lyle Swiger, Asheville, N. C.; Francis Keally, New York, N. Y.; Frank S. Carson, Ann Arbor, Michigan; Heth Wharton, Los Angeles, California; R. C. Bicknell, Paterson, N. J.; John Floyd K. Yewell and Walter W. Wefferling, New York, N. Y.

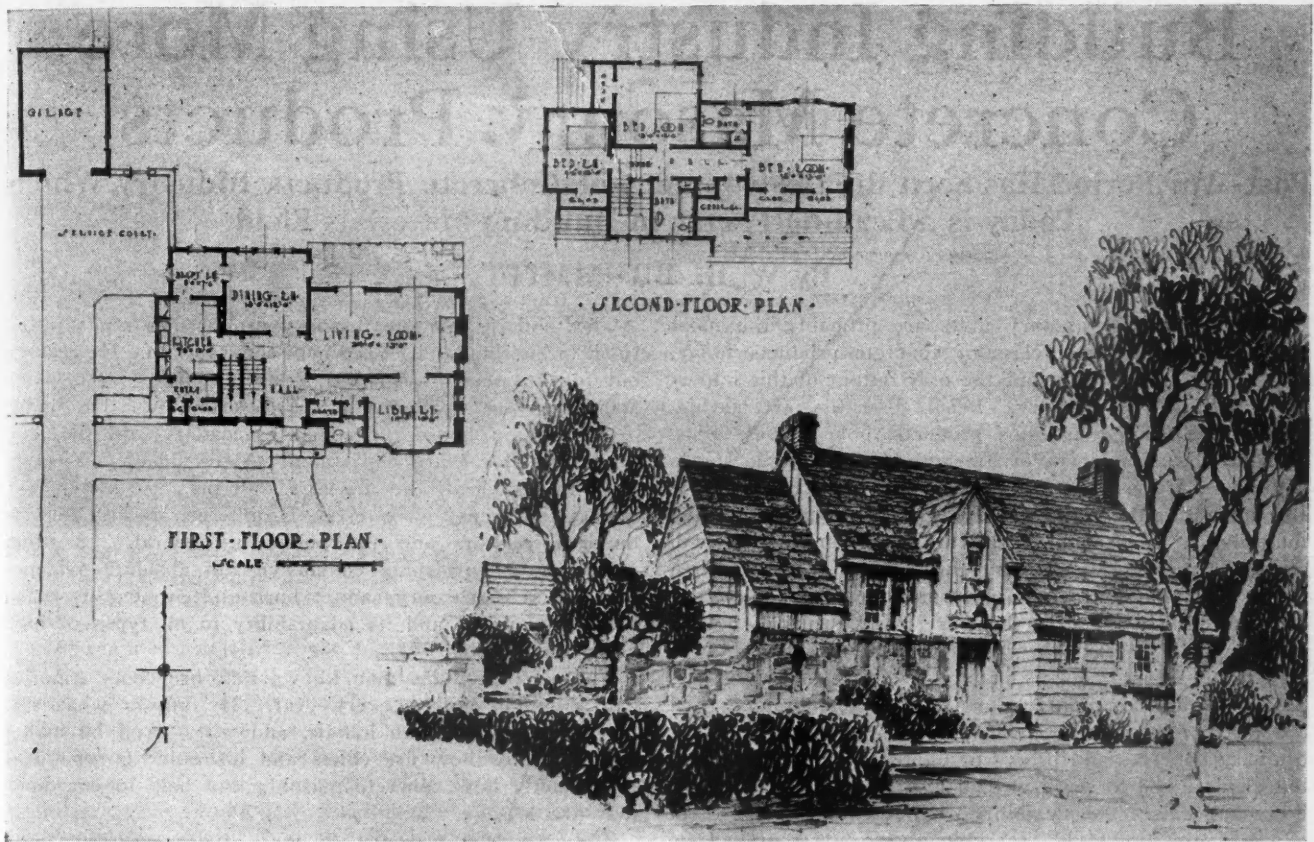
In all, there were 203 designs submitted by architects



This Design, Submitted by Angus McD. McSweeney, of San Francisco, California, Was Awarded the \$500 Second Prize in the West Coast Woods Architectural Competition, Which Closed on August 1, 1927.

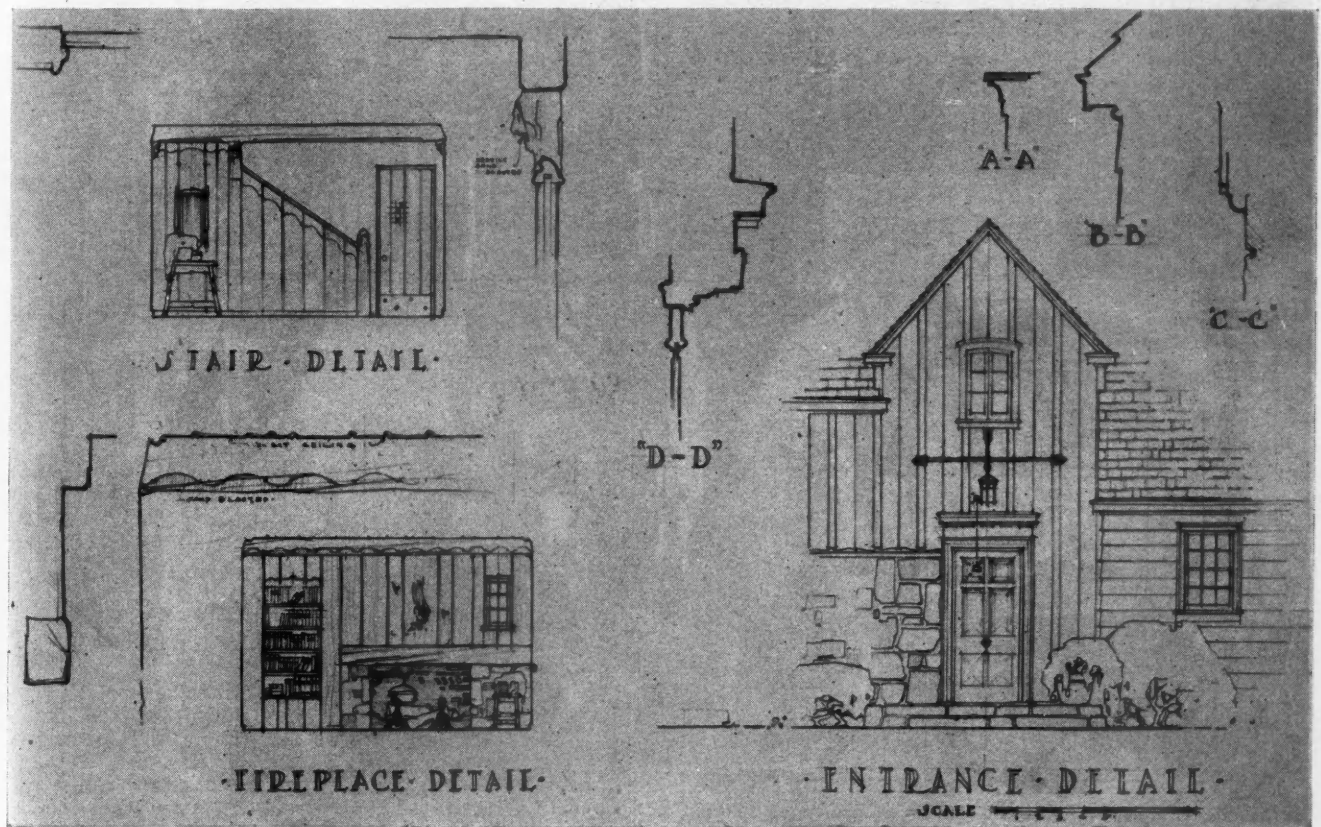
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\$2,
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and draughtsmen from all parts of the United States, Canada, England, France and Hawaii. According to the jury of architects which made the award the competition was

a decided success and "is worthy of emulation as a means to, and as a definite and strong encouragement of, better wood architecture."



Otho McCrackin, of Hutchinson, Kansas, Submitted the Design Reproduced on This Page and Was Awarded the \$2,000 First Prize, for the Best Design of a Residence and Garage Built Principally of Wood, in the West Coast Woods Architectural Competition. The lower sheet shows interior wood finish and the vertical siding.

Building Industry Using More Concrete Masonry Products

Post-War Period Has Seen Big Development of Concrete Products Industry Which Today is a Leading Factor in Building Materials Field

By W. B. BRUMMITT

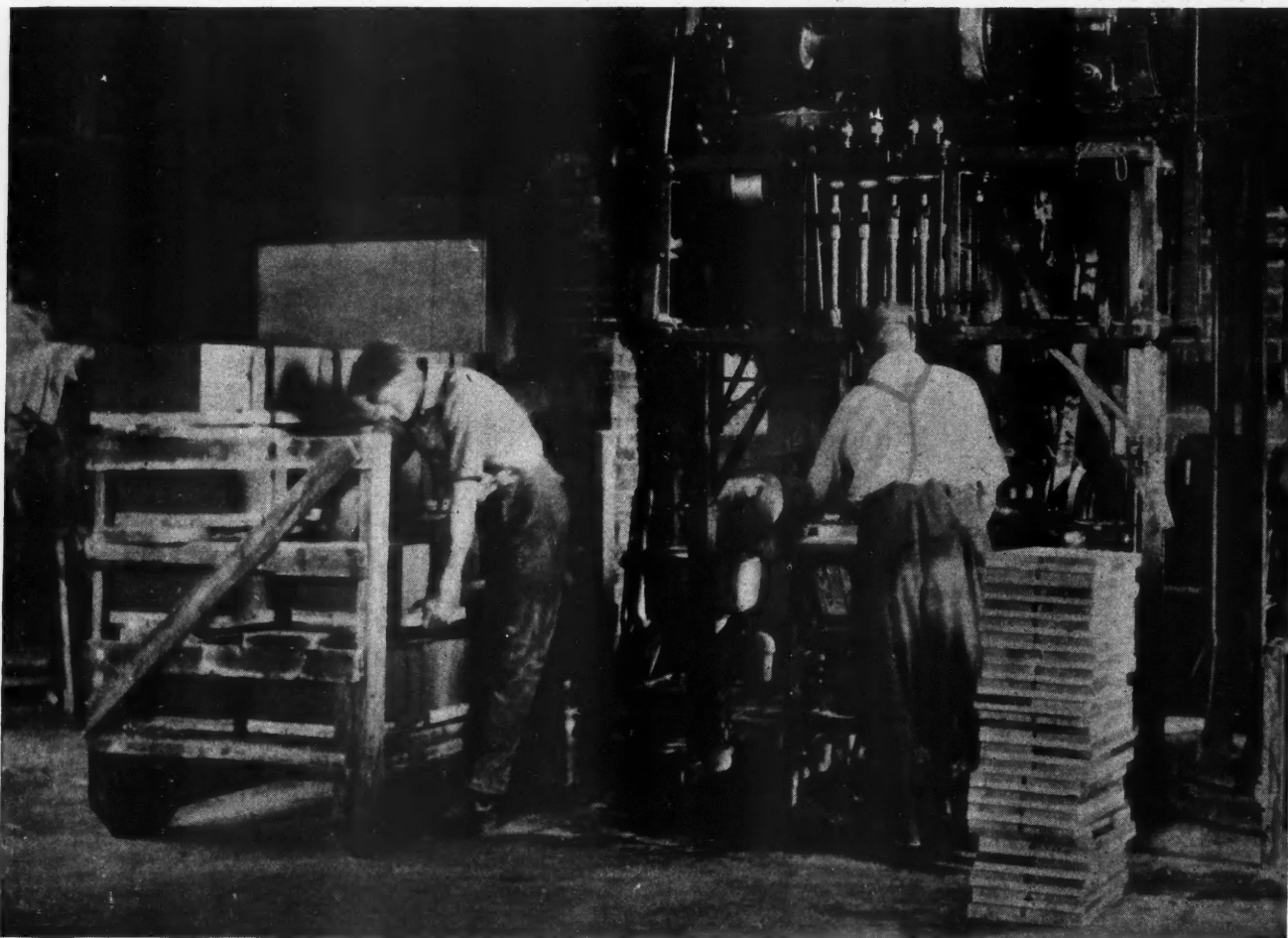
ALTHOUGH masonry units are probably the most important single class of concrete products today, they are by no means the only output of this important and growing industry. Brick, floor tile, art marble, roofing tile, cement-asbestos products, poles, pipes, piles, burial vaults, light posts, ornamental cast stone, silo staves—these and others are all actively produced by the industry. But no matter how the variety of concrete products may multiply, it is probable that the chief production will remain in the field of masonry units.

The solid building block of former days has practically disappeared. In its place there are many forms of hollow masonry units, most of them standardized to an 8 by 8 by 16 inch size, having approximately 40 per cent airspace. Smaller units, commonly known as concrete building tile, are also growing in popularity, some of them made of ordinary concrete and others of lighter weight aggregates, but all designed to serve well in fitting around doors, windows and sills. The flexibility of these units makes them adaptable to any style of architecture so that it can be said that architectural freedom is not limited by the unit but is enhanced by it.

The modern concrete masonry producer is not satisfied to sit in his shop and let business come to him. He reaches out for business. He subjects his output to tests which startle a once apathetic public to attention. He builds demonstration houses of concrete masonry and tile, and invites the local fire department to test it by subjecting it to intense heat, the fire-hose high-pressure water test, impact and other severe tests. He interests insurance men, builders, realtors and the public in general. In other words, he is furnishing conclusive and absolute evidence that concrete masonry cannot burn and proving its many other advantages and its adaptability to all types of high class construction.

The alert products man knows that fire costs America half a billion dollars every year. He knows what sort of fires are hardest to handle, and why. And he makes it a point to show fire chiefs and insurance underwriters just exactly how concrete masonry can help to cut down that fire loss.

The concrete masonry business today represents an invested capital of \$140,000,000. Adequate capital, real business acumen and modern production methods are replacing



From the Casting Machine, the Green Units of Concrete Masonry Are Carried in Racks by Lift Trucks or Industrial Railways to the Curing Rooms. In some plants, conveyor belts are used.

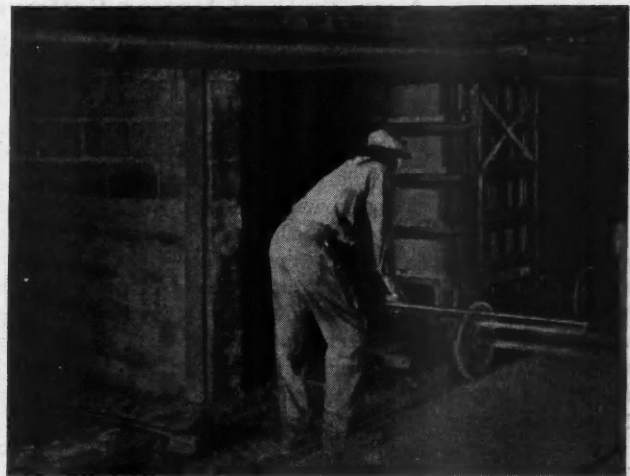


A Self-Contained Concrete Products Factory. A gravel pit, at the right, supplies much of the raw material needed, which is carried directly into the production system, where it is cleaned and scientifically mixed with portland cement to produce high-strength masonry units, stocks of which are seen in the left and right foreground.

the old regime of small resources, inadequate business skill and haphazard methods. Last year the output of the masonry factories approximately equalled in value the capital invested in them. It is only natural that other building material industries have met this growth with keener competition; but competition, in itself, has supplied an incentive for the production of better merchandise by more efficient methods and with a carefully developed selling plan.

Under these circumstances it is generally conceded that the future of the concrete products industry is in the hands of its merchandisers. Advertising, selling and standardized quality-quantity production are to receive constant emphasis, according to the plans of the Concrete Products Association.

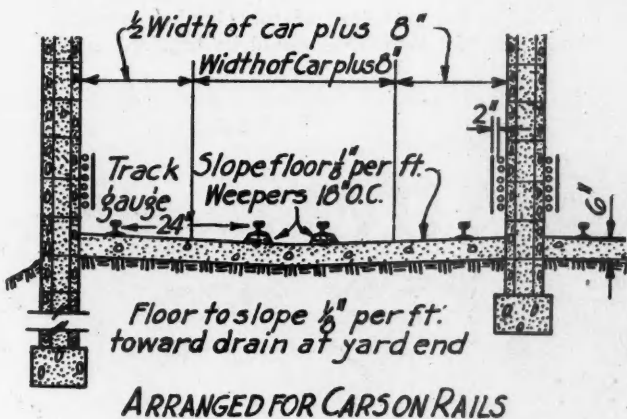
One of the greatest encouragements the industry has received was the recognition given hollow concrete masonry as one of the materials for which regulations are provided in the masonry wall report issued by the Building Code Committee of the U. S. Department of Commerce. The Building Officials' Conference has likewise given concrete masonry official recognition and approval in the proposed regulations, printed in the proceedings of the Twelfth Annual Meeting. This, coupled with the adoption of standard tests by the American Concrete Institute and the Underwriters' Laboratories, has given the business as a whole a tremendous impetus. Building codes of many cities, in defining the physical requirements and uses of concrete masonry, are accomplishing a great deal toward



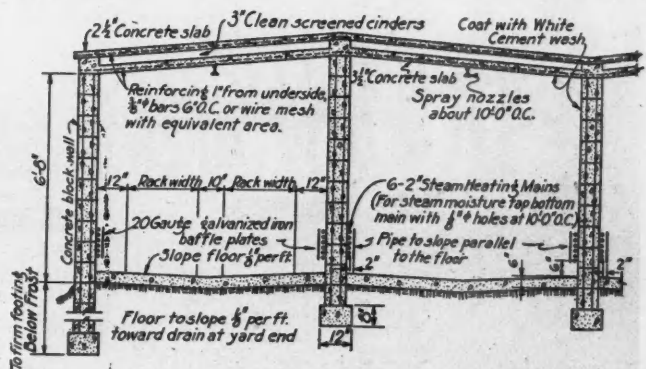
A Rack Full of Green Units Being Moved Into a Curing Chamber Where a Saturated Atmosphere Is Maintained to Facilitate the Curing Process.

standardizing the industry and gaining the confidence of the building public.

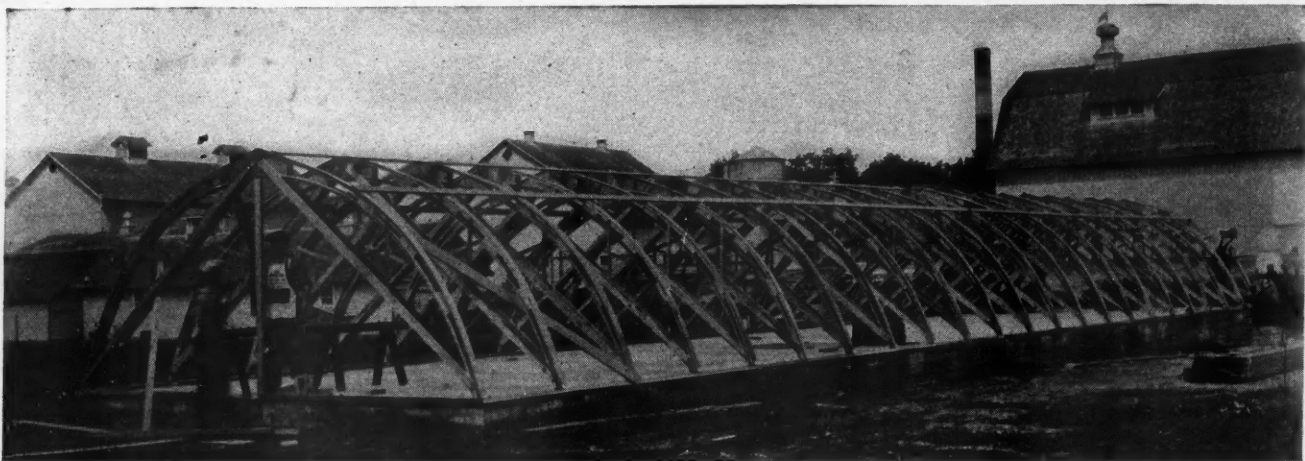
The rapid growth in the popularity of concrete masonry units, during the past four or five years, is a development that ranks as a real achievement in the building materials field. The business has prospered—but continued production of a dependable, standard, high-quality product, coupled with aggressive sales methods, points to far greater prosperity ahead.



The Steam Curing Room Accounts, in Large Measure, for the High Degree of Strength of Modern Concrete Block and Tile. This drawing shows details of curing room arranged for cars on rails.



Curing Room of Concrete Masonry Construction Designed for Lift-Trucks. When products are cured by live-steam method, spray nozzles are eliminated and bottom steam pipe tapped to provide moisture.



Igloo Type Poultry House with Roof Trusses in Place.

Cuts Cost of Poultry Housing

New Type of House Follows the Style of Eskimo "Igloo"
and Might Be Called the "Eggloo"

By A. B. DANN

TAKING as a model the home of the Eskimo, called the igloo, which is designed so as to provide a maximum of floor space with a minimum amount of cubic space inside to be heated, there has been brought out a new type of poultry house. This house has not been named by the designer, but it might be called the "eggloo," as it has been demonstrated that this house will accommodate more hens in a given amount of floor space, saves at least 20 per cent in construction cost and is more easily heated than the other types of poultry houses that have been developed in recent years.

The idea of this building was conceived five years ago by the engineers of the James Mfg. Co. and the house shown in the illustration, erected a few weeks ago on the Jefferson County Farm, near Fort Atkinson, Wis., is sixth of its type to be built. The first was put up three years ago on the farm of a New Jersey poultryman. It was so successful that the same man built a second one the following year, and still another one last year. The three houses accommodate 4,500 hens.

The house built on the Jefferson County Farm, which is famous for its show herd of Holsteins, is 20 feet wide and 88 feet long, and is comprised of four units, each 20 by 20, with the extra 8 feet for a feed and heater room. The foundation of the building is a concrete floor, insulated with hollow tile.

The superstructure is of Gothic rafters, four feet on centers. These rafters are covered with matched roof boards on the outside and these are covered with asphalt roofing. The inside of the rafters is covered with galvanized sheet iron of an unusual design, as each sheet has a "fin." These fins are used so that the insulating material—chopped hay or straw, or sawdust—will not pack. In constructing the house, the top board on the outside is left off, and as the sheet metal is placed inside, the space between the roof boards and metal is filled with the insulating material. When the last sheet of metal has been put on the balance of the space is filled through the roof opening and the roof board put on.

The trusses or rafters are of a peculiar and patented construction. They are built up so that they gradually become wider as they reach the ridge, permitting a greater amount of insulation to be used at the top than at the sides.

Inside the house is slightly more than 7 feet to the ridge, the walls curving from that height to the sills. The distance over the roof from sill to sill is only 27½ feet, as against 35½ feet over a shed-roof type house of the same dimensions. It will readily be seen that this type of construction effects a considerable saving in materials; in fact, 800 board feet less of roof lumber was used in this house, 88 feet long, that would be required in a shed-



The Poultry House on the Jefferson County (Wis.) Farm, Designed by the James Mfg. Co. More than two tons of weight on the roof trusses are represented by the men standing.

roof type house of the same size.

The advantages of this house may be summarized as follows:

It represents a saving of about 20 per cent in wall and roof structure. On this house—shown in the illustrations—which is 88 feet long the saving was about 800 board feet of roof lumber and about 800 board feet of whatever material is used for ceiling inside.

It has about 20 per cent less radiation surface, which is valuable in saving of heat loss because of the limited amount of heat available in a hen house.

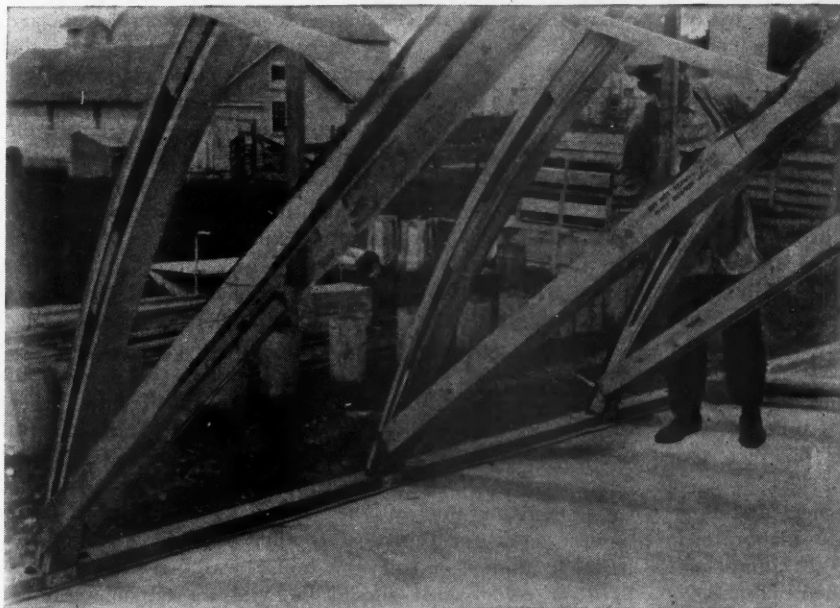
The trusses or arches correspond to studding and rafters and are placed 4 feet on centers, representing a saving of one-third to one-half in framing materials.

No framing material is necessary for the windows, which are of metal, another marked saving.

The building requires no paint, with



Close-Up View of Roof Trusses.



The Roof Trusses Are Nailed to the Sill, Which Is Bolted to the Foundation.

With the use of a metal ceiling and the wall packed with shavings, sawdust, ground cork or chopped hay or straw, it offers wall construction that is superior to any farm building previously designed, both from the standpoint of holding heat within the house and economy of construction.

The sheet metal interior offers the greatest possible protection from the standpoints of sanitation, lice, mites and rats.

The house at the Jefferson County Farm is to be completely equipped with table dropping boards, with folding roosts on top of them; feed hoppers and automatic waterers, metal nests and an overhead carrier. It also is to be heated by hot water.

Builders can do a nice business with poultrymen, at the same time rendering a real service if they will recommend and use this improved type poultry house.

the exception of the door casings and the vertical strips at the ends.

There are no plates to buy or frame in. Consequently there are no cracks or crevices to fill in at the ceiling line, which eliminates any possible chance for drafts in the house.

This house is admirably adapted to the use of the litter carrier, and to a feed and egg carrier, thus offering a great labor-saving feature.

Windows are placed in such a position that during the winter months they may be opened to permit the entrance of the sun's rays directly on the birds underneath, thus making the greatest use of sunlight.

No special carpenter labor is required to erect the house, for it can be assembled easily and quickly, without the necessity for framing except to cut five studs for each end.



Showing How the Sheet Metal Is Put on.



DETAILS OF HOME BUILDING

Georgian Architecture in the Northern Colonies

By V. L. SHERMAN,
Lewis Institute of Technology

THE fine points in horse-trading are many, with profits and losses settled on such seeming trifles that we smile with David Harum; yet many of us scarcely acknowledge the ordinary points in architecture to our own grief later. That, of course, is not a laughing matter. The characteristics of a great grand-sire in Joe Patchen are so valued and far more easily traced than the characteristics of many modern American homes.

Before the Revolutionary War, when trade was brisk and profits large for the Colonials, and even after the War of 1812, there was a growth in American architecture that has never been equaled. The whole growth is generally termed Colonial. But that term is hardly correct because of the differences along the coast. The more northern was very much English, contemporary with the old country Georgian, but I will venture to say superior for the smaller type of building. There are grounds for that assertion in their greater wealth and vigor. The Pennsylvanians and New Jersey folks had a different Colonial and the Southern Colonies a quite distinct type which will come later.

The Georgian is the combination of classical and domestic. The type may run from simple to elaborate in varying forms but it is so separate from the comfortable domestic type that it is easily distinguished. Traces of it appear, however, in the very simplest structures, adding beauty when well done and horrifying when poorly done. In Fig. 9 a Georgian cornice and doorway alone are added to a gabled frame with much credit. That is one way. Up through Wisconsin and Minnesota where the very early western trend came by way of the lakes you can find small farm homes of perfect Georgian type. Fluted columns at the corners, scrolls, cornices, temple roofs, and all in perfect order. These usually date 70 years back and are true New England Georgian. The old quarter pitch roof with the heavy returns and the porch columns are migratory marks.

Fig. 1 shows a building of the Stuart time. Notice the general form of the roof and columns. Compare this to the later Georgian in Fig. 3, a Colonial Georgian, and to Fig. 7. Then there is the decked roof shown in Fig. 5. This home in Cambridge, Mass., is a fine example of the Charles River district. In Fig. 2 the form is very different but just as marked. This type is seldom used now-a-days except in tall buildings, but it is just as logical in many ways as an off-shoot of the attempts at classical. It is rather expensive construction considering cubage.

The tendency to simplify has diminished the use of rails and delicate cornice work. In this there is sound sense.

A roof is a roof, and the old New England flat railed roof for two and three storied home is a relic. That a roof is unsightly because it does not entirely fit the classical was considered nonsense a good many years ago. So in Figs. 4, 6, and 8 there are shown hip roofs that fit as well with Georgian as any with the elaborate rails or dormers. They are indeed closer to the Italian.

Fig. 6 is a place in Oxford, probably 60 or 70 years old. The entrance is wide and formal with stone steps mounting a terrace, a wide door and a deep hall that leads to a winding stair at the rear. The lighting of the hall is increased by a large rear-door and stair windows. The stone walls are fairly plain but the whole is well proportioned and symmetrical. With the garden surrounding it the house is probably more nearly Italian than its builders intended.

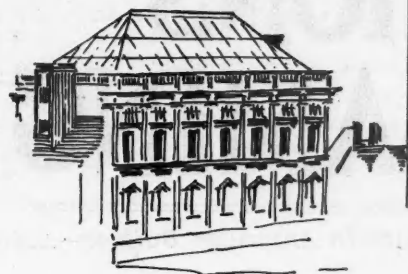
In Fig. 4 the heavy hip roof of the American type; the formal entrance and the evenly grouped windows show quite a different picture from Fig. 8. In the latter there is more of the Colonial. The frame house is lighter, the windows are more nearly to type and the porch is much later in form. Of the two the one in Fig. 8 shows more the American side of the Georgian. But one common modern fault for this type is very plain in Fig. 8. That is the chimney outside the house wall. If the house is light in color as it should be, and an outside chimney is necessary, the chimney should be very light in color. The Colonial chimney and the English chimney on the Georgian house are plain enough, but usually balanced in effect (notice Figs. 2 and 7 specially), and within the house walls.

It is noticeable in Figs. 1, 3, 5 and 7 that the columns serve as vertical lines. This construction spaces the windows. The spaces were about right for the large checkered windows with decorated heads. When no columns are used the spacing was about the same. But of late years the grouped windows have sometimes been used. This grouping breaks up the wall and the simplicity is lost. The use of shutters on the checkered double-hung windows is in no way a detraction.

Georgian doorways or entrances, or as some term them, stoops, are of great variety. Those shown in the sketches are only a very few of the almost numberless designs. Portfolios by the dozens would scarcely cover them. The general run in smaller homes was flat decked or gabled and from elaborate pillars to mere board imitations. If possible a semi-circular or elliptical fan light was placed for a transom light. These are surely worth careful study.

The New England Georgian roofs include the gambrel. This is not the Dutch nor is it used as a distinct roof.

FIG. 1. OLD BANQUETING HALL IN WHITEHALL, LONDON. NOTICE FIGS. 3 & 7.



ST. MARTIN-IN-THE-FIELDS.



FIG. 3. AMERICAN OF COLONIAL TYPE.

FIG. 2. PARK LANE, LONDON

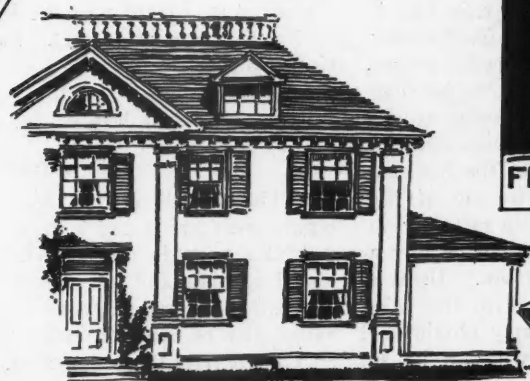


FIG. 5. LONGFELLOW HOME.



FIG. 4. WIDE EAVES & GROUP WINDOWS

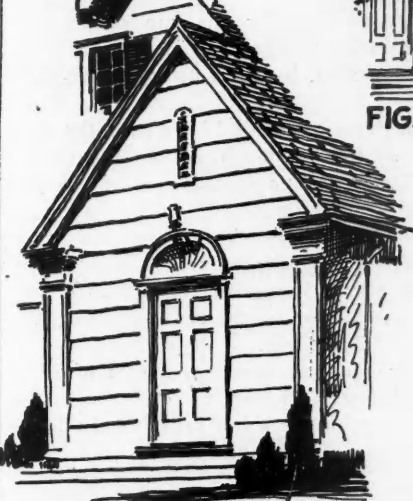


FIG. 9. ADAPTION IN FRAME.



GEORGIAN GAMBRELS.

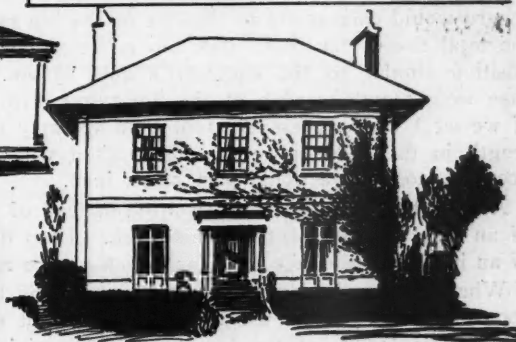


FIG. 6. AN OLD PLACE IN OXFORD.



FIG. 10



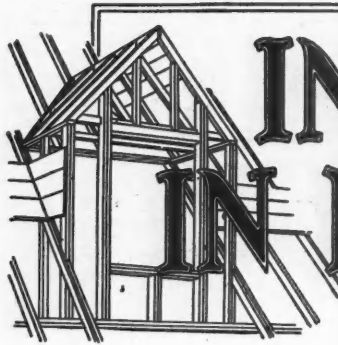
FIG. 7. SYMMETRY AND A SPLIT CHIMNEY.



FIG. 8. A GEORGIAN IN FRAME.

U. L. Sherman 9-1-29.

The Northern, Colonial American Architecture was Very Much English, Contemporary with the Old Country Georgian but Richer and More Vigorous



INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder—Editor

A Study of the Hip Rafter

IN our last discussion we explained the length per foot run method of finding the length of a hip rafter. At this time the square root method will be taken up. To have a clear picture in our minds as to the position of the hip rafter we have used the example of a box, in Fig. 1. One square is shown flat in the bottom of the box. Another square is shown standing upright with the body of the square diagonally across the bottom of the box. The edge of the square thus gives the length from one corner to the other corner of the box. This distance when compared to the hip rafter would correspond to the run of the hip.

The distance from "B" to "C" on the tongue of the square would correspond to the rise of the hip rafter or to the total rise of the roof. The hip rafter would occupy a position similar to the carpenter's rule shown. In this case we scale the length of the hip rafter with the rule. If we let 1 inch represent 1 foot then we may obtain the length in this way, however, this method will not be so accurate, to the fractional part of an inch.

A rule that is divided into twelfths instead of sixteenths of an inch is convenient for this work. Then one-twelfth of an inch on the rule counts for 1 inch on the rafter.

When finding the length of the hip rafter by the square root method we make use of the square root method of finding the length of the hypotenuse of a right triangle. This principle is illustrated in Fig. 2. The rule is stated thus: "The length of the hypotenuse of a right triangle is equal to the square root of the sum of the squares of the other two sides."

Two operations are necessary in order to find the length of the hip rafter. First we must find the length of the run of the hip. This operation is illustrated in Fig. 3.

Having found the run of the hip, this is used as the base of another right triangle in order to find the length of the hip. Fig. 4 illustrates the second step in finding the length of the hip. Here the run is the base of the triangle and the rise is the other side of the triangle. The length of the hip is the hypotenuse of the right triangle. The length, therefore, is the square root of the sum of the squares of the other two sides of the triangle. The length is the square root of the sum of the base squared, plus the rise squared.

Fig. 5 shows another way of finding the length of the hip by square root. Here the length of the common rafter forms one side of a right triangle. By this method it is first necessary to find the length of the common rafter. This may also be done by square root. The run of the common rafter and the rise form two sides of a right triangle, the length of the common rafter forming the hypotenuse.

Problems

1. Find by square root the length of the hypotenuse of a right triangle whose sides are 6 and 9 inches respectively.

2. Describe the three right triangles shown in Fig. 4.

3. A building 34 feet wide has a rise of 9 feet 6 inches for the roof. Find by square root the length of the hip rafter.

4. Find by square root the length of a hip rafter for a roof with a run of 16 feet. For the common rafter and a rise of 8 feet.

5. What is meant by the length per foot run of a hip rafter? (See last lesson.)

Answers

1. The length of the hypotenuse of a right triangle whose sides are 6 and 9 inches is 10.8 inches.

2. One triangle is described by the run of common rafter, length of plate and run of hip.

Another triangle is described by the run of common rafter, rise of common rafter and length of common rafter.

A third triangle is described by the run of hip, rise and length of hip.

3. The rafters would have a run of 17 feet, for the common rafter. The run of the hip would be the square root of 17 squared plus 17 squared, or square root of 289 plus 289, equals 24.04 feet.

The length of the hip would be the square root of the run of hip squared plus the rise squared, which is the square root of 24.04 squared plus 9.5 squared, equals 25.85 feet.

4. The run of the hip is the square root of 16 squared plus 16 squared, equals 22.627 feet.

The length of hip is equal to the square root of 22,627 squared plus 8 squared, equals 24 feet.

5. The length per foot run for a hip rafter is the length of the hip for one foot run of common rafter.



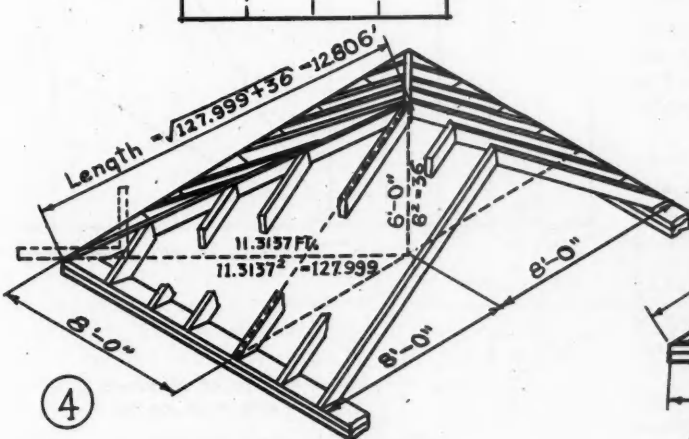
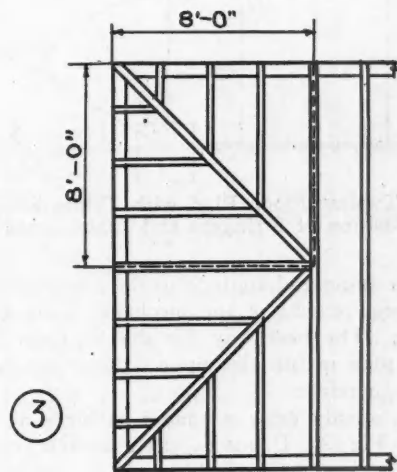
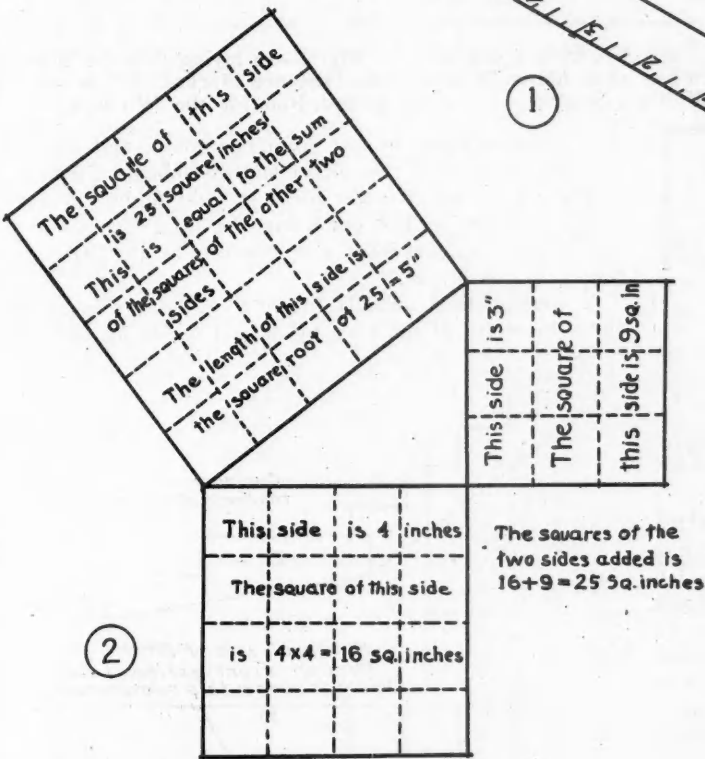
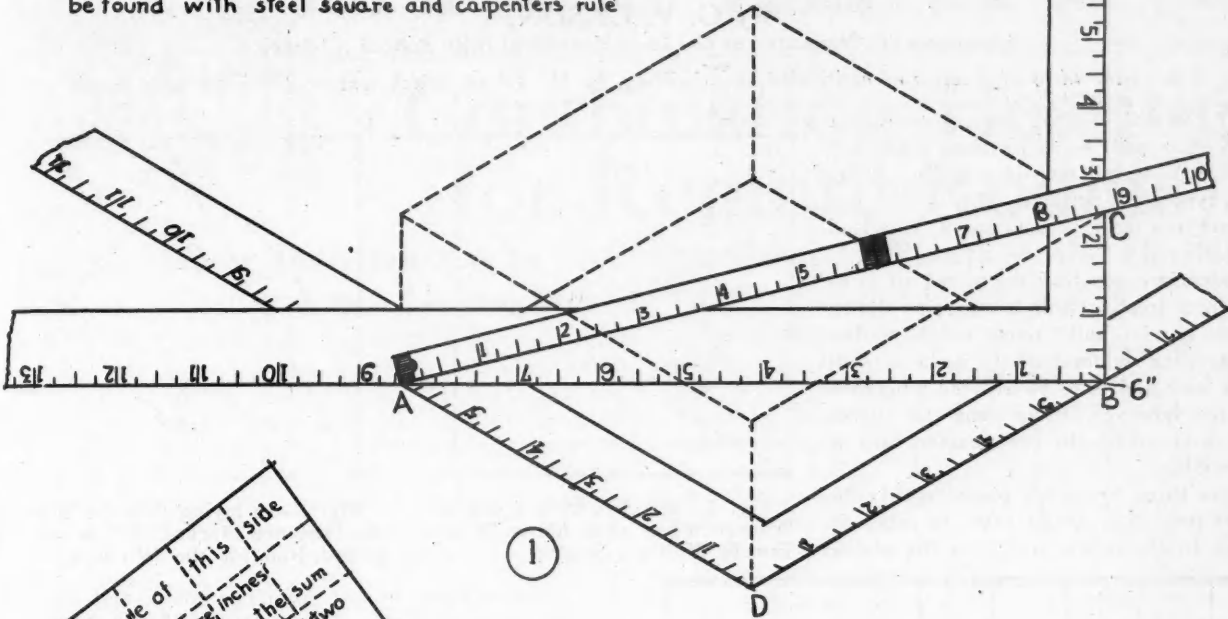
Tall Buildings and Traffic

"FROM the twenty-eighth story of the Equitable Building to the tenth floor of the Bankers' Trust is a quick jump because the travel is mostly vertical," said Harvey Wiley Corbett, the well-known New York architect, speaking as an advocate of the skyscraper at the civic development session of the annual meeting of the Chamber of Commerce of the United States. Flatten out the financial district to eight or ten stories and those offices might be 10 or 12 blocks apart, and the traffic on the surface would be just that much more congested.

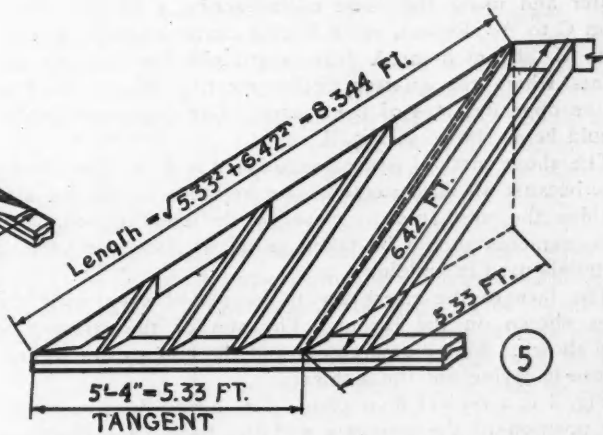
"There is as much vertical traffic as horizontal in New York's financial district during business hours. Maybe more. In fact it would not be difficult to prove by means of a careful survey that in this section of the city there is less traffic congestion, both pedestrian and vehicular, during the important hours than in sections where the average building height is less than one-third what it is downtown."

The opposite side of the discussion was taken by Major Henry Curran, counsel of the New York City Club.

This shows how the length of diagonals may be found with steel square and carpenter's rule



The Run of the Hip Rafter is equal to $\sqrt{8^2 + 8^2} = \sqrt{128} = 11.3137$



The length of the Hip Rafter may also be found by taking the square root of (Tangent squared + Length of common Rafter squared).

Diagrams Illustrating the Square Root Method of Finding the Length of Hip Rafters.

Stair Building

How to Lay Out Stair Winders

By C. V. OLSON,

Instructor in Carpentry at the Lane Technical High School, Chicago

This is the third of a series of articles on stair building, by Mr. Olson, which will be published each month.

WINDERS is the term given for a stair built so as to make a quarter, half or full turn in a flight. Stairs of this type are a familiar sight, as they can be found in a large percentage of American homes.

Winders are usually constructed so as to allow three treads within a square as shown in Fig. 1. To build more treads within such a space would tend to make a dangerous stair and is to be avoided whenever possible; however, there may be places where four treads to the quarter turn is permissible.

Where three treads are placed within the quarter turn each would have its edges 30 degrees to the others and it is the ability

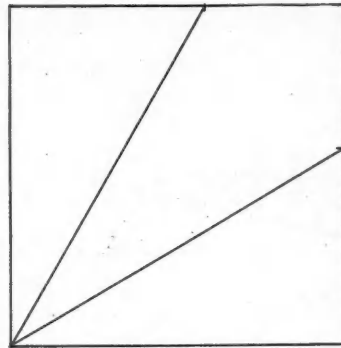


Fig. 1—Winders Are Usually Constructed so as to Allow Three Treads Within a Square.

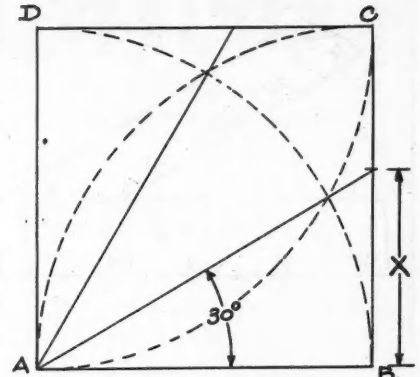


Fig. 2—In laying out the Winders the Distance Marked "X" Is the Required Run for the Winders.

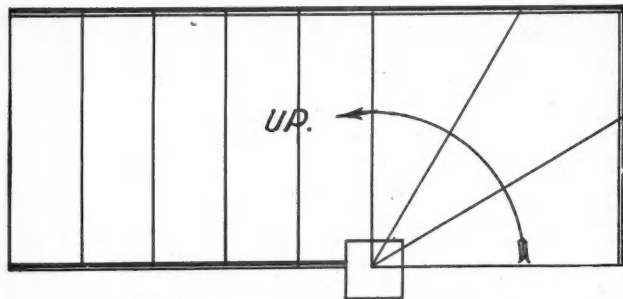


Fig. 3—A Typical Floor Plan with Triple Lines Representing the Position of Stringers and Light Lines the Face of Risers.

to lay out this angle and apply it to the construction which is the main requirement of the mechanic when building a winding stair. The best way for the beginner is to lay out the floor plan in full size upon a floor and take exact measurement therefrom.

To do this, simply draw a square as large as the stair is wide as in Fig. 2. Using (a) as a center and A-O as a radius scribe a quarter circle as D-B. With D as a center and using the same radius scribe a quarter circle from C to A. Repeat, using B as a center and scribe from A to C. From point A draw a straight line through the points where the quarter circles meet, continue the line to the opposite sides of the square. The completed layout should be as shown in Fig. 2.

The above method is used very often and has the advantage because all measurements can be taken in full size and enables the mechanic to visualize the construction. All measurements should be taken so as to allow for various materials used in building.

The face of the risers are to be placed even with the lines shown on the layout. The run of the stringer is also shown. This measurement and the rise are the figures to use in laying out the winders.

Fig. 3 is a typical floor plan. The heavy lines represent the position of the stringers and the light lines represent the face of the risers. Note that they extend to the center of the newel, shown by square. By fitting the risers at a point where these lines reach the square a better nailing surface is obtained and hence a stronger job.

In Fig. 4 a floor plan of a winder with the location of the stringers is shown. The stringers A and B, due to

their shape, cannot be cut from one plank and therefore must be made up of two pieces and assembled. Stringer A is built up as any stringer for a straight flight. B and C must, however, be laid out using the same figure for rise as for the straight flight and the run of the stringer is found by the layout.

A mathematical formula for finding the run is to multiply the width of the stair by 37 and divide by 64.

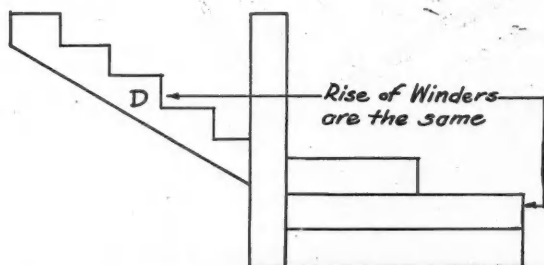
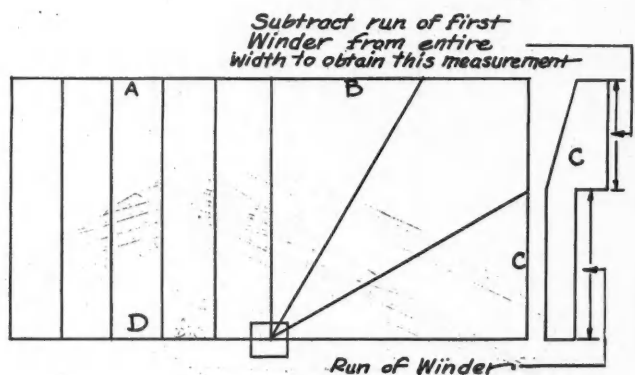
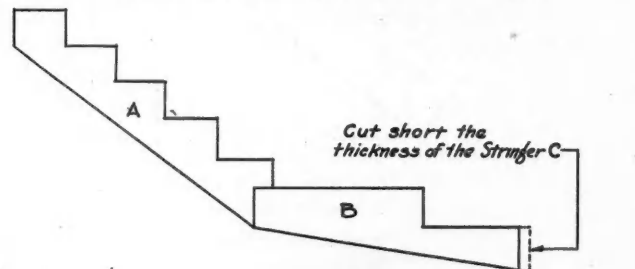


Fig. 4—A Floor Plan of a Winder with the Location of the Stringers Shown.

FURNACE HEATING

Combination Heating for Remote Rooms

How Hot-Water Radiation May be Used with Warm-Air Plants to Add Flexibility

This Department by R. C. Nason, Heating Expert, appears every month in American Builder

TROUBLESOME points in residence heating often are ells, tees, dens, sun parlors and other rooms remote from the central plant. In this class, too, might be added rooms which must be served by warm air leaders which, because of structural interference, would have sharp and numerous bends in the pipe line. All such rooms may be successfully warmed by hot-water radiators fed by pipe coils or hollow castings placed in the combustion chamber of the heater or partially buried in the fire itself. Such plants are known as combination systems.

In selecting a plant for this service the heater must be large enough to supply warm air to the principal rooms, that is, living, dining rooms and halls, also have sufficient grate area to heat the water within the heating elements to 180 degrees Fahrenheit. Water is supplied to the radiation piping and heating element and partially fills an expansion tank, generally placed in the attic.

Considerable ingenuity has been evidenced in designing the heating elements. A popular design is shown in Fig. 1, and others in Fig. 2. That in Fig. 1, known as the disc type, is installed in the furnace, edge towards the furnace front, and in contact with the fire. From Fig. 3 it will be noted that sometimes a base casting only is used. More often, however, one or two ring sections, one above the other, are added, both above and connected to the base.

In considering the heating values of the different styles of elements there must be taken into consideration, as well as their size, their position in the furnace and their size and position with relation to the particular heater in which they are used. For this reason installers who choose the combination layout will be wise if they take the manufacturers into their confidence and offer a complete set of plans. The data given in Figs. 2 and 3, therefore, cover only average conditions and may be used for making preliminary estimates.

In figuring the size and style of the heating element and the size of plant it will be necessary to know not only the number of square feet of radiation to be included, but the outside area of all uncovered pipes, as a vast amount of heat is radiated from the piping unless carefully covered with asbestos, air-cell or some other kind of approved insulation.

As warm air furnaces are usually rated in number of square inches of leader area to be supplied with heat, the method of determining the total heating requirement is found as follows:

First, total the areas of the warm air leaders in inches.

Second, find the heat loss in rooms

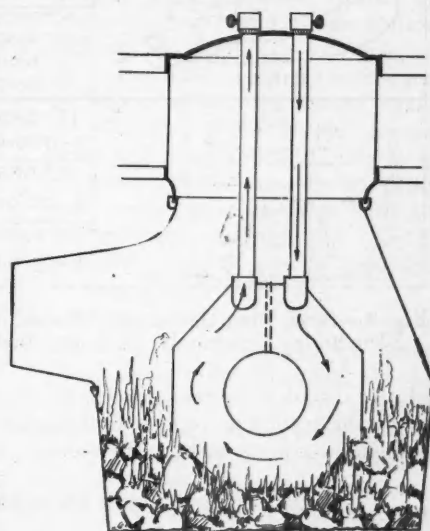


Fig. 1.—Side View of Disc Type Heat Elements for Combination Heating System.





ELEMENT DESIGN	DIAMETER INCHES	CAPACITY SQ. FEET RADIATION
 DISC	12	150
	14	200
	16	275
	18	350
 STAR	15	75
	18	100
	24	200
	30	300
 MALTESE	15	75
	18	100
	21	150
	24	200
 HORSESHOE	27	250
	30	300
	24	100 to 125
	28	125 to 150
	32	150 to 200

Fig. 2.—Types and Capacities of Various Heating Elements Used in Hot Water and Warm Air Combination Systems.

served by radiation in B.t.u. by any of the numerous approved rules and divide by 150 (the number of heat units given off by one square foot of radiation). The result is the number of square feet of radiation required.

Third, find the equivalent in radiation of the uncovered pipes from Fig. 4.

Fourth, add second and third.

Fifth, taking one square foot of radiation as equal to 1.25 square inches of heat leader find the number of square inches of leader equal to radiation and uncovered piping.

Sixth, add the total of warm air leaders and radiation in terms of square inches of leader. The sum represents the capacity of the heater necessary to take care of both warm air and radiation. The size of the heating element may be selected from Figs. 2 and 3.

In locating the plant the prime consideration is to place it so that the warm air leaders to the principal rooms are as short as possible, for it must be constantly borne in mind that the hot water radiation is only supplementary to the warm air part

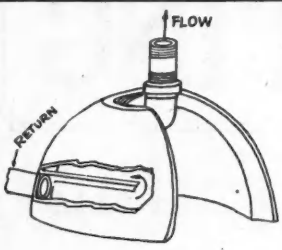
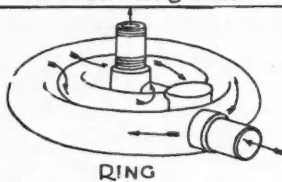
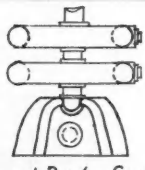
BASE, RING and COMBINED DESIGN	Combinations	DIAMETER INCHES	CAPACITY SQ. FEET RADIATION
 <p>Base Section when Used Without Ring Section</p>	BASE ONLY	14	125
		17	200
		20	275
		23	365
	2 RINGS - NO BASE	12	75
	2 RINGS - NO BASE	14	140
 <p>RING</p>	1-12" and 1-14"	14	105
	1-14" and 1-17"	17	170
	1-17" and 1-20"	20	285
	12" BASE 12" RING	12	80
	14" BASE 14" RING	14	200
 <p>Base and Rings Combined</p>	14" BASE 2-14" RINGS	14	275
	17" BASE 17" RINGS	17	300
	17" BASE 2-17" RINGS	17	400
	20" BASE 2-20" RINGS	20	525
	23" BASE 2-23" RINGS	23	700

Fig. 3.—Base, Ring Casting and Combined Units of Heating Element as Commonly Used in Combination Heating.

of the complete system and its functions are primarily to make the system more flexible besides heating the rooms of the building likely to be troublesome.

Balancing System Demands Caution

Many installers fight shy of combinations because of unfavorable experience at some time or other. Such sad experiences usually come about from one of two causes: first, attempting to place too much work on the hot water end of the system; second, incorrect proportioning of heating element, pipe sizes or radiators; to which might be added incorrect placing of radiation.

The direct radiation division of a combination system is not intended to take care of more than 20, or at the most 25 per cent, of the building. In an 8-room residence, therefore, this means two rooms may be heated with hot water

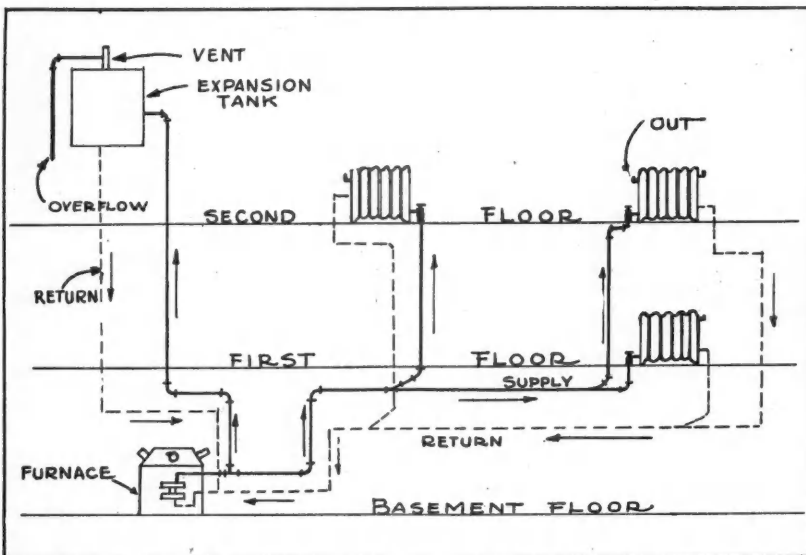


Fig. 5.—Suggested Method of Connecting Piping in Up-Feed, Two-Pipe Combination Heating System.

Pipe Sizes, Diameter in Inches	Surface Area in Square Feet per Foot Length
3/4	0.275
1	0.346
1 1/4	0.434
1 1/2	0.494
2	0.622
2 1/2	0.753
3	0.916

Fig. 4.—Square Feet of Outside Surface Per Foot Length for Various Sizes of Pipes.

and in smaller buildings one room. It is rarely that three rooms may be included, although this may be done if care is exercised.

Instances have been noted by the author where a larger number of rooms are warmed with a combined layout, but this is inadvisable unless a separate water heater is installed. Otherwise the furnace would have to be so large that its operation would be uneconomical except when full capacity is needed. If a mechanical, electric fan is incorporated surprising capacities may often be enjoyed at small expense.

In a given size of firepot only a certain amount of coal may be burned economically and only a limited size of heating element warmed to 180 degrees content. If more heat is transferred to the heating element than needed, it often occurs that the system is thrown out of balance. Insufficient warm air is delivered to the rooms handled by this part of the plant, and too much heat goes to the hot water end. Again, the reverse sometimes occurs, that is, while the warm air end is provided with plenty of heat the hot water division is insufficiently cared for.

The common remedy or precautionary measure is to place both a warm air register and hot water radiation in the same room, say, a front hall. If it develops that the radiation is too well supplied at the expense of the warm air register, the radiation may be closed, and vice versa, the register blades may be closed so that more heat will be utilized to supply the radiation. To the scientist this remedial plan may appear inexact, but combination systems might be termed "tricky" as so many elements enter into design and operation. A single instance might serve to illustrate.

An elderly lady in a certain Maine town found she obtained little or no heat in the small north room which she used as a sewing room. This room, although small, had three windows in it and the light was good for her work. She sought the services of a local installer, and eventually there was put in the combustion chamber of the furnace a horseshoe design, hollow casting element and a hot water radiator in the room. Although the old lady was in excellent health, nevertheless she suffered from almost total loss of eyesight in her left eye. As she did her own housework she operated the heater most of the time.

Within two days after the radiator was set up and left working well, the radiation was found to be almost lifeless so far as heat was concerned, and the reason was not evident. The contractor was recalled and it appeared that the coal which the housewife had thrown on the fire was almost all on one side of the firepot. The result was that the right side of the heater worked well but the left side had almost no fire at all. Consequently, the right side of the heating element was warm but the left side only partially so. A thermometer placed in the water line revealed that the water, instead of being 180 degrees when it

reached the radiation, was only about 130 degrees.

Restoring the equilibrium of the fire in the furnace remedied the defective heating and sent the water upward at its proper temperature. It developed that the owner in tending her fire had favored her right eye, which was good, and thrown most of the coal on the right side of the heating element as a result. Yet, not all ineffective systems are so easily corrected.

Two Kinds of Piping Plans

There are, in general, two methods of piping employed in the direct radiation part of the combined system. The more common is that known as the two pipe, up-feed, with direct return. The other is the down-feed plan.

In the former the horizontal supply main, as shown in Fig. 5, is suspended near the ceiling of the basement, connected to the top of the heating element and pitched upward toward the hot water risers at not less than 3/4 inch in 10 feet. Branches extend from the riser to the bottoms of the radiators. The area of the main must equal the sum of that of all risers, while the riser, when two radiators are served, should equal the sum of the areas of the branches. Likewise the return main must be graduated so that it equals in area the branches attached to it. The return main is usually installed the same size as the supply main.

In the down-feed plan a single riser extends directly to an expansion tank, needed in both up and down-feed methods, and a horizontal main, connected to the riser near the tank, then runs along the floor of the attic with a downward pitch of about 3/4 inch in 10 feet. The supply drop feeder pipes are connected to radiators near their tops. Supply mains would best always be 1 1/4 inches in diameter or greater.

The Expansion Tank

An important part of the combination system is the expansion tank, placed at least 3 feet higher than the highest radiator. The tank prevents building up of pressures when the temperature of the water becomes too high, affords release of all air in the piping and escape of steam. A specimen layout of piping connections may be noted in Fig. 6.

The two pipe, up-feed plan involves running a riser from the supply main near the heater to the side of the tank near its bottom, while another pipe should be run from the bottom of the tank to the return main. Thus circulation is secured and freezing prevented when the attic is cold.

In a down-feed system, assuming the attic is warm, connection to the tank is made from the tee which supplies the main riser and attic main. A circulating line to the return main is unnecessary and need not be considered. The air vent noted at the top of the tank removes the air released from the water. Tank connections need not be

greater than 3/4 inch except under unusual conditions.

The capacity and size of the expansion tank depends entirely upon the amount of radiation which the hot water part of the combined system is to handle, and may be selected from the accompanying Fig. 7. To insure proper working of the completed plant it would be well to place the radiators beneath windows or other points of great infiltration the same as in any hot water heating layout. All radiators should be equipped with quick opening, water radiator valves and a union elbow on the opposite end.

All water line pipes also would best be opened on all radiators until the air within has been forced out.

When the combination plant has been completed it may chance that certain radiators do not heat as expected. This usually is caused by trapped air and lack of circulation and can be remedied by opening the air valves until the water enters the radiators, when they should again be closed. In filling the system with water for the first time it is suggested that the pipes be filled and emptied several times until all foreign matter is forced out. Leaks and other defects may be attended to between fillings.

It would be well, too, to keep water in the piping at all times even though the plant is not in operation, as rusting takes place almost at once when pipes are emptied. Especial care should be taken to see that no fire is made in the furnace unless there is water in the radiation and element; failure to regard this precaution may result in cracking the heater, loosening and distorting heating elements and their connections.



How to Clean Terra Cotta

THE correct method of cleaning terra cotta is something that should be understood to avoid disfiguring of buildings faced with this material. These methods have been set forth in a small circular by the Atlantic Terra Cotta Company, 19 W. 44th St., New York City, and are quoted here.

"Broadly speaking there are three different surface finishes in Atlantic terra cotta, lustrous glazed, matt glazed and unglazed. The glazed surfaces are the easiest to clean.

"For both lustrous and matt glazed finishes a good abrasive soap or washing powder is best. Where required there can be added to the latter a slight proportion of sharp sand. A stiff lather should be made and the surface scrubbed hard, lather allowed to remain long enough to soften the dirt and then rinsed off with clean water. Acid is not necessary for cleaning glazed surfaces.

"In cleaning unglazed terra cotta the addition of a slight proportion of commercial muriatic acid is recommended. The proportion of acid to water may be varied. One quart of acid to four gallons of water is sufficient in ordinary cases. In no event should it exceed 1 1/2 pints of acid to one gallon of water and care should be taken to rinse off shortly after applying.

"Where acid is employed use only wooden pails and fibre brushes. Metal pails cause a chemical reaction under which the solution becomes a yellow stain instead of a cleaning fluid. Do not permit hydrofluoric acid to be used. Many cleaners, in order to save hand labor, employ strong solutions of this which are highly injurious."

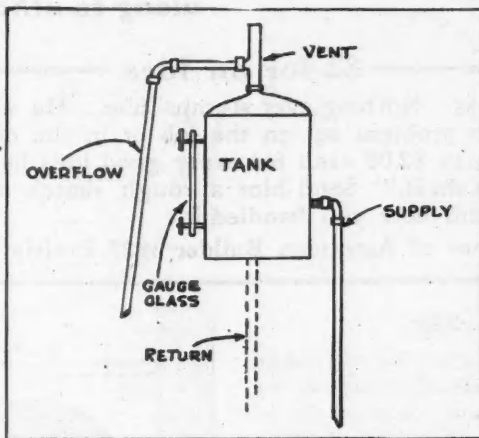


Fig. 6.—How Expansion Tank in Up-Feed, Combination Heating System May Be Connected.

Capacity of Tank, Gallons	Diameter of Tank, Inches	Height of Tank, Inches	Square Feet of Hot Water Radiation Handled
8	10	20	250
10	12	20	300
15	12	30	500
20	14	30	700

Fig. 7.—Sizes and Capacities of Expansion Tanks.

HOW DAN DOES IT

A Department for Passing "Life Savers" along to other Builders

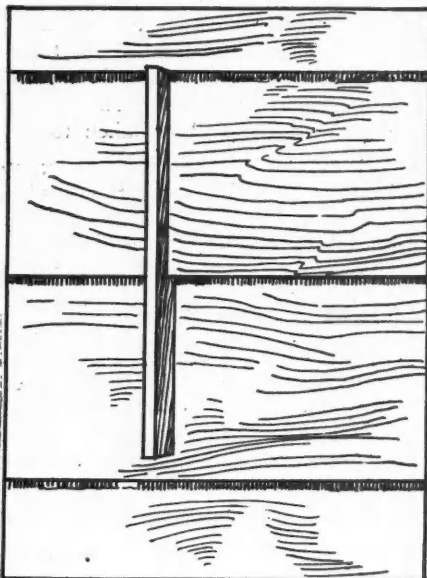
\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is the editor of this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder 1827 Prairie Avenue, Chicago, Ill.

Another Siding Gage

IN the July issue Mr. Harold Hay gives his method of putting on siding. In using his method, if there is any variation in the width of the siding, and there usually is, it will show up on the finished job. The method I use gets away from this difficulty. I put the first board straight, just as he does, then make a little device as shown in the sketch, from a piece of wood.



Here Is a Siding Gage That Will Keep the Boards Straight Even If Widths Are Uneven.

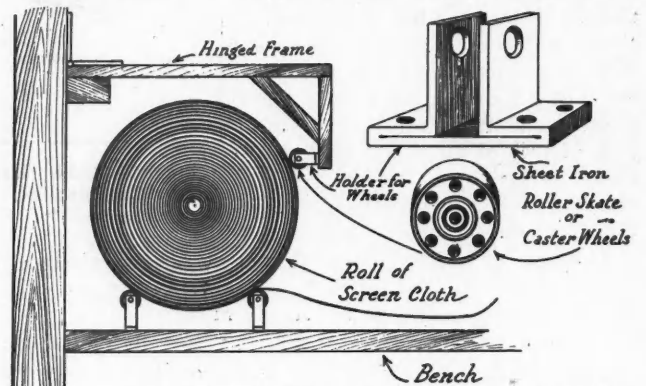
way the width of the siding makes no difference and the exposure is always the same.

A short time ago I had to remove a partition which supported a ceiling. I could not tie it to the roof, so I put a 4 by 8 across from one plate to the other, and put a 3/4-inch by 12-inch lag screw through into every ceiling joist. This pulled a sag of 1 1/4 inches out of the ceiling.

H. A. FARRELL, 813 S. Sheridan Ave., Tacoma, Washington.

Stands for Rolls of Screening

WHEN unrolling copper screen cloth, for cutting off into suitable lengths, the fixture shown in the attached sketch, will be found speedy and convenient, a means for saving labor. Two vertical rollers serve to support the screen cloth, while a third roller on a hinged frame holds the cloth from rolling forward. For rollers, the wheels from a pair of roller skates are of use, or, if not available, small caster wheels will be of service.



A Rack Like This Will Prove Convenient in Handling Screen Cloth.

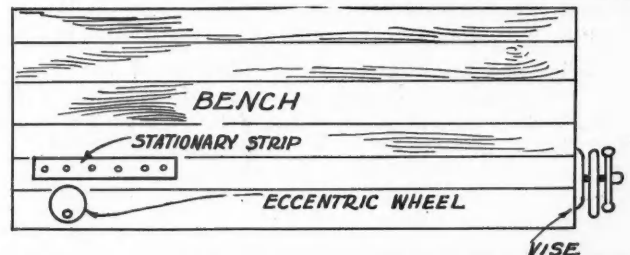
The sketch shows the simple details of this rolling stand. In use to remove a piece from the roll it is only required to grasp the edge and pull. The hinged section permits of readily removing the roll of wire and replacing it with another of different width, simply rolling the material along the bench or counter. The rollers should be made high enough above the bench that a piece of cord can be passed around the roll when it is to be removed from the holder.

G. A. LUERS, 130 E. Capitol St., Washington, D. C.

Simple Bench Clamps

THE accompanying sketch of a simple bench clamp practically explains itself. This clamp consists of a strip of wood fastened solidly to the bench and, beside it, an eccentric wheel. This clamp works quickly and surely and holds the material on which you are working very firmly. Its capacity for different sizes of material can be varied to suit any need according to the size of placing of the wheel and with a large wheel it will hold any material, from the largest sizes to the smallest, equally well.

CHRIST W. WALTER, Raley, Alta, Canada.

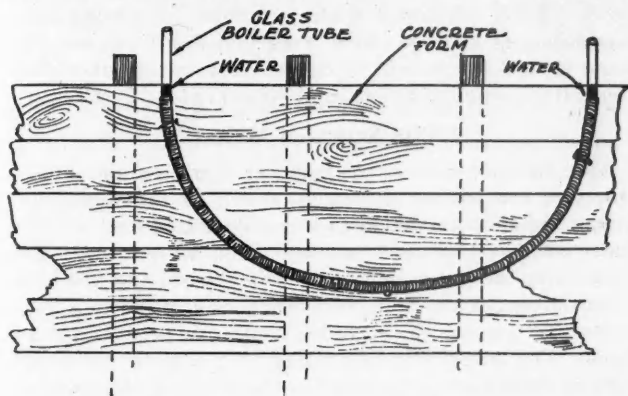


This Simple Clamp Should Prove Very Flexible for Various Sizes of Material.

Leveling Concrete Foundations

HERE is the method I use for finding my levels when building small houses. When I get my outside forms in, for the concrete basement walls, I insert a glass tube in each end of a piece of ordinary lawn hose. Pieces of glass boiler tube work very well for this purpose. I fill the hose with water and stretch it along the inside of the form, holding the tubes in a vertical position as shown in the accompanying sketch.

Since water always finds its level the points where the water comes in each glass tube must be on the same level



Two Glass Tubes and a Piece of Garden Hose Are Used in This Manner to Level Foundations. This method is both simple and accurate.

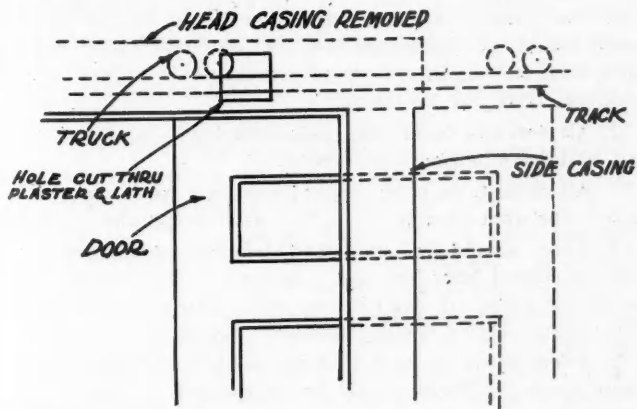
and I mark these points on the form. I continue this around the inside of the whole form, stretch a line around the marks and drive nails every 18 inches. This gives a perfect level to which to work for the top of the concrete wall. It is a quick and simple method of getting accurate results on a small job.

L. P. KIRKPATRICK, 3771—20th Ave., Vancouver, B. C.

Remounting a Sliding Door

I WAS called upon to replace a sliding door upon its track recently and it occurred to me that the method I used might prove useful to others. I removed the head casing on one side of the partition and, by cutting a hole through the plaster and lath, I was able to get at the track and replace it on the track. The sketch shows just how this was done. The hole should not be larger than necessary as the casing must cover it up when it is nailed back in place.

This whole job required only 30 minutes and the owner was greatly pleased as he informed me he had asked another contractor about it and had been told it would be necessary to tear out part of the partition. This would have



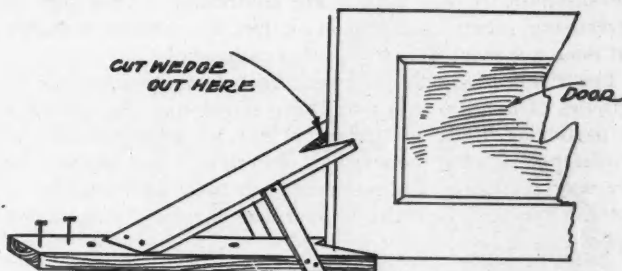
This Method of Replacing a Sliding Door Was Only a 30-Minute Job Instead Several Days as Estimated and Saved Much Inconvenience Besides.

made a job requiring several days' work with inconvenience and dirt and the expense of new papering.

J. P. POOS, 25 S. Ellwood Ave., Baltimore, Md.

For Trimming Doors

I AM an ardent reader of the How Dan Does It Department and am particularly interested in studying new and better ways of doing various jobs. In reading over the July issue it struck me that in trimming doors in the way suggested by Mr. Maddock the piece along the floor would be apt to wobble unless securely nailed along its entire length. This would make it unhandy to take from place to place. What I consider a better method is shown in the sketch which is simple enough to explain itself. This device



Another Suggestion of a Simple Device for Holding Doors While Trimming Them.

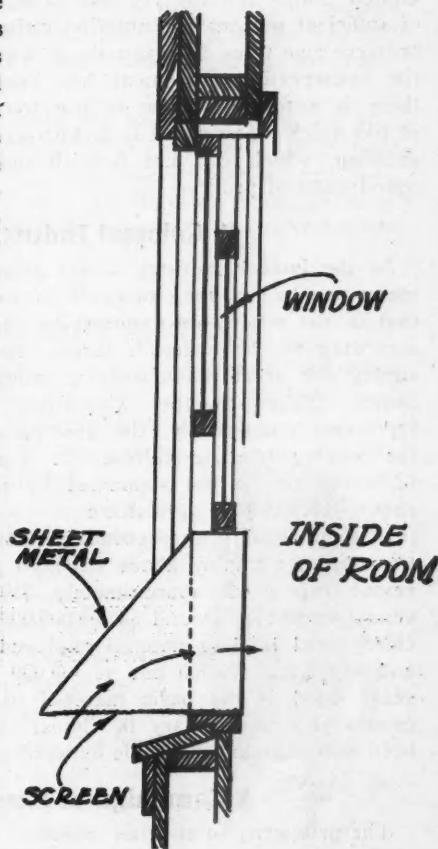
is easily and quickly made and holds the work when tack nailed to the floor with a couple of nails at the ends. These nails can be withdrawn quickly and easily whenever you wish to move this device to another place.

JOSEPH McGRATH, 339 Sumner Ave., Brooklyn, N. Y.

Rainproof Ventilator

I HAVE seen some very clever ideas in the How Dan Does It Department and now I have an idea which I believe is clever enough to be useful to other people. It is a device to admit fresh air through an open window without admitting rain at the same time. The device is made of sheet metal or wood and screen, the lower side of the box-like fixture being screen and the ends and sloping top either sheet metal or wood. It will slip under an open window in the same way as the old-fashioned screen and is just as easily removed. When in place air can circulate up through the screened bottom, but neither rain nor flies can enter.

HAROLD BASSETT, 216-A N. Tower Ave., Centralia, Wash.



Metal or Wood and a Piece of Screen Wire Form a Rainproof Ventilator for the Window.

The Lumber Industry Undertakes Cooperative Trade Extension

THE lumber interests of this country have now undertaken a general advertising campaign for lumber as a whole and without distinction of species. Although many of the great lumber manufacturing corporations and regional associations of lumber manufacturers devoted to certain species of lumber have done a large amount of research, merchandising promotion and advertising, they have found that such particular undertakings do not meet the situation by which they are confronted. This sort of advertising meets competition within the lumber industry but does not meet that from other industries.

The rivals of lumber compete with it as lumber, not as varieties of lumber, and it has been found that the advocacy of particular kinds of lumber is not an adequate offense or defense against competing materials. So, without in any way curtailing or interfering with their particular trade extension enterprises, the lumbermen have undertaken this general campaign.

\$5,000,000 Fund Subscribed

Acting under the auspices of the National Lumber Manufacturers' Association, some 300 of the leading soft wood and hard wood manufacturers and distributors in the United States and British Columbia, have subscribed \$1,000,000 a year, for five years, to the treasury of a united drive in the interest of lumber in competition with other building and industrial materials.

In its announcement the Association states that, contrary to the popular opinion arising from conservation propaganda, there is at present an abundance of timber in the United States and the problem of a future supply is one of sufficient present consumption rather than overuse. To preserve ripe trees, for example, is waste. In other words, the conservation movement has been overdone in that there is a tendency now to use too little wood instead of too much. The result is disastrous to forestry and tree growing, which can not flourish unless they are on a sound basis of profit.

A Colossal Industry

As the lumber industry is not greatly evident in cities many people are quite unaware of its extent, as well as that of the other forest industries. The lumber industry, according to the criterion taken, stands second to sixth among the great manufacturing industries of the United States. Taken together with other forest industries, it represents, numerically, the greatest population group in the country after agriculture. It is estimated that about 12,000,000 people are supported by forest industries and about 40,000,000 by agriculture.

In their primary and secondary phases, the forest industries directly employ about 1,200,000 persons, have an invested capital of approximately \$10,000,000,000 and an annual output of around \$4,000,000,000. Besides being the chiefly used building material employed in the United States and supplying 300,000 out of 400,000 dwellings built each year, wood is the basic material of some 70 industrial groups and is necessary in almost all industries. It has been called the indispensable material of civilization.

A Campaign of Research

The prosperity of such an extensive industry is obviously of importance to the whole business community of the United States. The business world generally, therefore, will be interested in the five-year plan to reinvigorate the lumber industry in all its branches. The campaign includes

scientific research bearing on reforestation, employment of hitherto neglected species of trees, economical utilization, and such problems as the prevention of decay and rendering of wood fireproof or fire resistant. The research work will also extend into the manufacturing and merchandising fields. Three divisional trade extension offices are being established at Chicago, New York and San Francisco, and some 15 field offices will be opened in as many other cities. General headquarters remain in Washington, D. C.

"The Story of Wood"

The historic interest, the pioneer romance and present status of the lumber industry, as well as the value of its unique material, are set forth in an illustrated booklet, "The Story of Wood," issued in conjunction with the extensive advertising program which is now introducing the trade extension endeavor. The advertising plan includes the daily newspapers, national magazines and various class publications. The advertising of a contest for a distinctive slogan for the lumber industry, which is the publicity curtain-raiser, appears in the magazine and class publications. The newspapers will be invoked with the opening of the regular advertising series, early in 1928. However, hundreds of lumber dealers have promised to take advantage of the chance to capitalize locally the fruits of the national slogan advertising.

Fifteen thousand dollars in 57 prizes is offered in the slogan contest. It is necessary for each contestant to secure and read a copy of "The Story of Wood." It is believed that in this way a large portion of the public will be interested in the industry and its product and the ground prepared for the ensuing, intensive work of the five-year trade extension campaign, including newspaper and further magazine advertising.



The Responsibility for Safety

"THE politicians have taught us to shout 'safe and sane,' but neither they nor we have done much about it," according to J. C. Sanderson of Sargent & Lundy, Engineers, of Chicago. "We counsel caution, then praise daring men who have won by taking a chance.

"The contractor's responsibility is first and he should be required to employ intensive safety measures. It is not difficult to demonstrate that the jobs which are best organized for safety are also best organized for speed and economy. Here are some good rules:

"1. The master mechanic is to make a careful daily inspection of all equipment on the job and render daily reports on its condition. Equipment that is in any way defective must not be operated.

"2. All derricks must have extension levers so the operator will have unrestricted vision.

"3. All rubbish must be cleaned from the work and piled outside the area of activity as fast as it accumulates.

"4. There should be established definite and comfortable lanes of travel over the job. These travel lanes should be out of range of derricks or other moving equipment. The rubbish crews should maintain them.

"5. There must be proper stairs, ladders and hand rails where needed. These should be maintained by the master mechanic. Any injury to stair, ladders or hand rails should be repaired at once.

"6. All scaffolds, planked areas, etc., to be passed on by the master mechanic."

WHAT'S NEW ?

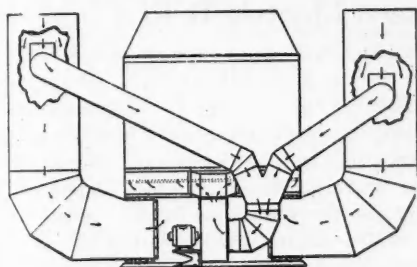


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Solving Heating Problems

EXPERIENCE has shown that difficult heating problems can be solved by the use of a fan on warm air heating systems and that heating efficiency can be increased on any such system by the same means. The theory of this heating system is to increase the flow of cold air to the heating unit and, thereby, the flow of heated air to the various rooms of the house or building served.

Furnace fans and boosters have now been developed to a point where they are no longer an experiment. As one manufacturer states, "You can profit by our experience. With this line, your experimenting has been done for you.



One Type of Furnace Fan Installation for Assuring Ample Warm Air Heat.

We furnish the equipment necessary to meet your needs and our engineers will welcome every opportunity to work with you. They will gladly recommend the outfit best fitted to meet the requirements of any job you may figure.

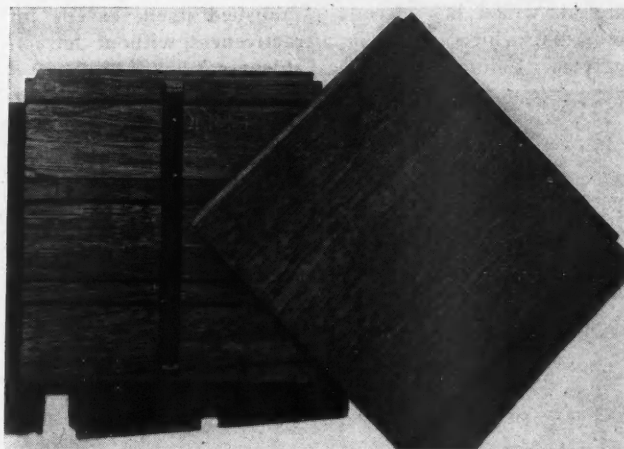
One type of installation in this line is illustrated here. It is one of six different types made by this company for use with all types of warm air furnace and to meet the requirements of all the usual warm air heating installations. This particular model is for use with the standard top radiator type of furnace. These fans are furnished with motors adapted to alternating or direct current, 110-220 volts, single phase, 60 cycle, but can be supplied to fit other specifications at a small extra charge.



Economical Patterned Oak Floors

FOR many years the use of oak flooring in pattern form has been confined to the more pretentious homes, where the higher cost of the material and its installation was not an important consideration. Because of the great beauty and greater opportunity for the expression of individuality with this type of floor, efforts have been made to bring its cost down within the range of the average home owner. This problem has now been solved.

After many tests of floors laid with this new flooring and put to hard service an announcement has been made. This flooring material consists of a block, as illustrated, which is $6\frac{3}{4}$ inches square and is made up of three pieces of $2\frac{1}{4}$ -inch face flooring. These pieces are held together by a patented steel spline, inserted through the back. It is claimed that these blocks can be laid faster than the generally used strip flooring and can be laid by anyone who can lay strip flooring. Only one nail is required to hold the block securely in position.



Oak Flooring Units in Blocks $6\frac{3}{4}$ Inches Square Make Pattern Oak Floors Available at Low Cost.

Block flooring of this kind can also be laid in mastic directly over cement without the use of nails or wooden studs. This latter fact should appeal particularly to builders of apartments and for these the fact that the $6\frac{3}{4}$ -inch squares have a tendency to make small rooms appear larger is an additional appeal.

A variety of grades, to fit any building budget, are provided in the new flooring: clear quartered white oak; clear quartered red oak; clear plain white or red oak; A select plain white or red oak; B select plain white or red oak; and common, which is made up of mixed white and red oak.



Ornamental Mail Boxes

ORNAMENTAL mail boxes in various styles and sizes are designed to add a finishing touch to the exterior of the home and serve in a practical manner the purpose of receiving mail. These boxes can be obtained in four sizes, to suit the need, according to the amount of mail commonly received. The illustration shows the smallest size, 6 by 13 inches.

The largest box, intended for homes, country estates and professional men who receive large quantities of mail, magazines and newspapers, is $10\frac{1}{4}$ by 22 inches. The other two are sizes between these. These boxes are made of certified, malleable iron and are unbreakable. They are finished either dull black, antique black or antique green. They may also be had in brass in a variety of finishes.

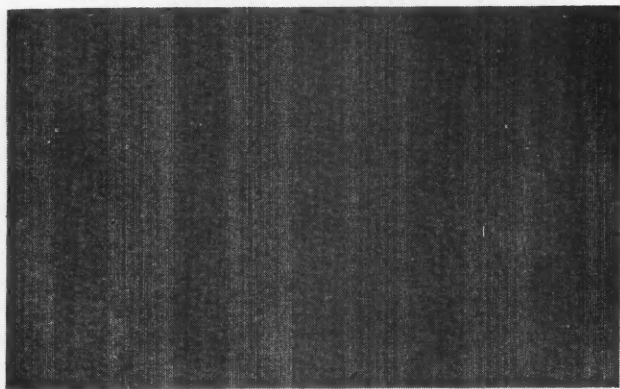


One of a Series of Ornamental Mail Boxes.

Corded Waterproof Window Shades

WITHIN the past few years corded window shades have become justly popular, for material of this sort adds a touch of charm to windows not possible to achieve with plain colored shades. Realizing the popularity of the corded type of shade, one manufacturer of a very distinctive type of shade material has now produced this material in a corded design.

This material, which is now available corded, is a shade cloth made by impregnating a carefully selected, close woven cloth base with pyroxylin, essentially the same material which accounts for the durable beauty of the new Duco finish for automobiles and furniture. The corded material is the same in every way as the plain material, which has already established itself, except for the cording which adds to its attractiveness, without detracting from its durability or washableness.



This Well Known Window Shade Material Has Now Been Made Available in Corded Patterns of the Present Popular Type.

Being waterproof, this material is impervious to all rain or moisture and can be washed over and over again without injury. Soap, hot or cold water, and a brush renew its appearance season after season, year after year. Nor will this material crack or pinhole or sustain any other surface blemishes.

The corded design is woven straight through the base cloth. This assures that the cords will always hang perfectly uniform without ruffling. Being actually a part of the cloth, nothing can mar the beautiful corded design. This cord material is, at present, available in three colors. In order that the full beauty of the corded effect will be apparent when the shades are hanging at the window, light colors have been selected. These are: snow white, designated "Snow"; cream, designated "Dawn"; and ecru, known as "Sunset."



Gas Range With Smooth Top

ALL of the features which characterize the modern gas range are found in a line, one style of which is illustrated, and in addition these ranges have cooking tops which are smooth like a table. This last feature is appreciated more and more by anyone using these ranges. It affords a broad, smooth surface on which vessels can be slid about without lifting and with plenty of room to push things back and keep them hot without burning or drying out.

The enclosed top is easily kept clean and it affords four cooking heats, quick boiling, gentle boiling, simmering and warming, all from one burner. Each food is cooked at exactly the right temperature. The burners used are of a special type which are said to bring water to a boil at least 25 per cent faster than the ordinary open top burner, using the same amount of gas.

The oven is large enough to accommodate the largest

roast and has a perfect heat distribution which assures even baking and roasting on top and bottom racks. The quick compact broiler will take large steaks and cook them perfectly. A small wheel is attached as an oven control and this assures perfect roasting and baking. It is only necessary to refer to the cooking chart, which is attached to the range and can never be misplaced, set the wheel at the right temperature, as indicated on the chart for the pie, cake or whatever one may be cooking, and return to find perfectly cooked food at the end of the proper time.



A Thoroughly Modern Gas Range the Smooth Top of Which Is One of Many Features.



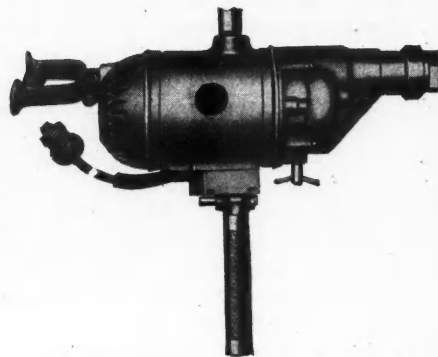
Two Speed Electric Drill

FOLLOWING along the line of a highly successful, $\frac{7}{8}$ -inch electric drill which it manufactures, a company well known as a maker of electric tools has recently added to its line a two-speed, portable, electric drill of the same capacity. This tool operates at the normal speed for $\frac{7}{8}$ -inch portable drills, namely, 380 R. P. M. Inasmuch as this speed, however, is far too slow for the efficient use of smaller size drills, high speed gearing is also provided. Speeds may be changed quickly by the use of a shift lever, even though the motor may be running. For all-purpose use, the manufacturer says that this two speed drill is the last word in speedy drilling.

The new drill is fitted with a No. 2 Morse taper socket in a removable sleeve. It is held in the drill spindle by a large hexagonal nut. Since the tang of the drill bit protrudes slightly beyond the end of the sleeve, the use of a drift in removing the drill is unnecessary.

Other features include the use of vanadium alloy steel gears and deep groove, radial, ball bearings. A ball thrust bearing is provided to take up end thrust and adequate lubrication is secured through grease reservoirs. Heavy felt washers, protected by metal retaining rings, keep the motor windings clean and dry.

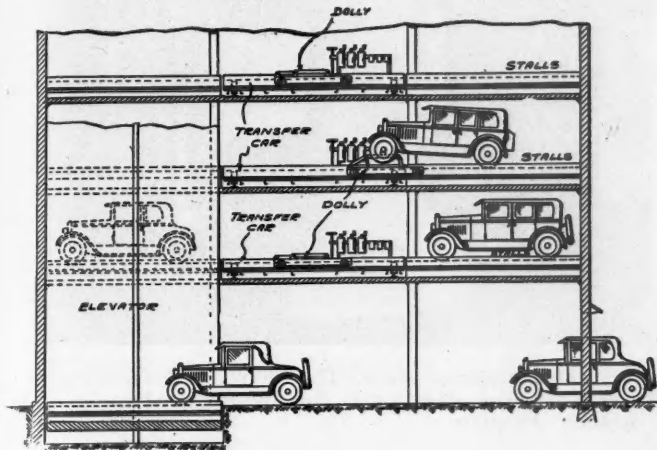
The use of square type brush holders allows for adjustment of brush spring tension and brushes are fitted with so-called "pig tails" or shunts. The patented, fully enclosed switch with cable clamp is standard with this tool. It can be furnished wound for 32, 110 or 220 volts, while the universal motor allows for operation on both direct and alternating current of the same voltage.



Two Speeds for This Electric Drill Adapt It to Both Large and Small Drills.

Improved Automobile Storage

THE great demand for automobile storage space in congested districts has necessitated the building of multiple story buildings for this purpose and the demand for such buildings continues to increase. The handling of cars within such buildings, by ramps or other means, with the greatest economy of space and handling, has always been a problem only partially solved. Now a new method has been invented which promises a real advance in automobile storage methods.



A Complete System of Automobile Storage Which, It Is Claimed, Has Many Advantages Over Previous Systems.

This method was devised by the head of a firm which, for 40 years, has specialized in the manufacture of traveling cranes and material handling machinery. A full size working installation has been built and placed in operation and has been declared a complete success by practical engineers and architects, it is stated.

The system consists of one or more elevators to carry the cars to the various floors, an electric motor driven transfer car which carries them across the building to the desired stall and an electric dolly which gets under the front axle, raises the front wheels off the ground and propels the car, by electric power, from the elevator to the transfer car and from the transfer car to the stall, and vice versa.

A Handy Jamb Fastener

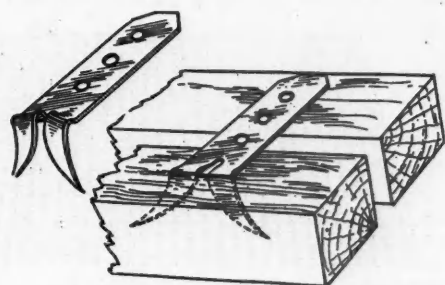
A JAMB NAIL that holds the jamb in place when the building settles. The picture shows, at the right, when jamb nail is driven into the wood how it spreads so it cannot work loose.

Jamb nails are used in doors, windows, for fastening shelves and on corners of boxes.

It sets the frame squarely and accurately, it drives into the wood without cracking the wood, requires less fitting on doors, saves labor in putting up of nail holes by painters, and a carpenter can do more work—do it faster and easier than by the old way.

This jamb nail is made in three sizes, 1 3/4 inches long, 2 1/4 inches long and 3 inches long.

The manufacturer offers to send you a box of these jamb nails on approval. You can return

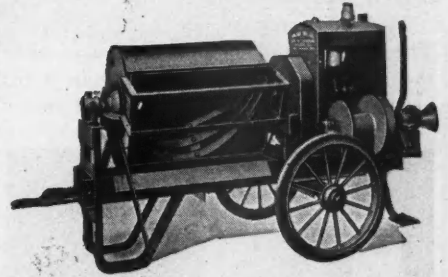


Simple but Effective in Setting Jambs so They Stay in Place.

them if, by actual use, you do not find them better than anything you have ever used in setting jambs.

Mortar Mixing Equipment

SUITABLE equipment for either hand or power mixing of mortar can be furnished by a certain manufacturer, both types of equipment being illustrated here. The mortar box is constructed of No. 14 steel plate throughout. The sides and ends are flanged by a high power press forming a tubular section all around. This gives the box ample strength to prevent any kinking or bulging and also furnishes a sturdy and convenient handle. The bottom and ends are formed from one piece, giving a smooth working surface and one which is easily kept clean. There are no sharp corners, swinging or projecting handles, no nails to pull or cracking to contend with. It is made in the following dimensions: 3 by 6 feet; 3 by 8 feet; 4 by 8 feet; 4 by 10 feet; all of which are one foot deep.

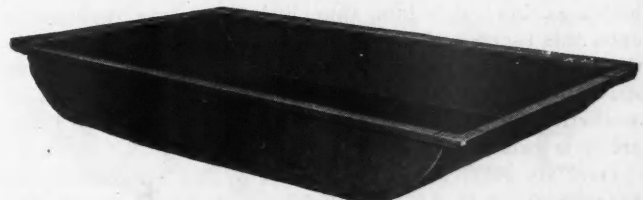


Economy of Time and Labor Are Effected by the Use of This Mortar Mixer.

The power mixer is a time and money-saver as, it is said, it will enable bricklayers to lay between 10 and 20 per cent more brick a day, spreading more easily and eliminating tempering on the board. The mixer is sturdily built of steel throughout. The discharge gate is adjustable and leak-proof and the end drum of the discharge gate is equipped with a removable wear plate. The mixing paddles are of forged steel, absolutely uniform and safe from breakage and are sprung on the shaft, preventing any possibility of loosening.

This mixer balances on two wheels for easy moving from place to place and for transportation as trailer from job to job. Where it is to be trailer instead of loaded on a truck, the manufacturers recommend that it be ordered equipped with rubber tired wheels and roller bearings. Considerable attention has been paid to keeping mortar out of the bearing boxes and even after continuous running, with no repacking, it is impossible for mortar to get into the bearings.

It is often necessary to place a mixer inside of a building and for this reason this machine is designed to pass through a 34-inch opening. It is made in two sizes, 13 cubic foot capacity and 8 cubic foot capacity. These mixers are equipped with two cylinder engines, eight horsepower for the larger and six horsepower for the smaller.



A Sturdy Mortar Box Reinforced Against Bulging and Kinking.

"The Architect in History," by Martin S. Briggs, F.R. I.B.A., published by the Oxford University Press, American Branch, New York City, has been written with the object of claiming for the architect the position in history which is his due. Price, \$3.75.

A New Electric Refrigerator

A NEW electric refrigerator was recently placed on the market by one of the largest manufacturers of electric goods of all kinds. This new refrigerator is the result of 15 years of experimental work and the co-operation of 64 electrical engineers, it is stated, and is remarkable for its quietness, simplicity, economical operation and freedom from trouble and annoyance.

The icing unit is one of the most compact of its kind. The motor and compressor are directly connected and the whole mechanism operates in a bath of oil within an hermetically sealed housing placed on top of the refrigerator.



Practical, Noiseless and Highly Economical, This Electric Refrigerator Is an Important Development in Its Field.

The icing unit is one of the most compact of its kind. The motor and compressor are directly connected and the whole mechanism operates in a bath of oil within an hermetically sealed housing placed on top of the refrigerator.

The electrical connection is by means of an ordinary wire and wall plug so connection can be made anywhere. This refrigerator is made in nine models.



More Efficient Radiation

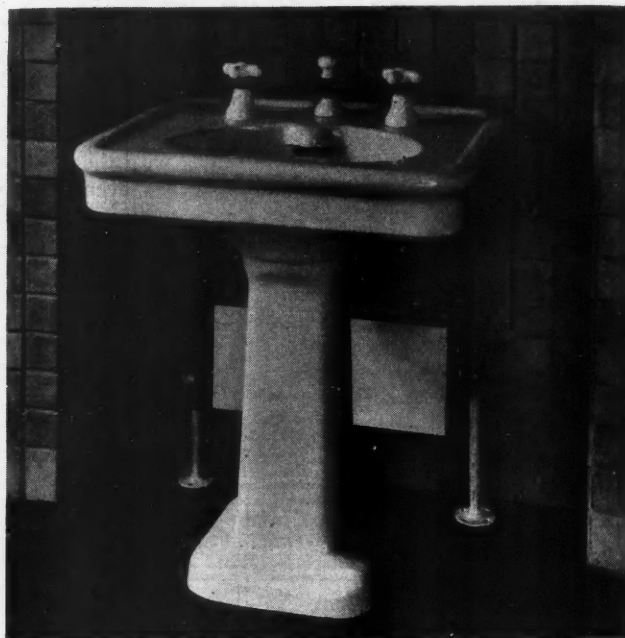
THE familiar, cast iron radiator has for many years been one of the least sightly features of homes and buildings, but for a long time little was done to improve upon this useful and necessary piece of equipment. Finally the high building costs and tremendous premium on usable space made the problem one of economics as well as of aesthetics and new types of radiators were developed and are now coming to be recognized.

Over six years ago the engineers of one company began experiments to develop a radiator which would occupy less space than cast iron and be more efficient. The result is a welded brass radiator that is 20 per cent the size and 20 per cent the weight of the equivalent cast iron radiator.

The successful solving of the supposedly impossible problem of welding brass was what made this radiator possible and once this process was perfected and patented the development of the radiator was undertaken. The first radiators were similar in shape to the cast iron radiator, but the size and heating efficiency was then increased by attaching a

This unit simply sits on the chest with the joint tightly sealed by means of rubber gaskets.

In case trouble with the icing unit does occur it will not be serviced in the owner's home; in fact, such service would be impossible because of the fact that the unit is hermetically sealed. The unit is guaranteed to work satisfactorily and if it fails to do so it is simply lifted off to be sent back to the factory and is replaced with a new unit. The company will spend the usual allowance for service after installation on additional engineering and inspection to insure mechanical perfection before the product leaves the factory.



The Small Radiator Shown Here Replaces Effectively the Large Cast Iron Radiator Ordinarily Required to Heat a Bathroom Properly.

number of thin brass pins on each side of the column, and the sections were made up with their long dimensions parallel to the floor.

These radiators can be placed within the walls, under windows, and hidden by an attractive cabinet. They are also installed in cabinets in the room and these cabinets may be made both ornamental and useful in addition to their heating function. They are often enclosed in sea chests or old brass bound trunks or boxes as well as in cabinets which serve as stands or consoles. The accompanying illustration shows a special bathroom unit and cabinet which extends only three inches from the wall and is 18 inches wide and eight inches high.

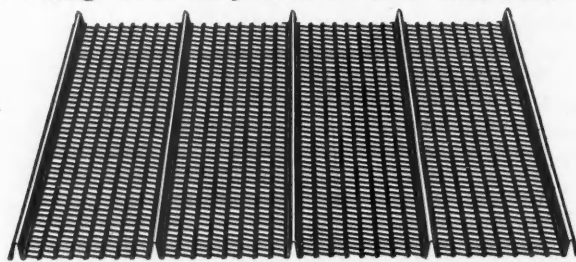


Metal Lath Reinforcing

THE illustration shows a $\frac{3}{4}$ -inch ribbed metal lath which has been described as a superior product in its particular field of reinforced concrete construction. Anticipating a heavy demand for this product, the manufacturers developed their production facilities several months before announcing it and so are in a position to make prompt deliveries.

This product is carried in stock painted only in 28, 26 and 24 gauge, weighing .46, .56 and .74 pound per square foot, respectively. It is furnished in Armco ingot iron, painted, in two weights only, 26 gauge and 24 gauge, and in galvanized in 28 gauge. It is made to order only in this grade.

This lath has a covering width of 24 inches and comes in standard lengths of 4, 5, 6, 7, 8, 9, 10, 11 and 12 feet. Sheets of intermediate lengths are furnished without charge for cutting but at the price of the sheet from which cut.



The Manufacturers of This $\frac{3}{4}$ -Inch, Ribbed Metal Lath Are Equipped for Large Production and Prompt Deliveries.

An Advanced Idea

.. and a Profitable idea for builders

HERE is a new kitchen unit which adds value out of all proportion to its cost, to homes and apartments. The famous Napanee Dinet [patented]. Domestic science tests have proved that this outstanding achievement in kitchen cabinet design lightens kitchen tasks immeasurably. Women everywhere have acclaimed it for the new note it strikes in kitchen organization.

The Dinet is a vanishing breakfast table. It performs. It slides in and out—cutlery drawers moving with it. It is out of sight, yet in a moment it adds tremendous extra table space so necessary in the preparation of a meal. It is priceless for its extra room at a time of preparation for big parties and dinners—providing, for instance, space for salads and desserts till time for serving.

In the larger model it seats four people comfortably. In other models it will seat three people. Condiments, dishes, silver, etc., are right at hand. When not in use, the Dinet is pushed back in place and does not take up a single inch of storage space, nor does it disarrange the other Napanee conveniences in any way. No other cabinet can give all the service of Napanee equipped with a Dinet.

The Napanee Dinet is only one unit in the extensive Napanee line which embraces sizes and styles of kitchen cabinets, butler cabinets, broom closets, dish cupboards, refrigerators, wall cup-



No other kitchen equipment has this feature

boards, bases and the like to fit any space and any arrangement of doors and windows.

Our Architectural Service Department will gladly work with you to help you attain the utmost of kitchen efficiency through the proper combination of Napanee units. Send the coupon for full information on this FREE service.

COPPEBROS. & ZOOK, Napanee, Indiana
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Chicago Office: 308 N Michigan Ave., Keehn Bldg.
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NAPANEE

DUTCH KITCHENET

Built Like Fine Furniture

O U R G O L D E N A N N I V E R S A R Y Y E A R

COPPEBROS. & ZOOK, Napanee, Indiana AB10
Gentlemen: Please send me further information regarding styles, sizes and arrangements of Napanee Kitchen Equipment. I am Architect Builder Owner. (Please check square)
Name _____
Address _____
City _____ State _____

Low Priced Electric Refrigerator

SIMPLIFIED construction, compactness and low operating cost are the outstanding features of a new, low priced, electric refrigerator recently announced by one of the largest manufacturers. Refrigeration is furnished by means of a specially designed, copper finned cooling coil and compressor mounted on a special spring suspension in the top of the cabinet. By building the cooling assembly in one unit, doing away with many special parts and connections and utilizing mass production the cost of this unit has been cut to a large extent, it is said, without impairing the reliability under any climatic conditions and with just as economical operating cost as in any of this company's higher priced models. These statements are based on extensive tests under all conditions.



This New, Low Priced Electric Refrigerator Is Made Possible by the Economy of Mass Production.

This refrigerator is equipped with two ice trays which will freeze 36 cubes of ice at one time. The cabinet is of metal, finished in duco. It is 56 inches high, 27 inches wide and 24 inches deep. The insulation is a thick layer of corkboard. The food storage compartment is of approximately 5 cubic foot capacity. This compartment measures 23½ inches high, 20¾ inches wide and 16¾ inches deep. The refrigerating mechanism is air cooled. The unit comes equipped with an extension cord and installation is accomplished merely by plugging into any electric socket which is conveniently located.

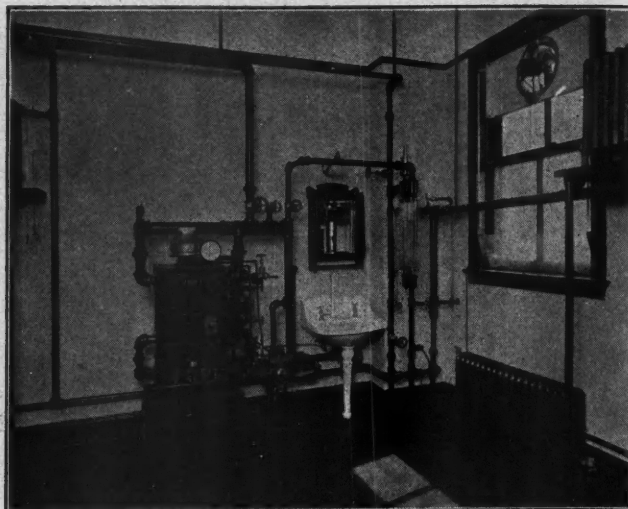


Controlled Heat Systems

THE accompanying illustration shows a working model of a complete heating system in operation in the Chicago offices of a leading manufacturer of heating systems. This model attracted much attention among heating contractors and engineers because it shows exactly how the "differential loop" of the "controlled heat" system operates.

This differential loop is a device that normally never functions. Its duty is to maintain a constant pressure differential between the steam main and the return line whenever boiler pressure exceeds a pre-determined or unsafe amount. A further advantage is claimed for the loop because it contains no mechanically operated moving parts to clog or stick. Consequently it is ready for action at any time. One side of the loop is connected into the steam side of the boiler while the other is connected into the high points of the return mains.

Heating contractors and engineers who are interested in an automatic safety device for vapor systems find this working model of much interest since it is built of glass so that the action of the steam and water can be seen at



Complete Model Heating System, Made of Glass So That Contractors May See Its Operation at the Company's Office.

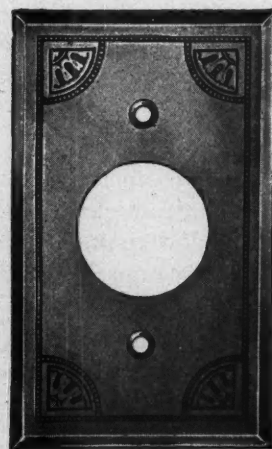
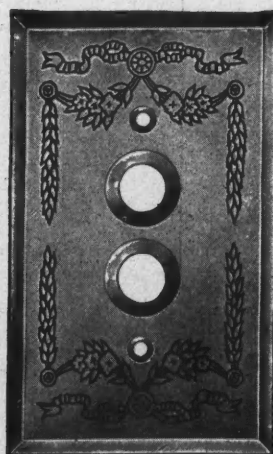
all times. The manufacturer offers a plan and specification service to heating contractors which can be obtained through any of its wholesalers or direct from the company.



Etched Brass Switch Plates

THE illustration shows something new in switch plates which should appeal to those who wish to enrich the decoration of their rooms. These switch plates are made of heavy .060 brass with hand etched designs that blend with period designs and fine furnishings. They afford a finishing touch to the room which can hardly be obtained with plain brass switch plates.

These etched plates are offered in three designs, either for tumbler switches or push switches in gangs of one to four and also for convenience outlets, single and duplex, and combination plates. Any of four finishes may be specified. These are bronze, statuary bronze, and antique brass at the regular list price and genuine Butlers silver at a slightly higher price. Experience has shown that it is impractical to apply other finishes to the plates.



Etched Brass Switch Plates Are a New Idea Which Will Contribute Much to the Room Decorations.



Announce 1928 Convention

AN announcement states that the twenty-fourth annual convention of the American Concrete Institute will be held at the Benjamin Franklin Hotel, Philadelphia, Pa., Tuesday, Wednesday and Thursday, February 28, 29 and March 1, 1928.



Easy to lay—

ONCE the starters have been laid along the eaves, the job is practically all laid out. The accurately punched anchor holes guide each successive shingle into place. The nail holes too are already punched. Any carpenter can get the hang of it immediately. He'll be through and ready for the next job in no time.

There is a bunch of re-roofing business in your town. Lay Johns-Manville Asbestos Shingles right over the old roof and you will find the business easy to get and the work easy to do.

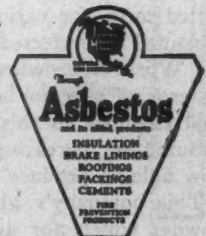
JOHNS-MANVILLE CORP., 292 Madison Ave. at 41st St., New York City
 Branches in all large cities

For Canada: Canadian Johns-Manville Co., Ltd., Toronto



Public opinion is swinging to asbestos. The shingle that defies the blow torch is steadily climbing in popularity. People are turning more and more to the beauty, permanence, and fire-safety of Johns-Manville Asbestos Shingles.

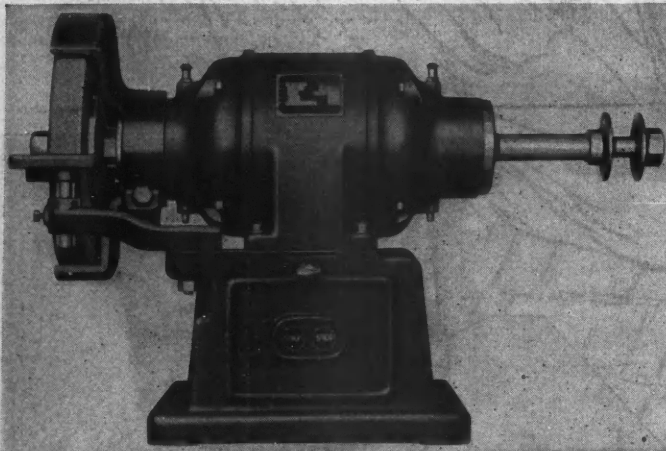
JOHNS-MANVILLE Asbestos Shingles



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

New Line of Grinding Machines

THE illustration shows one of eight, new model, combination grinding and buffing machines which have been brought out by a company specializing in portable, electric machine tools, and which are made in one and two horsepower sizes. As illustrated the machine is equipped with an encased type spindle extension which, because of its rigid, double ball bearing construction, is recommended for heavy duty buffing, polishing and scratch work. Other machines are equipped with open type spindle extensions which are most practical and necessary for close corner work.



Here Is One of Eight New Grinding Machines Recently Brought Out by a Company Specializing in Portable Electric Tools.

High grade, oversize ball bearings are mounted in the end heads in close proximity to the wheels and all bearings are completely enclosed and protected from dust and grit. A good grade of oil should be used for bearing lubrication and after the bearing chamber or oil reservoir is once filled to the overflow this, for ordinary service, will last two or three months. The oil chambers are provided with suitable flush or drain plugs to permit an occasional cleaning.

A motor starter with push button control is standard equipment on all models. Safety is assured in that the grinding wheels are of diameters in proportion to motor speeds to give safe yet efficient travel in feet per minute. Two and three phase alternating current machines are equipped with motors of squirrel cage design. They are ruggedly built with a liberal factor of safety and reserve power.

Single phase, alternating current machines are equipped with improved, commutating type, repulsion, induction motors which have no dragging centrifugal switch. Low voltage has no objectionable effect on these single phase machines.



Waterproof Glue

THE use of glue made from the curds of milk has been known for nearly 3,000 years, since the time of the early Phoenicians and Egyptians, who used it, in an unperfected form, for various kinds of woodwork. Casein glues remained unperfected for commercial use, however, until the World War when the demand for exceedingly strong waterproof glue for aircraft turned the attention of industrial chemists to this field. They have since been manufactured in increasingly great quantities till one plant is now able to produce 30,000,000 pounds of glue per year.

This company's glue is made in the form of a white powder which, for use, is mixed with cold water, is used cold on cold lumber in a glue room at ordinary working

temperatures. No special equipment is required for its use. It may be applied with a brush or with an ordinary type of spreader found in woodworking plants. It forms a joint of greater strength than the wood itself and meets the most rigid requirements. Its cost per unit of manufacture is low because it has a large spread, is used cold, requires less equipment because it requires but one-fourth the time in containers, and its products do not require patching or repairing after shipment. It also makes possible higher efficiency of workers because the glue is kept at a normal temperature, and a greater use of machinery.

Though termed waterproof, this glue should not be thought absolutely waterproof under all conditions. It will soften if submerged for a considerable time, but it will not dissolve and will again harden to its original strength when dry. It is impervious to all atmospheric conditions, including both moisture and heat and conforms with the army and navy specifications.



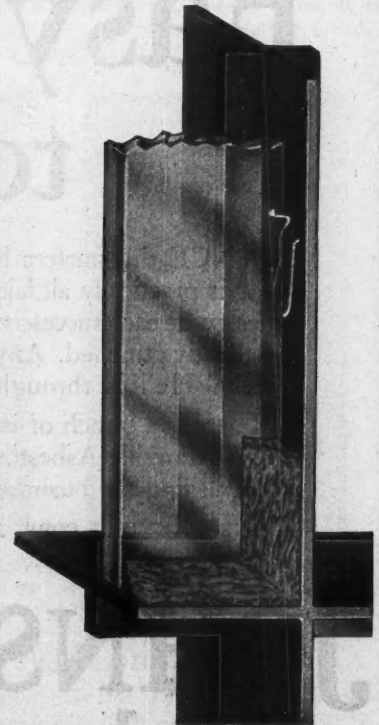
New Heavy Weight Steel Sash

HERE is a new, heavy weight, steel sash which has recently been placed on the market by a manufacturer specializing in steel sash, windows, fire escapes, stairs, coal chute doors and similar products. It is stated that this new sash does not in any way supplant other products but is designed to supplement the popular priced steel sash which is still being made, and affords a choice between the regular weight sash and the new heavy weight to meet the requirements of the installation.

The frame and muntin bars of this new sash are of cruciform construction, increasing the strength and rigidity in four directions. The cruciform bar is of $\frac{3}{8}$ -inch stock, 1 inch by $1\frac{1}{2}$ inches, the 1-inch bar crossing the $1\frac{1}{2}$ -inch bar. The addition of the fourth rib is said to practically double the lateral strength with a weight increase of 25 per cent.

An extension lip on the outside of the muntin bars, with the glazing rabbet on the inside, permits double glazing at no additional cost except the punching of holes for glazing clips. The entire brick raggle or vertical joint in the window jambs is covered on the inside and outside by the outer frame member of the sash. With the ordinary sash, grouting on the exterior of both jambs is necessary for a neat finish, this involving an expense not required on a sash of the cruciform construction.

On all types of this company's ventilators, flat surface contact is used, the ventilators having $\frac{3}{8}$ -inch flat surface contact around all sides, making a continuous flat weathering, thoroughly rain-proof because it permits one-third greater contact than other sash



This Shows the Cruciform Construction of This New Solid Steel Sash.

TO THE BUSINESS MAN



Buying Right means to the builder the difference between making Real Money and just breaking even.

No builder ever made a permanent success using cheap materials. But true Economy means getting the *finest possible materials at the best possible prices*. Getting all you can for your money—in Materials—in Advertising value—in Sales help—in Service.

Johnson's Interior Finishes

- Varnishes
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- Undercoats
- Wall Finishes
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Electric Floor Polisher

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Phone: 7-1600
- DENVER
1846 Arapahoe St.
Phone: Main 6959
- DES MOINES
1435 W. 29th St.
Phone: Drake 8233
- DETROIT
3155 Grand River Ave.
Phone: Glendale 4780
- KANSAS CITY
2433 McGee Trafficway
Phone: Grand 5375
- LOS ANGELES
1151 Santee St.
Phone: WE 8701
- LOUISVILLE
115 So. 6th St.
Phone: City 6943
- MILWAUKEE
936 Third St.
Phone: Lincoln 912
- NEW ORLEANS
500-06 Magazine St.
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Phone: Hamlock 1150
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2116 Locust St.
Phone: Central 8677
- ST. PAUL
1930 St. Anthony Ave.
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Are You Buying Right?

Consider What Johnson Offers the Builder

- 1 A highly specialized line of the finest Interior Finishes possible to manufacture.
- 2 A long established nationally advertised name—"Johnson Finishes Used" has a world of meaning even to your women clients.
- 3 Service through 20 Factory Branches in all parts of the country.
- 4 ACTUAL WHOLESALE PRICES to the Builder on the regular advertised Johnson line. No special "painter's brand." No small "trade discount"—But real rock-bottom prices on the highest grade materials made.

Clip this coupon to your letter-head or business-card

S. C. JOHNSON & SON,
Dept. A. B. 10, Racine, Wis.

Please mail us immediately Wholesale Price List on Johnson's Interior Finishes. Also give details of your FREE offer to builders on the new Johnson Electric Floor Polisher.

Signed.....

(Address given on letter-head or card)

Low Cost Parquetry Flooring

BY a recently patented process parquetry flooring may now be quickly and easily installed at a low cost. The new process does away with the high installation costs and tedious laying of small, individual pieces of flooring. No special requirements are needed for the sub-floor which may be that ordinarily provided for strip flooring.

The principal features of the new flooring are end matching the short lengths of flooring, using a tongue on one end and groove on the other end, and assembling the short lengths in squares and holding them securely in position by gluing them together. The units are furnished in one thickness, 13/16 inch, and in two sizes, 18 inches square and 13½ inches square, outside measurements.



Parquetry Flooring Is Now Obtainable at a Low Cost Because of a Patented Process Which Makes for Easy Laying.

The 18-inch unit is composed of 16 pieces of 2¼-inch face by 9-inch length which, when glued together, make four 9-inch squares, containing 2¼ surface feet. The 13½-inch unit is composed of 12 pieces of 2½-inch face by 6¾-inch length which, when glued together, make four 6¾-inch squares containing 1¼ surface feet. Both size units are furnished with tongues and grooves on all sides which interlock with each other in laying.

All units are run through special machinery which insures perfect matching and uniformity and on the back of each is pasted a sheet of moisture-proof paper. Shipments are made in corrugated boxes which protect the flooring from absorbing moisture. The flooring is made from selected oak of the finest quality and the new process makes it possible to install parquetry flooring at approximately the same cost, it is said, as that of strip flooring, making its use applicable to moderately priced homes.



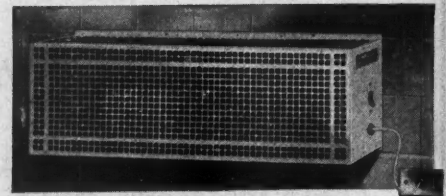
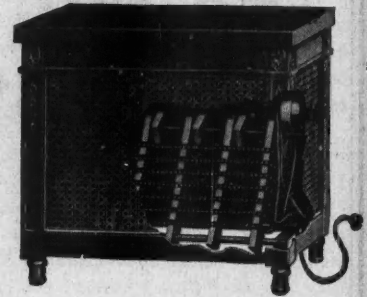
Portable Electric Air Heater

A MANUFACTURER of high grade metal radiator covers has recently brought out a portable electric air heater which has the appearance of a covered radiator but can be moved about as desired and plugged into an electric socket anywhere. It is made entirely of interlocking steel parts and is a highly enameled piece of furniture in beautiful period effects which provides extra warmth where it is needed.

The heating element is scientifically constructed with

stainless metal ribbon curls, rigidly secured on porcelain racks, through which a constant flow of heated air is thrown out into the room, circulating even to the remote corners without wasting any of the heat. These heaters are equipped with humidifiers to keep the proper moisture in the air and so afford a healthful heat.

Four sizes of heater are carried in stock, all having a width of 12 inches. The sizes are 22 inches long by 20 inches high, 40 by 20 inches, 22 by 32 inches and 40 by 32 inches. The body is of the same quality and finish as this company's standard radiator covers. A heavy duty, three-heat switch is mounted inside the body with a special operating knob on the outside which shows the switch position without stooping.



Electric Heaters Resembling Covered Radiators but Which Can Be Moved to Any Place Where Needed.

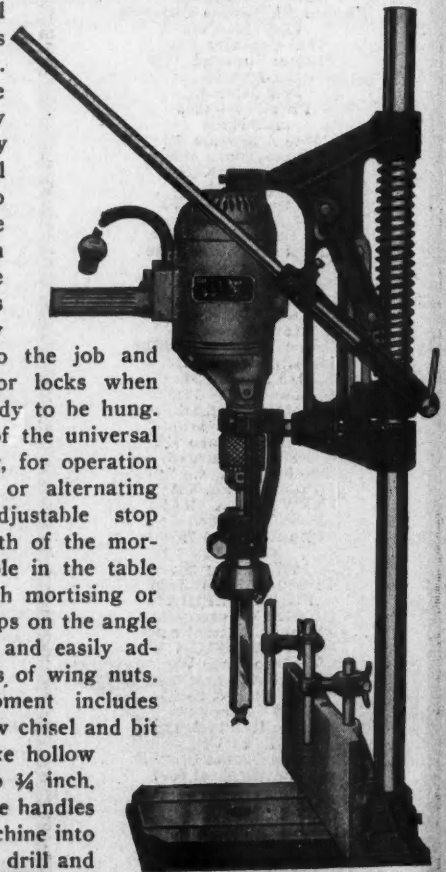
✦

Portable Bench Mortiser

THE announcement of this mortising machine states that it has been brought out in response to a demand for a light, portable, electric, bench mortiser which is powerful and adapted to various kinds of mortising work. With this machine the carriage may be swung laterally about the vertical column so as to extend over the edge of the bench in which the base is bolted. Thus contractors may carry the tool to the job and mortise their door locks when the doors are ready to be hung.

The motor is of the universal type, ball bearing, for operation on either direct or alternating current. An adjustable stop regulates the depth of the mortise, while the hole in the table allows for through mortising or boring. The clamps on the angle plate are quickly and easily adjustable by means of wing nuts.

Standard equipment includes one ⅜-inch hollow chisel and bit and collars to take hollow chisels from ¼ to ¾ inch. The spade and side handles to convert the machine into a portable electric drill and 10 feet of cable with attachment plug are also furnished.



A Light, Portable, Bench Mortiser Adapted to All Kinds of Mortising Work.



For Clearer Vision Specify *Libbey-Owens*

FLAT-DRAWN SHEET GLASS

There is a decided trend to Libbey-Owens flat-drawn sheet glass for windows.

This growing preference is due to the fact that architects, builders, woodworkers and glazers keenly desire a glass that is truly flat and of uniform thickness.

Libbey-Owens glass assures them these superiorities and many others because of the exclusive process used to produce it.

The glass is drawn in flat continuous sheets from the molten state.

The slow annealing removes internal strain, which greatly increases strength.

The additional strength, the uniform thickness and the absence of bow reduce the possibility of breakage in cutting and save time and labor in glazing.

Furthermore, a Libbey-Owens window is a good-looking window because the glass is beautifully clear and of high lustre.

For the best results always specify Libbey-Owens.

It is no longer a question of "just window glass." The public is learning to identify quality in glass by name. Full page advertisements in such national publications as Saturday Evening Post are carrying the message of Libbey-Owens superiority to millions of readers every month.

THE LIBBEY-OWENS SHEET GLASS COMPANY
TOLEDO, OHIO

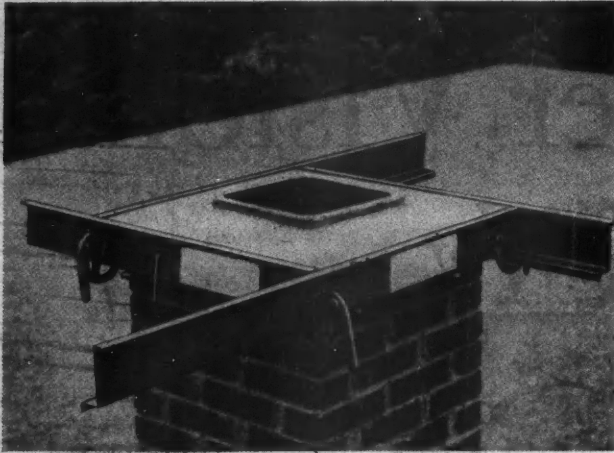
LIBBEY-OWENS FLAT-DRAWN CLEAR SHEET GLASS FOR WINDOWS

Distributed Through Representative Glass Jobbers and Used by Sash and Door Manufacturers Everywhere

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Concrete Chimney Cap Forms

USING this adjustable steel form, it is said that you can turn out a concrete chimney cap in eight minutes. The form is light in weight, simple to operate and prac-



It Is Stated that with This Form a Concrete Chimney Cap Can Be Cast in Eight Minutes.

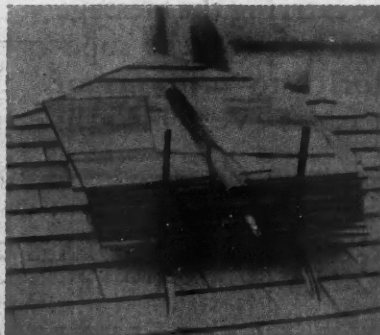
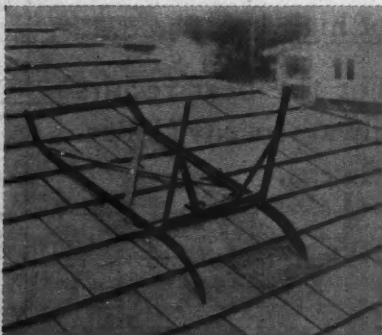
tically indestructible. It does away with the usual trouble of cast chimney caps. Two men only are required to operate the form and because of its simplicity it does not require particular skill or experience to turn out a good job. One feature is a drip edge which makes possible a perfect drip edge cap. These forms are low in original cost and because of the time they save in forming concrete chimney caps they are an economical piece of equipment for the contractor.

Convenient Shingle Holder

HERE is a device for holding a bundle of shingles on the roof while shingling that is a time and labor saver for contractors and carpenters. This device always stays where it is put, no matter how steep the roof, and can be used below or above the toe holds. When you have run your courses three feet or more above your toe hold and the shingle holder is empty, simply bring it down to the toe hold, lay a new bundle of shingles on it and slide it back to a place above your work. There is no need to crawl up the roof to place your bundle of shingles.

It is especially adapted for tight sheathing, and is excellent for holding asphalt shingles. It can also be used for holding boards while sheathing the roof. A spring attachment holds the shingles in windy weather. No shingles flying about; they are there at hand at all times.

This device is light in weight, weighing only six pounds, but of substantial construction. It is made of angle and flat iron securely riveted and should last a lifetime, it is stated. It is finished in black Japan and is sold in sets of



A Shingle Holder Like This Is a Great Help to the Shingler and May Be Used for Sheathing Also.

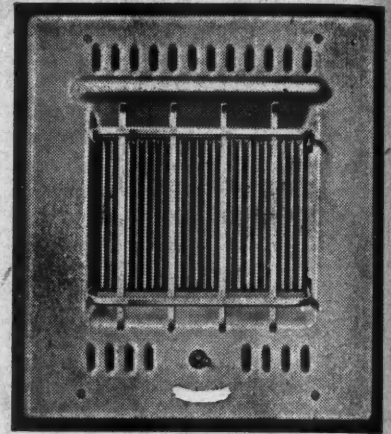
six or in smaller lots. A set of six places bundles of shingles at various intervals so that workmen will be required to reach only a short distance and is sufficient for an average roof.

Enameled Electric Wall Heaters

AS shown in the illustration, electric, wall insert heaters, for bathrooms, are obtainable in white vitreous enamel finished to match the other bathroom fixtures. These heaters are of two types, the reflector type and the non-reflector type. The former are made in two sizes, 650 watts and 1,000 watts, and for use with either 110 or 220-volt current. The non-reflector type is made in 1,000 and 2,000-watt sizes and for either 110 or 220 volts.

These heaters, finished as they are, will not catch dirt or dust and are easily kept clean and attractive. It is stated that water thrown on the heater while in operation will not injure it. The wall opening into which the heater is fitted varies with style and size, being, for the non-reflector, 3 inches deep, 11½ inch wide and 13½ or 20¼ inches high, and for the reflector type 3¼ by 12¼ by 12¼ and 3¼ by 16½ by 20 inches.

An extra charge is made for baffle plate heaters and heaters furnished in other than standard finishes or voltages.



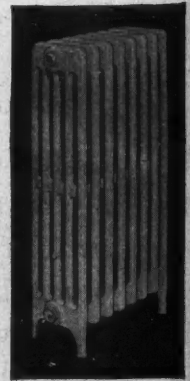
These Wall Heaters Are Finished in White Enamel to Match the Other Bathroom Fixtures.

New and Efficient Radiators

"THE finest and most efficient radiator we have ever produced" is the way in which the manufacturer of this new design has described it. Its efficiency is based on the principle that air movement is a greater factor in radiator efficiency than temperature difference and that radiators of low heights and narrow sections have a higher heating value. For this reason the new design combines small tubes and generous air passages.

Regular floor radiators, in this design, are made in the three, four, five and six-tube styles. Wall radiators in three, four, five and six-tube styles are also supplied and also a seven-tube window radiator in three different heights. All of the radiators are supplied for steam or water heat and specially tapped radiators, for vapor or vacuum systems may be obtained to order.

In the three-tube radiator extreme narrowness with unusual stability on its feet is the outstanding feature, the four-tube style meets the demand for maximum footage where installation conditions require narrow radiation, the five-tube style features an unusual amount of surface per section while the six-tube offers mass radiation.



A New, Improved Type of Radiator.

DISTRIBUTORS' DIRECTORY

Near-by Points Where Many Nationally Advertised Building Commodities Are Carried In Stock or Where Orders Can Be Conveniently Placed.

Use This Directory for Prompt Service—Consult Nearest Address

Brings Buyers and Sellers Together

The American Builder, recognized as the leading publication of greatest influence with the active men and buyers of the Building Industry, has undertaken this Directory Service for the purpose of bringing together the dealer distributors and the principal buyers of the thousand and one commodities that are needed every day to build, equip, finish and furnish the modern homes, apartments, public and business buildings which the American Builder readers are planning and building.

Their Directory Number will shorten the distance and straighten the line between the interested builder, architect or owner and his nearest source of supply. It will cut out lost motion and much "follow-up" expense. It will bring together

quickly the prospective buyer and the dealer who can show the goods and fill the orders.

The map on our Front Cover shows every important distributing center. The building industry is highly motorized and contractors are accustomed to drive many miles to pick up specialties. It is a wonderful service to the entire building industry—to both readers and advertisers—to have the names and addresses of many of the advertisers' local distributors and branch offices thus made known to our readers.

For any addresses not listed here, our readers should write the home office of the manufacturer, or to the American Builder Information Exchange, 1827 Prairie Ave., Chicago.

A.B.C. Boiler Corp.
342 Madison Ave., New York, N. Y.
PRODUCTS
Manufacturers of Cast Iron Heating Boilers.
TRADE NAMES
ABCO
GENERAL SALES OFFICE
NEW YORK
New York:—343 Madison Ave.
MILLS AND FACTORIES
Poughkeepsie, N. Y.

Acetol Products, Inc.
21 Spruce St., New York
PRODUCT
Cello-Glass (a glass substitute)

Ackerman-Johnson Co.
625 W. Jackson Blvd., Chicago, Ill.
PRODUCT
Expansive Screw Anchors

Frank Adam Electric Co.
St. Louis, Mo.
PRODUCT
Panel Boards for Electric Lighting

Ajax Building Bracket Co.
1551 Rydal Mount Rd., Cleveland Heights, Ohio
PRODUCT
Folding Metal Roofing Bracket

Allen Air-Turbine Ventilator Co.
Howard and 14th Sts., Detroit, Mich.
PRODUCTS
Allen Turbine Ventilators, Allen Window Ventilators.
TRADE NAMES
"Allen Turbine Ventilators"
"Allen Window Ventilators"

MILLS AND FACTORIES
MICHIGAN
Detroit:—14th and Howard Sts.
DISTRIBUTORS OR JOBBERS
Distributors in principal cities.

Allmetal Weatherstrip Co.
221 W. Illinois St., Chicago, Ill.
PRODUCT
Weatherstrips

A. S. Aloe Co.
St. Louis, Mo.
PRODUCT
Convertible Levels, Saw Blgs, Mixers

Alpha Portland Cement Co.
Easton, Pa.
PRODUCT
Portland Cement

Ambastone Co.
Otis Bldg., Philadelphia, Pa.
PRODUCT
Flagstones

American Blue Print Paper Co.
445 Plymouth Court, Chicago, Ill.
PRODUCTS
Surveying Instruments and Builders' Levels, Drawing Materials, Blue Print Papers, and Drawings Reproduced by Any Process.

IMPORTANT RETAIL DEALERS
Akron, O.:—Blue Print Supply Co., 121 So. High St.
Canton, O.:—City Blue Print Service Co., 116 McKinley Ave., N. W.
Columbus, O.:—Franklin Blue Print Supply Co., 124 E. State St.
Dallas, Tex.:—J. J. Johnson.
Denver, Colo.:—Pick Drafting & Blue Print Co., 219 Quincy Bldg.
Milwaukee, Wis.:—David White Co., 315 Court St.
Toledo, O.:—Blue Print Service Co., 225 St. Clair St.
Tulsa, Okla.:—Tulsa Engineering & Supply Co., 122 W. 3d St.

American Cable Co., Inc.
105 Hudson St., New York
PRODUCT
Preformed Wire Rope

American Cement Machine Co.
Keokuk, Iowa
PRODUCT
Concrete Mixers

TELL THE ABOVE COMPANIES YOU SAW IT IN AMERICAN BUILDER

American Chime Clock Co.
1665 Ruffner St., Philadelphia, Pa.
PRODUCT
Plans and Works for Grandfathers' Clocks

American Device Mfg. Co.
4523 Shaw Ave., St. Louis, Mo.
PRODUCTS
Built-in Residence Mail Chutes.
TRADE NAMES
"Deliver-Collect"
"Universal"

SALES OFFICES AND AGENCIES
CALIFORNIA
Los Angeles:—400 Metropolitan Bldg.
MISSOURI
St. Louis:—4523 Shaw Ave.
MILLS AND FACTORIES
St. Louis, Mo.

DISTRIBUTORS OR JOBBERS
CALIFORNIA
Los Angeles:—Groth-Cage Co., 600 Metropolitan Bldg.

American Face Brick Assn.
1763 Peoples Life Bldg, Chicago, Ill.
PRODUCT
Face Brick

American Floor Surfacing Machine Co.
528 So. St. Clair St., Toledo, Ohio.
PRODUCTS

Electric Wood Floor Surfacing Machines, Electric Terrazzo and Concrete Grinding Machines and Electric Waxing, Polishing and Floor Maintenance Machines.

TRADE NAMES
"American Universal"
"American"
HOME OFFICE AND FACTORY
Toledo, Ohio.

FACTORY—BRANCH SALES OFFICES AND AGENCIES

CALIFORNIA
Los Angeles:—1735 Venice Blvd.
San Francisco:—3645 Geary St.

GEORGIA
Atlanta:—329 Spring St. N. W.

ILLINOIS
Chicago:—21 So. Lincoln St.
Rock Island:—1203 3rd Ave.

MARYLAND
Baltimore:—2402 Frederick Ave.

MASSACHUSETTS
Boston:—1151 Commonwealth Ave.

MICHIGAN
Detroit:—518 Forest Ave. E.

MINNESOTA
St. Paul:—2476 University Ave.

MISSOURI
Kansas City:—12 E. 16th St.
St. Louis:—704 No. Euclid Ave.

NEW YORK
Buffalo:—1472 Main St.
Syracuse:—405 Irving Ave.

OHIO
Cincinnati:—1608 Race St.
Cleveland:—3513 St. Clair St.
Toledo:—528 S. St. Clair St.

PENNSYLVANIA
Philadelphia:—2613 Lancaster Ave.
Pittsburgh:—5329 Penn Ave.

TEXAS
Dallas:—307 So. Market St.

WISCONSIN
Milwaukee:—519 North Ave.

CANADA
The A. E. William Co., Ltd.
Winnipeg, Man., Canada:—O. P. R. Subway—764 Main St.

Vancouver, B. C., Canada:—495 Railway St.
Toronto, Ont., Canada:—446 Front St. W.
Montreal, Que., Canada:—326 St. James St.

American Gypsum Co.
Port Clinton, Ohio
PRODUCT
Wall Board

American Heating & Lighting Co.
Morenci, Mich.
PRODUCT
Gas Producers

American Radiator Co.
40 W. 40th St., New York
PRODUCT
Heating Systems of All Kinds

American Saw Mill Machinery Co.
60 Main St., Hackettstown, N. J.
PRODUCT
Woodworking Machinery

American Sheet & Tin Plate Co.
Frick Bldg., Pittsburgh, Pa.
PRODUCT
Roofing Tin

American Steel & Wire Co.
268 S. LaSalle St., Chicago, Ill.
PRODUCT
Wire Fabric for Reinforcing

American Stove Co.
Lorain, Ohio
PRODUCT
Oven Regulators

American Technical Society
Drexel Ave. and 58th St., Chicago, Ill.
PRODUCT
Books on Building and Architecture

Anchor Mfg. Co.
2131 Turner Ave. Chicago, Ill.
PRODUCT
All-Steel Mixing Boxes

Andersen Lumber Co.
Bayport, Minn.
PRODUCT
Millwork

Andrews Heating Co.
401 26th Ave., S. E., Minneapolis, Minn.
PRODUCT
Heating Systems, Plumbing Fixtures

Angel Novelty Co.
Fitchburg, Mass.
PRODUCTS

Builders' Finish, Ironing Board Cabinets, Medicine Cabinets, Kitchen Shelves, Drawer Cases, Kitchen Cabinets, Breakfast Nook Sets, Stair Newels and Balusters, Bookcase Colonnades, Cupboard Doors.

TRADE NAMES
Angel Products

Anti-Hydro Waterproofing Co.
265-269 Badger Ave., Newark, N. J.
PRODUCT
Waterproofing

Arch Roof Construction Co.
104 W. 42nd St., New York, N. Y.
PRODUCT
Arch Roof Spans

Arkansas Oak Flooring Co.
Pine Bluff, Ark.
PRODUCT
Oak Flooring

Associated Tile Mfrs.
220 Graybar Bldg, New York
PRODUCT
Floor and Wall Tile

Asbestos Shingle, Slate and Sheathing Co.
Ambler, Pennsylvania
PRODUCTS

Ambler Asbestos Shingles, Asbestos Corrugated Sheathing, Ebonized Ambler Asbestos Lumber and all Fireproof Asbestos Products.

SALES OFFICES AND AGENCIES
Boston
Buffalo
Chicago
Cleveland
Detroit
Minneapolis
New York
Philadelphia
Pittsburgh
Washington
Wilkes-Barre
St. Louis

MILLS AND FACTORIES
Ambler, Penna.
St. Louis, Missouri.

DISTRIBUTORS OR JOBBERS
San Francisco, Calif.:—H. G. Sperry Co.
Los Angeles, Calif.:—Farrington Engineering Company.
Birmingham, Ala.:—Dixie Asbestos Co.

Atlas Weatherstrip Co.
3843 W. 16th St., Chicago, Ill.
PRODUCT
Weatherstrips.

Austral Window Co.
101 Park Ave., New York
PRODUCT
Sash Holders

Bangor Slate Association
Bangor, Pa.
PRODUCT
Roofing Slate

Banks Steel Post Co.
128 Wakeman Ave., Newark, N. J.
PRODUCT
Removable Steel Clothes Posts

Barber Asphalt Co.
1600 Arch St., Philadelphia, Pa.
PRODUCT
Asphalt Shingles

Barnes Lock & Sash Holder Co.
1505 N. Illinois St., Indianapolis, Ind.
PRODUCT
Sash Holders and Locks

Bates Expanded Steel Truss Co.
East Chicago, Ind.
PRODUCT
Truss Joists

The William Bayley Co.
Springfield, Ohio.
PRODUCTS

Steel Windows with Horizontally Pivoted Ventilators; Steel Windows for Basements; Utility Windows; Residence Casements; Continuous Windows; Mechanical Operators, and Doors.

TRADE NAMES
Bayley-Springfield

SALES OFFICES AND AGENCIES
Boston, Mass.:—73 Tremont Street.
New York City:—67 West 44th St.
Chicago, Ill.:—3200 Strauss Bldg., 310 S. Michigan Ave.
Atlanta, Ga.:—1243 Peachtree St., N. E. Suite F-4.

Beaver Products Co.
Military Road, Buffalo, N. Y.
PRODUCT
Plaster Wall Board

Beckman-Dawson Roofing Co.
223 Jackson Blvd., Chicago, Ill.
PRODUCTS
Winthrop Tapered Asphalt Shingles.

L. Beckmann Co.
1004 Jackson St., Toledo, Ohio
PRODUCT
Convertible Levels

Berger Mfg. Co.
Canton, Ohio
PRODUCTS
Diamond Mesh and Ribplex Metal Lath, Metal Lumber Steel Joists and Studs, Floor Cores, Channels, Corner Bead, Cornerite, Steel Basement Windows, Metal Trim, Lockers.
TRADE NAMES

Berloy Ribplex
BRANCH OFFICES
New York San Antonio
Long Island City Roanoke
Albany St. Louis
Rochester Cincinnati
Newark, N. J. Detroit
Philadelphia Pittsburgh
Boston Columbus
Chicago Milwaukee
Minneapolis St. Francisco
Kansas City Los Angeles
Dallas Atlanta
Jacksonville Seattle
Houston

MILLS AND FACTORIES
Canton, O.:—1038 Belden Ave., N. E. Massillon, O.

CANADIAN AND FOREIGN DISTRIBUTORS
Export Dept.:—518 W. 25th St., New York.

Bertelsen Adjustable Grille Co.
2119 South Troy St., Chicago, Ill.
PRODUCT
Grilles

Bessler Disappearing Stairway Co.
Akron, Ohio.
PRODUCTS
Bessler Disappearing Stairway.
BRANCH SALES OFFICE
NEW YORK
New York:—71-73 Murray St.
RETAIL DEALERS
All lumber and building supply dealers in the United States.

Frank S. Betz Co.
Hammond, Ind.
PRODUCT
Bathroom Cabinets, Radiator Covers

Binks Spray Equipment Co.
3114 Carroll Ave., Chicago, Ill.
PRODUCTS
Portable Spray Painting Equipment.
SALES OFFICES AND AGENCIES
CALIFORNIA
San Francisco:—372 Fifth St.
ILLINOIS
Chicago:—3114 Carroll Ave.
MICHIGAN
Detroit:—7306 Fourteenth Ave.
NEW YORK
New York:—5659 Warren St.
CANADIAN AND FOREIGN DISTRIBUTORS
Alkenhead Hdw., Ltd., Toronto, Can.
Faucher Filis Ltd., Montreal, Can.
Western Paint Co., Ltd., Winnipeg, Can.
Overseas Motor Service Corp., New York.

Birch Mfrs.
201 F. R. A. Bldg., Oshkosh, Wis.
PRODUCT
Lumber

Bitu-Mortar Waterproofing Co.
280 Madison Ave., New York, N. Y.
PRODUCT
Waterproofing

The Black & Decker Mfg. Co.
Towson, Maryland
PRODUCTS
Portable Electric Drills, Portable Electric Hammers, Electric Bench Grinders, and Electric Bench Saws.
TRADE NAMES

Black & Decker
BRANCH OFFICES
Atlanta, Ga.:—221 Spring St.
Baltimore, Md.:—Towson, Md.
Boston, Mass.:—63 Brookline Ave.
Buffalo, N. Y.:—31 Barker St.
Chicago, Ill.:—549 W. Washington St.
Cleveland, O.:—2080 E. 22nd St.
Dallas, Texas:—211 So. Pearl St.
Detroit, Mich.:—8205 Woodward Ave.
Kansas City, Kan.:—1537 Grand Ave.
Los Angeles, Calif.:—857 So. Don Pedro St.
Minneapolis, Minn.:—518 So. Fourth St.
New York, New York:—461 Eighth Ave.
Oakland, Calif.:—545 E. 10th St.
Philadelphia, Pa.:—1523 Fairmount Ave.
St. Louis, Mo.:—2839 Locust St.
Seattle, Wash.:—514 Virginia Ave.

CANADIAN AND FOREIGN DISTRIBUTORS
Toronto, Ont., Can.:—96 Church St.
London, Eng.:—Slough, Bucks.

W. B. & J. E. Boice
Toledo, Ohio
PRODUCT
Woodworking Machinery

Bommer Spring Hinge Co.
Brooklyn, N. Y.
PRODUCT
Hinges and Door Springs

The Bostwick Steel Lath Co.
Niles, Ohio
PRODUCTS
Bostwick "Truss-Loop" Metal Lath, Standard Painted; Bostwick "Truss-Loop" Metal Lath, Galvanized; Bostwick "Niles" Expanded Lath; Bostwick "Lock" Corrugated, Self-Furring Lath; Bostwick 3/4" Rib Expanded Metal Lath; Bostwick "Truss-V-Rib" Metal Lath; Bostwick Cold Rolled Steel Channels; Bostwick Metal Wall Plugs; Bostwick Cornerite; Bostwick "Truss-Wing" Corner Bead; Bostwick Standard Corner Bead; Bostwick Expanded Corner Bead; Bostwick Rail Bead with Clips; Bostwick Metal Base Bead; Bostwick Invisible Picture Moulding.

Bovee Furnace Works
50 W. 8th St., Waterloo, Iowa
PRODUCT
Warm Air Furnaces

John Boyle & Co., Inc.
112-114 Duane St., New York, N. Y.
PRODUCTS
Roof and Deck Cloth.

Bradley, Miller & Co.
1200 Marquette St., Bay City, Mich.
PRODUCT
Door and Window Frames

Brasco Manufacturing Co.
5025-55 Wabash Ave., Chicago
PRODUCTS
Copper Store Fronts, Bronze Store Fronts, Rolled Mouldings, Tubing, Angles, Channels, Thresholds, Kickplates, Railings and Door Guards.
TRADE NAMES

Brasco Davis
EASTERN SALES OFFICE AND WAREHOUSE
NEW YORK
Long Island City:—28-14 Wilbur Av.
DISTRIBUTORS OR JOBBERS
Complete stocks at all leading cities. Write for name of nearest distributor or dealer.
CANADIAN AND FOREIGN DISTRIBUTORS
Complete stocks throughout Canada and many foreign countries. Write for list.

George C. Brown & Co.
Memphis, Tenn.
PRODUCT
Cedar Lining for Closets

E. L. Bruce Co.
Memphis, Tenn.
PRODUCT
Oak Flooring

Builders Iron Co., Inc.
207 Orange St., New Haven, Conn.
PRODUCTS
Metal Hatchways, Sidewalk Doors. Everything in Ornamental and Miscellaneous Iron for the Builder.
TRADE NAMES

"Bilco"
SALES OFFICES AND AGENCIES
CONNECTICUT
New Haven.
MILLS AND FACTORIES
New Haven, Conn.

Burnham Boiler Corp.
30 E. 42nd St., Irvington, N. Y.
PRODUCT
Heating Systems

Butler Laboratories, Inc.
4201 Avenue H, Brooklyn, N. Y.
PRODUCT
Window Ventilators

Samuel Cabot, Inc.
141 Milk St., Boston, Mass.
PRODUCTS
Heat and Sound Insulator, Paints, Specialties, Shingle Stain, Stained Shingles, Wood Preservative.
TRADE NAMES

Cabot Colopakes Conservo *Crescots Flexibloc Quilt*
SALES OFFICES AND AGENCIES
Los Angeles:—Hibernian Bldg.
San Francisco:—444 Market St.
Chicago:—5000 Bloomingdale Ave.
Minneapolis:—650 Builders Exchange.
Kansas City:—3035 E. 19th St.
New York:—101 Park Ave.
Portland:—96 Front St.
Philadelphia:—1009 Real Estate Trust Bldg.
Seattle:—333 Pioneer Bldg.

MILLS AND FACTORIES
Chelsea, Mass.
Chicago, Ill.
DISTRIBUTORS OR JOBBERS
Washington:—Lally-Rohlsder Co.
Jacksonville:—Gill & Mulholland.
New Orleans:—Jahncke Service, Inc.
Baltimore:—National Bldg. Supply Co.
St. Louis:—Hunkins-Willis Lime & Cement Co.
Cincinnati:—Cincinnati Builders Supply Co.
Cleveland:—Standard Bldg. Materials Co.
Cleveland:—Cleveland Window Glass & Door Co.
Tulsa:—Builders Supply Company.
Pittsburgh:—Houston Brothers Co.
Memphis:—Fischer Lime & Cement Co.
Houston:—W. L. Macatee & Sons.
Dallas:—W. L. Macatee & Sons.

Canadian Pacific R'y.
Montreal, Quebec, Canada
PRODUCT
Transportation

The Carborundum Company
Box 337, Niagara Falls, N. Y.
PRODUCTS
Carborundum Sharpening Stones.

R. L. Carter Co., Inc.
Phoenix, N. Y.

PRODUCTS
-Portable Light Socket Woodworking Machinery.

SALES OFFICES AND AGENCIES

Atlanta, Ga.:—19 Spring St. N. W.
Boston, Mass.:—1007 Little Bldg.
Chicago, Ill.:—646 W. Washington Boul.
Cincinnati, O.:—6035 Cary Ave.
Cleveland, O.:—12231 Clifton Boul.
Dallas, Tex.:—6210 Palo Pinto St.
Denver, Colo.:—405 14th St.
Detroit, Mich.:—2500 Huribut St.
Indianapolis, Ind.:—215 N. Mount St.
Los Angeles, Calif.:—304 Crocker St.
Milwaukee, Wis.:—3205 Vine St.
Minneapolis, Minn.:—Builders Exchange.
New York, N. Y.:—258 Broadway.
Philadelphia, Pa.:—Bourse Bldg.
St. Louis, Mo.:—Hotel Claridge.
Syracuse, N. Y.:—248 W. Genesee St.
Wichita, Kan.:—705 No. Main St.

CANADIAN DISTRIBUTORS

Toronto, Ont.:—442 Milverton Boul.

Casement Hardware Co.
402-A N. Wood St., Chicago, Ill.
PRODUCT
Casement Hardware

Ceco Weatherstrip Co.
Division of Concrete Engr. Co.,
Chicago, Ill.

PRODUCT
Weatherstrips

Century Electric Co.
St. Louis, Mo.

PRODUCTS

Century Motors of the following types:
Repulsion Start Induction Single Phase
Motors, Squirrel Cage Induction Poly-
phase Motors, Double Squirrel Cage In-
duction Polyphase Motors (High Torque),
Double Squirrel Cage Induction Polyphase
Motors (Normal Torque), Automatic Start
Induction Polyphase Motors, Split Phase
Induction Single Phase Motors, Direct Cur-
rent Motors. Century Fans of the follow-
ing types: Portable, Ventilating and
Ceiling.

SALES OFFICES

CALIFORNIA
Los Angeles:—10th and Hope Sts.
San Francisco:—171-173 Second St.
COLORADO
Denver:—1435 Lawrence St.
GEORGIA
Atlanta:—Marietta and Broad Sts.
ILLINOIS
Chicago:—208-210 W. Washington St.
IOWA
Davenport:—404 Kahl Bldg.
Des Moines:—412 Seventh St.
LOUISIANA
New Orleans:—226 Carondelet St.
MASSACHUSETTS
Boston:—10 High St.
MICHIGAN
Detroit:—Fort and Griswold Sts.
MINNESOTA
Minneapolis:—419 Second Ave.
MISSOURI
Kansas City:—417 E. 13th St.
St. Louis:—1806 Pine St.
NEW YORK
New York:—50 Church St.
Rochester:—East Main and St. Paul Sts.
OHIO
Cincinnati:—431 Walnut St.
Cleveland:—14th St. and Euclid Ave.
PENNSYLVANIA
Philadelphia:—16th and Sansom Sts.
Pittsburgh:—104 Sixth St.
TEXAS
Dallas:—Main and Lamar Sts.
UTAH
Salt Lake City:—124 West 2nd South St.
WASHINGTON
Seattle:—616 Second Ave.
Spokane:—167 S. Wall St.

Chain Belt Co.
721 Park St., Milwaukee, Wis.
PRODUCT
Concrete Mixers

Chain Products Co.
Cleveland, Ohio
PRODUCT
Sash Chain

Wayvell Chappell & Co.
38-40 Jackson St., Waukegan, Ill.
PRODUCT
Floor Surfacing Machines

Chicago Spring Hinge Co.
1500-1502 Carroll Ave., Chicago, Ill.
PRODUCT
Hinges and Door Springs

Chicago Technical College
118 E. 26th St., Chicago, Ill.
PRODUCT
Building Instruction

Cincinnati Iron Fence Co.
3331 Spring Grove Ave., Cincinnati, O.
PRODUCT
Iron Railings, Fences, Window Guards

Clamp Nail Co.
4540 Palmer St., Chicago, Ill.
PRODUCT
Clamp Nails

Clarke Sanding Machine Co.
3815-3825 Cortland St., Chicago, Ill.
PRODUCTS

Clarke Vacuum Portable Sander, Clarke
Universal Portable Saw, Clarke Vao-All
Electric Cleaner.

SALES OFFICES AND AGENCIES
Representatives in all principal cities.

Clay Products Assn.
Chamber of Commerce Bldg, Chicago,
Ill.

PRODUCT
Vitrified Clay Products

Clinton Metallic Paint Co.
50 Clinton Road, Clinton, N. Y.
PRODUCT
Mortar Colors

E. D. Coddington Mfg. Co.
North Milwaukee, Wis.
PRODUCT
Patent Insulated Plaster Base

**Colgan Machinery & Supply
Co.**

Columbus, Ohio
PRODUCT
Door Lock Mortisers

Colonial Fireplace Co.
4604 Roosevelt Road, Chicago, Ill.
PRODUCTS

Colonial Fireplace Damper, "Glo-Hot"
Electric Heating Fireplace Grate, Complete
Fireplace Furnishings.

**LEADING DISTRIBUTORS AND
DEALERS**

Little Rock:—Arkansas Foundry Co.
Los Angeles:—Harris Bros.
Denver:—Denver Mantel & Tile Co.
Boise:—Idaho Hardware & Plumbing Co.
Indianapolis:—Van Camp Hdwe. & Iron
St. Louis:—Schurk Iron Wks.
Omaha:—Sunderland Bros.
Buffalo:—Jones Iron Works.
Yakima:—A. B. Fosseen & Co.

Colonial Hardware Mfrs.
176 N. Clinton St., Chicago, Ill.
PRODUCT
Mail Boxes

**Columbus Union Oil Cloth
Co.**
Columbus, Ohio
PRODUCT
Permanent Wall Coverings

**Combination Woodworking
Machine Co.**
551 W. Randolph St., Chicago, Ill.
PRODUCT
Woodworking Machinery

**The Common Brick Mfra.
Assn. of America**
2121 Guarantee Title Bldg., Cleveland,
Ohio
PRODUCTS
Common Brick.

SALES OFFICES AND AGENCIES
Service from member manufacturers
everywhere and the following district
offices:

CHICAGO:—G. E. Miller, Secy.-Mgr., 229
No. LaSalle Street, Chicago.
COLORADO:—P. L. Cocks, Secy., 1728
Stout Street, Denver.
CONNECTICUT:—C. W. King, Secy.-Mgr.,
226 Pearl Street, Hartford.
DETROIT:—Chas. A. Bowen, Secy.-Mgr.,
400 U. S. Mortgage Trust Bldg., Detroit.
MASSACHUSETTS:—Wesley E. Warren,
Secy., 11 Beacon Street, Boston.
NEW YORK:—Floyd W. Flint, Secy.-Mgr.,
1716 Grand Central Terminal, New
York City.
NORFOLK, VA.:—J. A. Pugh, Mgr., 119
W. Plume Street.
OHIO:—Glenn W. Bittel, Secy.-Mgr., 2124
Guarantee Title Bldg., Cleveland.
PACIFIC-NORTHWEST:—W. J. Howard,
Secy., 915 Arctic Bldg., Seattle, Wash.
M. E. Kelly, 908 Lewis Bldg., Portland,
Ore.
PHILADELPHIA:—Arthur B. Murphy,
Secy.-Mgr., 121 N. Broad St., Philadel-
phia.
PITTSBURGH:—Clarence Scavers, Secy.,
702 First National Bank Bldg., Pitts-
burgh.
UTAH-IDAHO:—E. A. Hart, Secy.-Mgr.,
301 Atlas Block, Salt Lake City, Utah.
List of members supplied on application.

Concealed Bed Corp.
813 Garland Bldg., Chicago, Ill.
PRODUCT
Concealed Beds

Concrete Equipment Co.
500 Ottawa Ave., Holland, Mich.
PRODUCT
Molds for Concrete Products

Concrete Form Tie Corp.
134 Sixth Ave., Homestead, Pa.
PRODUCTS
Locktite Bridging and No Nail Concrete
Form Ties.

TRADE NAMES
"Locktite" Concrete Form Ties
SALES OFFICES AND AGENCIES
PENNSYLVANIA
Homestead:—134 Sixth Ave.

**T. E. Conklin Brass & Copper
Co., Inc.**
54-60 Lafayette St., New York, N. Y.

PRODUCTS
Brass Pipe, Sheet and Roll Copper,
Architectural Bronze in all shapes, Bronze
and Copper Screen Cloth.

TRADE NAMES
"Tecco Brand"
SALES OFFICES AND AGENCIES
NEW YORK
New York City:—54-60 Lafayette St.

Consolidated Concrete Machinery Corp.

Adrian, Michigan
PRODUCT
 Concrete Products Machinery

Consolidated Expanded Metal Companies

Wheeling, W. Va.
PRODUCTS
 Metal Lath, Arch Lath, Diamond Mesh Lath and Stucco Binder.
TRADE NAMES

Steelcrete
SALES OFFICES AND AGENCIES
 New York:—103 Park Ave.
 Philadelphia:—1075 Germantown Ave.
 Pittsburgh:—Oliver Bldg.
 Boston:—201 Devonshire St.
 Buffalo:—50 Wecker Ave.
 Chicago:—2531 Arthington St.
 Cleveland:—9013 Elk Ave.
 Atlanta:—232-240 Marietta St.
 St. Paul:—1429 Marshall Ave.

CANADIAN AND FOREIGN DISTRIBUTORS
 152½ W. 42nd St., New York.

Consolidated Shingle Mills of British Columbia, Ltd.

907-B Metropolitan Bldg., Vancouver, B. C.
PRODUCT
 Red Cedar Shingles

Construction Machinery Co.

Waterloo, Iowa
PRODUCT
 Concrete Mixers, Pumps, Hoists

Continental Screen Co.

1323 Book Bldg., Detroit, Mich.
PRODUCTS
 Screen Doors, Window Screens, Combination Screen & Storm Doors, Full Size Window Screens, Metal Frame Ventilators, Wood Frame Ventilators and K. D. Frames.

TRADE NAMES
 "Continental" "Wabash" "Porter"
 "Owosso" "Philadelphia"
MILLS AND FACTORIES
 Owosso Mfg. Co., Owosso, Mich.
 Wabash Screen Door Co., Minneapolis.
 Philadelphia Screen Mfg. Co., Philadelphia.
 Wabash Screen Door Co., Memphis, Tenn.
 Porter Screen Co., Burlington, Vt.

Con-Tee Company

Kansas City, Mo.
PRODUCT
 Weatherstrips

Coppes Bros. & Zook

Nappanee, Ind.
PRODUCTS
 Manufacturers of the Nappanee Dutch Kitchenet line of kitchen and pantry equipment including kitchen cabinets, butler units, refrigerator cabinets, broom closets, dish cupboards, refrigerators, top cupboards, cabinet bases, divider cupboards, wall cupboards and stove combination: in styles and sizes to fit any space and any arrangement of doors and windows.

TRADE NAMES
 "Nappanee"
SALES OFFICES
 ILLINOIS
 Chicago:—Kechn Bldg., 308 N. Michigan.
 MICHIGAN
 Detroit:—General Motors Bldg.
 NEW YORK
 New York:—415 Lexington Ave.
IMPORTANT RETAIL DEALERS
 Agents in all principal cities.

Cornell Wood Products Co.

190 N. State St., Chicago, Ill.
PRODUCT
 Wall Board

Crane Company

836 S. Michigan Ave., Chicago, Ill.
PRODUCT
 Bathroom Equipment, Plumbing Fixtures

The Crescent Machine Co.

224 Main St., Leetonia, Ohio
 Leetonia, Ohio
PRODUCTS
 Wood Working Machinery, Universal Wood Workers, Shapers, Cut-off Saws, Saw Tables, Mortisers, Jointers, Swing Saws, Borers, Tenoners.

TRADE NAMES
 Crescent
MILLS AND FACTORIES
 The Crescent Machine Company, Leetonia, Ohio.
CANADIAN AND FOREIGN DISTRIBUTORS
 The Crescent Machine Co., 29 Broadway, New York, N. Y.
IMPORTANT RETAIL DEALERS
 Progressive machinery dealers in all important cities of the world sell Crescent Wood Working Machines.

Crittall Casement Window Co.

10951 Heam, Detroit, Mich.
PRODUCT
 Steel Casement Windows

J. B. Crofoot

P. O. Box 783, Chicago, Ill.
PRODUCT
 Screen Tacking Machines

The Cromar Company

Williamsport, Pa.
PRODUCTS
 Cromar Factory Finished Oak Flooring. (Factory Finished means: Completely scraped, filled, varnished, waxed, moisture-proofed and crated at the factory—ready to use the minute the last nail is driven.)

The Crowe Mfg. Corp.

225-229 East Third St., Cincinnati, O.
PRODUCTS
 Portable Power Hand Saws for Air and Electricity.

TRADE NAMES
 "Crow Safety Saw"
SALES OFFICES AND AGENCIES
 OHIO
 Cincinnati:—225-229 East Third St.
 Representatives in all cities.
MILLS AND FACTORIES
 Covington, Ky., and Cincinnati, Ohio.

Thomas F. Cullinan

1495 Broad St., Providence, R. I.
PRODUCT
 Stake Irons, Brackets and Truck Bodies.

Curtis Companies, Inc.

Clinton, Iowa
PRODUCTS
 Doors, Windows, Complete Entrances, Frames, Exterior Woodwork, Interior Trim, Stair Parts, Cabinet Work.

TRADE NAMES
 Curtis Woodwork
SALES OFFICES AND AGENCIES
 Sales Office: 25 West 44th St., New York City, together with manufacturing and distributing organizations listed below.

MILLS AND FACTORIES
 ILLINOIS
 Chicago:—Curtis Door & Sash Co.
 IOWA
 Clinton:—Curtis Companies, Inc.
 Sioux City:—Curtis Bros. & Co.
 Sioux City:—Curtis Sash & Door Co.
 KANSAS
 Topeka:—Curtis, Towle & Paine Co.
 MICHIGAN
 Detroit:—Curtis-Detroit Co.
 MINNESOTA
 Minneapolis:—Curtis-Yale-Holland Co.
 NEBRASKA
 Lincoln:—Curtis, Towle & Paine Co.
 WISCONSIN
 Wausau:—Curtis & Yale Co.

RETAIL DEALERS
 Curtis dealers will be found in practically every sizable city located east of the Rockies.

Dahlquist Mfg. Co.

South Boston, Mass.
PRODUCT
 Copper Range Boilers.

Davis Tool & Eng. Co.

6525 Lincoln Ave., Detroit, Mich.
PRODUCT
 Garment Hangers

Delco-Light Co.

Dayton, Ohio
PRODUCT
 Lighting Systems

Detroit Steel Products Co.

C-2260 E. Grand Blvd., Detroit, Mich.
PRODUCT
 Steel Windows

The DeVilbiss Co.

238 Phillips Ave., Toledo, Ohio
PRODUCTS
 Spray-painting Equipment (See Display Advertisement—Page 204).

BRANCHES
 New York, Chicago, Detroit, Philadelphia, Indianapolis, San Francisco, Pittsburgh, Cleveland, Cincinnati, Milwaukee, St. Louis, Minneapolis, Windsor, Ontario.

De Walt Products Co.

Leola, Pa.
PRODUCTS
 Woodworking Machinery.
TRADE NAMES
 DeWalt Wonder-Worker

The Diamond Metal Weather Strip Co.

408-418 Spruce St., Columbus, Ohio
PRODUCTS
 Metal Weather Strips, Calking Compound and Screen Slides.

TRADE NAMES
 "Diamond"
 "Capitol"
 "U-Put On"
WESTERN FACTORY BRANCH
 Diamond Metal Weather Strip Co., Ft. Dodge, Iowa.

Dietzgen Co., Eugene

166 W. Monroe St., Chicago, Ill.
PRODUCT
 Precision Instruments

Disappearing Stairway Co.

Akron, Ohio
PRODUCT
 Disappearing Stairs

Henry Disston & Sons, Inc.

Philadelphia, Pa.
PRODUCT
 Saws of Every Description

Donley Brothers Co.

13910 Miles Ave., Cleveland, Ohio
PRODUCT
 Fireplaces and Furnishings

W. E. Dunn Mfg. Co.

415 W. 23rd St., Holland, Mich.
PRODUCT
 Concrete Building Tile Machinery

Duro Company

Dayton, Ohio
PRODUCT
 Water Supply Systems

D. A. Ebinger Sanitary Mfg. Co.

180 Lucas St., Columbus, Ohio
PRODUCT
 Kitchen Sinks

The Edwards Mfg. Co.
401-417 Eggleston Ave., Cincinnati, O.

PRODUCTS
Sheet Metal Building Material, Roofings, Metal Shingles, Metal Spanish Tile, Ventilators, Skylights and Marquises.

SALES OFFICES AND AGENCIES

OHIO
Cincinnati:—401-417 Eggleston Ave.
TEXAS
Dallas:—N. E. Cor. Market & Collin.
NEW YORK
New York:—81-83 Fulton St.

MILLS AND FACTORIES
Cincinnati, Ohio.
Dallas, Texas.
Cannonsburg, Penna.

Electric Fireplace Mfg. Co
400-408 N. Union Ave., Chicago, Ill.
PRODUCT
Fireplaces

Electric Rotary Machine Co.
3824 W. Lake St., Chicago, Ill.
PRODUCT
Floor Surfacing Machines

Erie Fixture Supply Co.
Erie, Pa.
PRODUCT
Lighting Fixtures

Esskay Company
622 McCormick Bldg., Chicago, Ill.
PRODUCTS
Portable or Bench Hand saw, Mortiser, Lathe, Disk & Belt Sander, Planer, Router—One Motor Interchangeable with All Machines.

TRADE NAMES
Esskay
DISTRIBUTORS OR JOBBERS
Representation wanted in all cities

Eternit, Inc.
15th and Locust St., Philadelphia, Pa.
PRODUCT
Asbestos Shingles

Excelso Products Corp.
65 Clyde Ave., Buffalo, N. Y.
PRODUCTS
Excelso Water Heaters.
TRADE NAMES

"Excelso"
DISTRIBUTORS OR JOBBERS
Sold by boiler and radiator manufacturers and plumbing and heating supply houses in all leading cities.

Fairbanks-Morse & Co.
900 S. Wabash Ave., Chicago, Ill.
PRODUCT
Water Supply Systems

Farley & Loetscher Mfg. Co.
Dubuque, Iowa.
PRODUCTS
Sash, Doors, Blinds, Frames and Building Woodwork of All Kinds.
TRADE NAMES

"Qualitybilt" Woodwork
"In-the-Door" and "On-the-Wall" Ironing Boards
"Presto" Sliding Disappearing Stairway
"Nikelbond" Standardized Kitchen Units
"Nuart" Raised Panel Doors

SALES OFFICES AND AGENCIES
COLORADO
Denver:—1424 W. Colfax.
DISTRICT OF COLUMBIA
Washington:—615 Bond Bldg. and 1900 Investment Bldg.
ILLINOIS
Chicago:—906 W. Cullerton St.
MISSOURI
Kansas City:—826 Finance Bldg.
UTAH
Salt Lake City:—118 S. 5th West St.

Federal Metal Weatherstrip Co.
4538-58 Fullerton Ave., Chicago, Ill.
PRODUCT
Weatherstrips

Charles Fischer Spring Co.
240 Kent Ave., Brooklyn, N. Y.
PRODUCT
Toggery Backs

Flax-li-num Insulating Co.
St. Paul, Minn.
PRODUCT
Insulation

Flint & Walling Mfg. Co.
32 Harris St., Kendallville, Indiana
PRODUCTS
Domestic Water Service Equipment.
TRADE NAMES
"Hoosier Water Service"

Foley Saw Tool Co.
9-15 N. E. Main St., Minneapolis, Minn.
PRODUCTS
Foley Automatic Saw Filer (Motor and Hand Drive Models), Foley Portable Saw, Foley Planer and Jointer, Foley Wire Stripper, Foley Automatic Hammer Saw Setter.
TRADE NAMES

Foley
SALES OFFICES AND AGENCIES
CALIFORNIA
San Francisco:—Steel Service Co., 1280 Indiana Avenue.
LOS ANGELES:—B. N. Engle, 10233 Woodbine Avenue, Palms Station.
NEW ENGLAND STATES
Barrington, R. I.:—W. P. Tobey, Jr., Bumstick Road.
WASHINGTON
Seattle:—Harrison Sales Co., 300 Lenora St.

CANADIAN AND FOREIGN DISTRIBUTORS
E. C. Atkins & Co., Vancouver, B. C.
Anglo Traders, Ltd., Toronto, Ontario.
IMPORTANT DEALERS

INDIANA
Indianapolis:—E. C. Atkins & Co.
NEW YORK
New York City:—E. C. Atkins & Co.
TENNESSEE
Memphis:—E. C. Atkins & Co.
GEORGIA
Atlanta:—E. C. Atkins & Co.
ILLINOIS
Chicago:—E. C. Atkins & Co.
MINNESOTA
Minneapolis:—E. C. Atkins & Co.
LOUISIANA
New Orleans:—E. C. Atkins & Co.
OREGON
Portland:—E. C. Atkins & Co.
COLORADO
Denver:—M. L. Foss, 1901 Arapahoe St.
UTAH
Salt Lake City:—Mine & Smelter Supply Co.
WASHINGTON
Seattle:—E. C. Atkins & Co.
CALIFORNIA
San Francisco:—E. C. Atkins & Co.

J. B. Foote Foundry Co.
14 Front St., Fredericktown, Ohio
PRODUCT
Concrete Products Machinery

Fort Wayne Eng. & Mfg. Co.
1701 N. Harrison St., Ft. Wayne, Ind.
PRODUCTS
Pumps, Water Systems, Water Softeners, hand operated and automatic Septic Tanks.

Frantz Mfg. Co.
Sterling, Ill.
PRODUCT
Builders' Hardware

Frazier Stair Co.
2615 West Liberty Ave., Pittsburgh, Pa.
PRODUCT
Disappearing Stairs

Gallmeyer & Livingston Co.
206 Straight Ave., Grand Rapids, Mich.
PRODUCT
Woodworking Machinery

Garden City Plating & Mfg. Co.
1420 S. Talman Ave., Chicago, Ill.
PRODUCT
Clothes Closet Fixtures

Gas-Gard Company
375 Main St., Rochester, N. Y.
PRODUCT
Water Heater Control

Geier & Bluhm, Inc.
670 River St., Troy, N. Y.
PRODUCTS
Leveling Instruments.
TRADE NAMES
"G & B" From Factory to You

General Electric Co.
Bridgeport, Conn.
PRODUCT
Electric Wiring Devices

General Porcelain Enameling & Mfg. Co.
4100 Parker Ave., Chicago, Ill.
PRODUCTS
Porcelain Enameled Drain Boards, Porcelain Enameled Signs, All Kinds of Enameling on Steel.
TRADE NAMES

Veribrite
SALES OFFICES AND AGENCIES
4100 Parker Ave., Chicago, Ill.

Genfire Steel Co.
(The General Fireproofing Building Products)
Youngstown, Ohio.
PRODUCTS

Herringbone Metal Lath; Rib Lath; Expanded Metal; Steel Joists; Steel Casement, Basement, Commercial, Industrial and Continuous Windows; Corner Bead; Plasterer's Specialties; Road Material; Reinforcements and Waterproofing.

TRADE NAMES
Genfire Herringbone
BRANCH OFFICES

CALIFORNIA
Los Angeles:—Genfire Steel Co., 1920 Atlantic St.
San Francisco:—Genfire Steel Co., 461 Market St.
GEORGIA
Atlanta:—Southern GF Company, 263 Decatur Street.
ILLINOIS
Chicago:—Genfire Steel Co., 10 N. Clark St.
INDIANA
Indianapolis:—Genfire Steel Co., 305 Merchants Bank Bldg.
MASSACHUSETTS
Boston:—Genfire Steel Co., 143 Federal St.
MISSOURI
Kansas City:—Genfire Steel Co., 1009 Waldheim Bldg.
St. Louis:—Genfire Steel Co., 513 Arcade Bldg.
MINNESOTA
Minneapolis:—Genfire Steel Co., 450 Sexton Bldg.
NEBRASKA
Omaha:—Genfire Steel Co., 552 Peters Trust Bldg.
NEW YORK
Syracuse:—Genfire Steel Co., 415 Heffernan Bldg.
New York City:—Genfire Steel Co., 90 West Street. (EXPORT DEPT.)
New York City:—Fireproof Products Co., 536 East 133rd St.
OHIO
Cleveland:—Genfire Steel Co., 301 Rose Bldg.
Cincinnati:—Genfire Steel Co., 605 Mercantile Library Bldg.
OREGON
Portland:—Genfire Steel Co., 194 North 13th Street.
PENNSYLVANIA
Pittsburgh:—Genfire Steel Co., 337-339 Second Ave.
Philadelphia:—Genfire Steel Co., 1017 Drexel Bldg.
TEXAS
Dallas:—Genfire Steel Co., 619 American Exchange Bank Bldg.
WISCONSIN
Milwaukee:—Genfire Steel Co., 141 E. Wisconsin Ave.

Gilbert & Bennett Co.
33 S. Clark St., Chicago, Ill.
PRODUCT
Screen Cloth

Goodyear Tire & Rubber Co., Inc.
Akron, Ohio
PRODUCT
Rubber Tiling for Floors

Gould Mfg. Co.
Oshkosh, Wis.
PRODUCT
Millwork

Frederick H. Gowing
101 Tremont St., Boston, Mass.
PRODUCT
Plans

Grand Rapids Hardware Co.
Grand Rapids, Mich.
PRODUCT
Sash Pulleys

Granite City Steel Works
Granite City, Ill.
PRODUCT
Steel and Copper Sheets

Graver Corporation
East Chicago, Ind.
PRODUCTS
Water Softeners, Filters, Tanks and Swimming Pool Systems.
TRADE NAMES

Graver
SALES OFFICES AND AGENCIES
ILLINOIS
Chicago:—844 Rush St.
NEW YORK
New York:—Grand Central Terminal.
TEXAS
Houston:—West Bldg.
OKLAHOMA
Tulsa:—Atlas Life Bldg.

MILLS AND FACTORIES
East Chicago, Indiana.

Gurney Refrigerator Co.
Fond Du Lac, Wis.
PRODUCT
Refrigerators

Hagstrom Mfg. Co.
Glen Cove, L. I., N. Y.
PRODUCT
Friction Catches

Hardinge Brothers, Inc.
549 N. Michigan Ave., Chicago, Ill.
PRODUCT
Oil Burners for Heating Systems

The Hart & Hegeman Mfg. Co.
342 Capitol Avenue, Hartford, Conn.
PRODUCTS
"H & H" Switches, Receptacles, Sockets and miscellaneous wiring devices.
SALES OFFICES AND AGENCIES
San Francisco:—390 Fourth Street.
Chicago:—621 W. Jackson Blvd.
Boston:—326 Congress Street.
New York:—103 Park Avenue.
Philadelphia:—32nd & Arch Streets.

Hartmann-Sanders Co.
2171 Elston Ave., Chicago, Ill.
PRODUCT
Wood Columns, Garden Furniture

Heatilator Co.
Syracuse, N. Y.
PRODUCT
Fireplaces

Heltzel Steel Form & Iron Co.
Warren, Ohio
PRODUCT
Steel Mixing Boxes, Concrete Bins

Henry Furnace & Foundry Co.
Cleveland, Ohio
PRODUCT
Heating Systems

Herrick Refrigerator Co.
Waterloo, Iowa
PRODUCT
Refrigerators

Hess Warming & Ventilating Co.
1220-2 S. Western Ave., Chicago, Ill.
PRODUCT
Furnaces, Bathroom Cabinets

Heston & Anderson
2077 S. Sixth St., Fairfield, Iowa
PRODUCTS
Portable Electric Bench Woodworking Machines.
TRADE NAMES

H & A
DISTRIBUTORS OR JOBBERS
In all principal cities.

Heyman Mfg. Co.
16 Valley St., South Orange, N. J.
PRODUCT
Heat Regulators

Charles M. Higgins & Co.
Brooklyn, N. Y.
PRODUCT
Ink for Draftsmen

Hitchings & Co.
101 Park Ave., New York, N. Y.
PRODUCT
Greenhouses and Conservatories

Hoffbauer Co., Inc.
16 E. 12th St., New York, N. Y.
PRODUCT
Weatherstrips

Holland Furnace Co.
Holland, Mich.
PRODUCT
Warm Air Furnaces

Hollow Building Tile Assn.
Conway Bldg., Chicago, Ill.
PRODUCT
Hollow Clay Building Tile

Holt Bid Company
1901 Prairie Ave., Chicago, Ill.
PRODUCT
Estimating and Cost Service.

Hoosier Building Tile & Silo Co.
Albany, Indiana
PRODUCTS

Glazed Building Tile, for interior or exterior; Glazed Tile and Wood Silos; Brooders, Wood; Summer Cottages, portable; Backup Tile, Sewer Pipe, Wall Coping, Flue Liners, Drain Tile, Mortar Colors, Metal Sash, and Builders' Specialties.

TRADE NAMES
Hoosier Giant Holo-Bris Hoosier Glazed Tile Indiana Wood Silo Hoosier Glazed Tyle Silo
DISTRIBUTION
Products handled by supply dealers and lumber yards.

W. C. Hopson Co.
704 Ellsworth Ave., Grand Rapids, Mich.
PRODUCT
Metal Ceilings

Hornet Mantel & Tile Co
2214 Locust St., St. Louis, Mo.
PRODUCT
Mantels and Fireplaces

Hunt, Helm, Ferris & Co.
Harvard, Ill.
PRODUCT
Farm Building Equipment

Hutchinson Mfg. Co.
Norristown, Pa.
PRODUCT
Woodworking Machinery

Huther Bros. Saw Mfg. Co.
Rochester, N. Y.
PRODUCTS
Saws, Groovers, Cutters and Knives.
TRADE NAMES

Semhi Huther

MILLS AND FACTORIES
Rochester, N. Y.

DISTRIBUTORS OR JOBBERS
Cleveland, O.:—Saw & Knife Specialty Co.
Los Angeles:—Advance Saw Wks.
San Francisco:—California Saw Wks.

The Insulite Co.
Builders Exchange Bldg., Minneapolis, Minn.
PRODUCT
Insulation

International Casement Co.
Jamestown, N. Y.
PRODUCTS
Casement Windows

International Cement Corp.
New York, N. Y.
PRODUCT
Portland Cement

International Correspondence Schools
Scranton, Pa.
PRODUCT
Instruction

International Harvester Co.
Harvester Bldg., Chicago, Ill.
PRODUCT
Motor Trucks

International Steel & Iron Co.
Dept. 18, Evansville, Ind.
PRODUCT
Public and Private Garages, Store Fronts

Invincible House Lining Co.
Janesville, Wis.
PRODUCT
Insulation.

H. B. Ives Co.
5 Artizan St., New Haven, Conn.
PRODUCT
Sash Locks and Sash Holders

Jaeger Machine Co.
Columbus, Ohio
PRODUCT
Concrete Mixers

Johns-Manville Corp.
292 Madison Ave., at 41st St., New York, N. Y.
PRODUCT
Asbestos Shingles

S. C. Johnson & Son
 Racine, Wis.

PRODUCT
 Paints, Varnishes, Stains, Wax

Jones Superior Machine Co.
 1260 W. North Ave., Chicago, Ill.

PRODUCT
 Woodworking Machinery

Kahn Products Co.
 2216-18 W. Columbia Ave., Philadelphia, Pa.

PRODUCTS
 Incinerators.
TRADE NAMES
Kahn Products Company

Kalamazoo Vegetable Parchment Co.

Kalamazoo, Mich.
PRODUCT
 Building Paper

Kawneer Co.
 1026 Front St., Niles, Mich.

PRODUCT
 Store Fronts

F. D. Kees Mfg. Co.
 24 High St., Beatrice, Neb.

PRODUCTS
 Metal Siding Corners, Screen and Storm Sash Hardware and Builders' Hardware.

FACTORY REPRESENTATIVES

CALIFORNIA
 San Francisco:—W. H. Wilburn.
COLOREAD
 Denver:—National Sales Co.
INDIANA
 Indianapolis:—C. L. Hornaday.
TENNESSEE
 Nashville:—Louis Williams & Co.

EASTERN DISTRIBUTORS

MICHIGAN
 Flint:—Geo. W. Hubbard Hdw. Co.
NEW JERSEY
 Patterson:—Economy Mfg. & Construction Co.
NEW YORK
 Albany:—Albany Builders Supply Co.
 Buffalo:—Bison Builders Supply Co.
 North Tonawanda:—Cramer Hardware Co.
OHIO
 Cleveland (East Cleveland):—Phil G. Wuerst.

Toledo:—Augsbach & Osborn.
 In the territory from Chicago on west to the Coast, Kees Products are carried in stock by most wholesale and retail hardware and building material dealers.

Ralph M. Kennedy
 111 N. 7th St., Philadelphia, Pa.

PRODUCT
 Woodworking Machinery

The Kent Co., Inc.
 Rome, N. Y.

PRODUCTS
 Electric Floor, Waxing, Polishing, Scrubbing and Re-finishing Machines and Portable and Stationary Vacuum Cleaners.

TRADE NAMES
Kent Utility—J. C. M.
Vacuna Portable Cleaners
Kent Stationary Cleaners

BRANCH OFFICES
NEW YORK
 New York:—160 Fifth Ave.
MASSACHUSETTS
 Boston:—12 Pearl Street.

Kewanee Private Utilities Co.
 424 S. Franklin St., Kewanee, Ill.

PRODUCT
 Water Supply Systems

Kewanee Mfg. Co.
 Kewanee, Illinois

PRODUCTS
 Basement Coal Chutes and Steel Basement Windows.

TRADE NAMES
Kewanee

Kerner Incinerator Co.
 641 E. Water St., Milwaukee, Wis.

PRODUCTS
 Kernerator Chimney-fed Incinerator for garbage and waste disposal.

OFFICES AND AGENCIES

Baltimore:—403 Morris Bldg.
 Boston:—53 State St.
 Buffalo:—700 Main St.
 Charlotte, N. C.:—340 Church St.
 Chicago:—612 N. Michigan Ave.
 Cincinnati:—206 West Court St.
 Cleveland:—67 Builders Exchange.
 Dallas:—1019 Pacific Ave.
 Detroit:—550 Book Bldg.
 Houston:—2301 Main St.
 Indianapolis:—906 Odd Fellows Bldg.
 Kansas City:—1114 Grand Ave.
 New York:—465 Lexington Ave.
 New Haven:—816 2nd Natl. Bank Bldg.
 Newark:—451 Industrial Office Bldg.
 Philadelphia:—231 North 12th St.
 Pittsburgh:—1523 Oliver Bldg.
 Rochester:—112 Cutler Bldg.
 St. Louis:—315 North Tenth St.
 St. Paul:—2128 Berkeley Ave.

Keuffel & Esser Co.
 Hoboken, N. J.

PRODUCT
 Transits and Levels

Koehring Company
 31st St. & Concordia Ave., Milwaukee, Wisconsin

PRODUCTS
 Paving and Building Concrete Mixers, Gasoline Shovels, Cranes and Draglines, Bar Benders and Bar Cutters.

TRADE NAMES
Dandie Miser
Koehring Heavy Duty
DISTRICT SALES OFFICES AND AGENCIES

GEORGIA
 Atlanta:—506-508 Stewart Ave. S. W.
MARYLAND
 Baltimore:—108 South Gay St.
ALABAMA
 Birmingham:—3816 Avenue "A".
MASSACHUSETTS
 Boston:—141 Milk St.
NEW YORK
 Buffalo:—197 Van Buren St.
NEW YORK
 New York:—50 Church St.
MONTANA
 Butte:—14 West Granite St.
ILLINOIS
 Chicago:—849 Peoples Gas Bldg.
SOUTH CAROLINA
 Columbia:—P. O. Box 576.
OHIO
 Columbus:—987 West Goodale St.
TEXAS
 Dallas:—521 So. Akard St.
COLORADO
 Denver:—1936-1938 Market St.
IOWA
 Des Moines:—212-216 13th St.
MICHIGAN
 Detroit:—6331-51 Tireman Ave. at Livernois.
TEXAS

INDIANA
 Indianapolis:—21-23 South Senate Ave.
MISSOURI
 Kansas City:—2045 Main St.
KENTUCKY
 Louisville:—608 W. Jefferson St.
WISCONSIN
 Milwaukee:—6090 Plankinton Arcade Bldg.
MINNESOTA
 Minneapolis:—300 Tenth Ave. South.
TENNESSEE
 Nashville:—108-112 Fatherland St.
LOUISIANA
 New Orleans:—1208-1210 Carondelet St.
PENNSYLVANIA
 Philadelphia:—617 Filbert St.
 Pittsburgh:—528 First Ave.
VIRGINIA
 Richmond:—805 East Franklin St.
UTAH
 Salt Lake City:—426 Dooly Block.
CALIFORNIA
 San Francisco:—139 Townsend St.
 Los Angeles:—2205 Santa Fe Ave.
WASHINGTON
 Seattle:—1032 Sixth Ave. South.
MISSOURI
 St. Louis:—F 20 Railway Exchange Bldg.
FLORIDA
 Tampa:—407 Eunice Ave.

CANADIAN AND FOREIGN DISTRIBUTORS
 Canadian Office—53 Jarvis St., Toronto, Ontario, Canada.
 Foreign Office—Room 1370, 50 Church St., New York, N. Y.

Kimball Brothers Co.
 989 Ninth St., Council Bluffs, Iowa

PRODUCT
 Dumbwaiters and Elevators

Knap & Vogt Mfg. Co.
 Grand Rapids, Mich.

PRODUCT
 Garment Hangers

Knickerbocker Co.
 Jackson, Mich.

PRODUCT
 Concrete Mixers and Sawrags

Knickerbocker Slate Corp.
 153 E. 38th St., New York, N. Y.

PRODUCT
 Roofing Slate

Kolstad Mail Box Co.
 402-A W. 1st St., Duluth, Minn.

PRODUCT
 Mail Boxes

Kornau Machine Co.
 Gulow and Vandalia St., Cincinnati, O.

PRODUCT
 Woodworking Machinery

H. B. Fred Kuhls
 65th St. and 3d Ave., Brooklyn, N. Y.

PRODUCTS
 Elastic Glazing Composition and Elastic Joint Paint.

AGENTS CALIFORNIA

San Francisco:—C. J. Hendry Co., 25 Main St.
 Los Angeles:—Minwax Corp., 1322 S. Los Angeles Ave.

COLORADO
 Denver:—Denver Wholesale Florists Co., 14th and California Sts.

FLORIDA
 Jacksonville:—Geo. E. Chase & Co., 325 E. Bay St.
 Sanford:—Mill Hardware Co.
 Miami:—Phillip Hardware Co., 301 N. Miami Ave.

ILLINOIS
 Chicago:—N. J. Bique & Son, 126 W. Grand Ave.
 Chicago:—Athey Co., 24th and La Salle Sts.

NEBRASKA
 Omaha:—G. H. Alwine Co., 731 Branders Bldg.

NEW YORK
 Albany:—M. G. Stoneman & Son, Broadway and Beaver.
 Brooklyn:—C. W. Keenan, Fulton and Jay Sts.

Brooklyn:—H. B. Broer, 5518 3d Ave.
 Brooklyn:—F. R. Radford, Sheepshead Bay
 Brooklyn:—O'Brien & Whan, 2614 Harway Ave.

New York:—Browning Bros., 131st St. and Park Ave.
 New York:—Hull, Grippen & Co., 306 3d Ave.
 New York:—Durkee Guinan Corp., 2 South St.
 New York:—Fuller-Doran Hardware Corp., 438 3d Ave.
 New York:—Weinstock Bros., 384 3d Ave.

OHIO
 Cleveland:—Upson-Walton Co., 1310 W. 11th St.

OREGON
 Portland:—Beebe Co., 1st and Washington Sts.
 Portland:—F. W. Farrington & Co., Henry Bldg.

PENNSYLVANIA
 Philadelphia:—E. Webb & Son Co., 138 So. Front St.
 Pittsburgh:—Pittsburgh Cut Flower Co., 116-7th St.

SOUTH CAROLINA
 Charleston:—Wm. M. Bird & Co., 205 E. Bay St.

TENNESSEE
 Knoxville:—W. W. Woodruff Hdw. Co.

TEXAS
 Dallas:—Lingo Lumber Co., 2630 San Jacinto St.
 Houston:—Coastal Sales Agency, Second Nat. Bank Bldg.
 San Antonio:—Frassel Sash & Door Co., 302 Herff St.

WASHINGTON
 Seattle:—F. W. Farrington & Co., L. C. Smith Bldg.

Kuhlman Metal Weatherstrip Co.
St. Louis, Mo.
PRODUCT
Weatherstrips

Lamella Roof Syndicate
45 W. 45th St., New York, N. Y.
PRODUCT
Trussless Arch Roofs

Lane Brothers Co.
Poughkeepsie, N. Y.
PRODUCT
Steel Bridging for Wood Joists

Lansing Co.
Lansing, Mich.
PRODUCTS
Concrete Wheelbarrows, Concrete Carts, Contractors' Tool Carts, Mortar Boxes, Brick and Mortar Hods, Concrete and Mortar Mixers, Hand Trucks, Trailer Trucks, Mortar Tubs, Drag Scrapers, Wheel Scrapers, Hoists, and Wheels and Casters.
TRADE NAMES

Lansing
SALES OFFICES AND AGENCIES
Chicago:—1535-37 So. State St.
New York:—25-30 Vandam St.
Kansas City:—1413-15 W. 11th St.
Minneapolis:—308-312 No. 3d Ave.
Philadelphia:—No. American and Willow.
San Francisco:—338-348 Brannan St.
Boston:—78 Cambridge St., Charlestown District.
St. Louis:—1944 Railway Exchange Bldg.
Detroit:—319 Woodward Ave.

MILLS AND FACTORIES
Lansing, Mich.
Poughkeepsie, N. Y.
CANADIAN AND FOREIGN DISTRIBUTORS
London, S. W. I., England:—Lansing Equipment Co., 98-98 Victoria St.
New York Export Office—225-30 Vandam St.

LaPlant-Choate Mfg. Co.
3115 First Ave., Cedar Rapids, Iowa
PRODUCT
House Moving Equipment

Leach Company
Oshkosh, Wis.
PRODUCT
Concrete Mixers

Leonard Sheet Metal Works, Inc.
800 Ferry Street Hoboken, N. J.
PRODUCTS
Fireproof Doors & Windows, Steel Windows, Kalamein Doors, Steel Bucks, Store Fronts, Tin Covered Doors, Extruded Bronze Work and Underwriter's Doors and Windows.
SALES OFFICES AND AGENCIES
NEW YORK
New York:—1270 Broadway.
NEW JERSEY
Hoboken:—800 Ferry St.
MILLS AND FACTORIES
800 Ferry St., Hoboken, N. J.
16 to 40 Ravine Road, Jersey City, N. J.
DISTRIBUTORS OR JOBBERS
CONNECTICUT
New Haven:—A. E. Kirschner.
PENNSYLVANIA
Philadelphia:—James A. Clancy.
NEW JERSEY
Jersey City:—P. O. Nelson.

Libbey-Owens Sheet Glass Co.
Toledo, Ohio
PRODUCT
Window Glass

Lincoln-Schlueter Machinery Co.
222 W. Grand Ave., Chicago, Ill.
PRODUCT
Floor Surfacing Machines

Lincrusta-Walton Co.
Hackensack, New Jersey.
PRODUCTS
Travertine and Spanish Pound Stipple.

DISTRIBUTORS OR JOBBERS
Albany, N. Y.:—Albany Wall Paper & Paints, Inc., 147 So. Pearl Street.
Chicago, Ill.:—American Wall Paper Co., 4664 Lincoln Avenue.
Chicago, Ill.:—7657-59 So. Halsted Street.
Chicago, Ill.:—Imperial Campbell Branch, 3801 South Ashland Ave.
Pittsburgh, Pa.:—106 Wood Street.
Cincinnati, Ohio:—Cincinnati Wall Paper Co., 240 E. Fifth Street.
Kansas City, Mo.:—Kansas City Wall Paper & Paint Co., 1321 Main Street.
Louisville, Ky.:—Louisville Wall Paper Co., 528 W. Main Street.
Utica, N. Y.:—Mohawk Wall Paper & Paint Co., 211 John Street.
Omaha, Neb.:—Nebraska Wall Paper Co., 1202 Harney Street.
St. Louis, Mo.:—Newcomb Bros. Wall Paper Co., 2717 Olive Street.
New Haven, Conn.:—New Haven Wall Paper Co., 117 Meadow St.
Spokane, Wash.:—Northwestern Wall Paper & Paint Co., 819 W. First Avenue.
Syracuse, N. Y.:—Onondaga Wall Paper & Paint Co., 225 W. Water Street.
Springfield, Mass.:—Springfield Wall Paper & Paint Co., 27 Hampden Street.
Minneapolis, Minn.:—Tait Wall Paper & Paint Co., 1700 E. Franklin Avenue.
Troy, N. Y.:—Troy Wall Paper & Paint Co., River and King Streets.

IMPORTANT RETAIL DEALERS
Wall Paper Book Houses and Jobbers Everywhere.

Living Stone Company
1 E. Lee St., Baltimore, Md.
PRODUCT
Cement Bond

Louisiana Red Cypress Bureau
507 Carondelet St., New Orleans, La.
PRODUCT
Red Cypress

Lufkin Rule Co.
Saginaw, Mich.
PRODUCTS
Measuring Tapes of All Kinds, Rules

David Lupton's Sons Co.
Allegheny Ave. and Tulip St., Philadelphia, Pa.
PRODUCTS
Steel Casement and Basement Windows.
BRANCH OFFICES
CALIFORNIA
San Francisco:—David Lupton's Sons Construction Co., 821 Market St.
GEORGIA
Atlanta:—David Lupton's Sons Construction Co., 801 Bona Allen Bldg.
ILLINOIS
Chicago:—David Lupton's Sons Co., 1114 Steger Bldg.
MASSACHUSETTS
Boston:—David Lupton's Sons Co., 38 Chauncy St.
MICHIGAN
Detroit:—David Lupton's Sons Co., 2631 Woodward Ave.
NEW YORK
Buffalo:—David Lupton's Sons Co., 329 Jackson Bldg.
New York:—David Lupton's Sons Co., 8 Murray St.
OHIO
Cleveland:—David Lupton's Sons Co., 402 Sweetland Bldg.
PENNSYLVANIA
Philadelphia:—David Lupton's Sons Co., Allegheny Ave. & Tulip St.
Pittsburgh:—David Lupton's Sons Co., 1416 Oliver Bldg.
TEXAS
Dallas:—David Lupton's Sons Construction Co., 601 Mercantile Bank Bldg.

Lyons Mfg. Co.
New Haven, Conn.
PRODUCT
Casement Window Adjusters

McGill Mfg. Co.
Valparaiso, Ind.
PRODUCT
Lighting Fixtures.

McGraw-Hill Book Co.
370 Seventh Ave., New York, N. Y.
PRODUCT
Books for Builders

McKeown Bros. Co.
112 W. Adams St., Chicago, Ill.
PRODUCT
Roof Trusses of Wood for All Types of Buildings

McKinney Mfg. Co.
Pittsburgh, Pa.
PRODUCT
Builders' Hardware

Macomber Steel Co.
Canton, Ohio
PRODUCTS
Bar Joists, Roof Trusses, Metal Lath, Steel Windows, and Structural Steel.

The Majestic Company
Huntington, Ind.
PRODUCTS
Foundation Coal Windows

Majestic Steel Cabinet Co.
4211 Belle Plaine Ave., Chicago, Ill.
PRODUCT
Bathroom Cabinets

Mallory Mfg. Co.
Flemington, N. J.
PRODUCT
Shutter Workers

Manning Abrasive Co., Inc.
P. O. Drawer 74, Troy, N. Y.
PRODUCTS
Coated abrasives on paper, cloth and combination.

TRADE NAMES
Manning Speed-grit Troy Flint Paper
Manning Speed-grit Mohawk Flint Paper
Manning Speed-grit Emery Paper
Manning Speed-grit Emery Cloth
Manning Speed-grit Garnet Paper
Manning Speed-grit Garnet Cloth
Manning Speed-grit Garnet Combination
Manning Speed-grit Metalite Cloth
Manning Speed-grit Durandum Paper
Manning Speed-grit Durandum Cloth
Manning Speed-grit Durandum Combination
Manning Speed-grit Durite Paper
Manning Speed-grit Durite Cloth
Manning Speed-grit Durite Combination
Waterproof Speed-grit Paper

MILLS AND FACTORIES
Watervliet, N. Y.
SALES OFFICES
CALIFORNIA
San Francisco:—667 Mission St.
ILLINOIS
Chicago:—217-219 No. Desplaines St.
MASSACHUSETTS
Boston:—186 Lincoln St.
MICHIGAN
Detroit:—605 E. Milwaukee Ave.
Grand Rapids:—64-66 Ionis Ave., S. W.
MISSOURI
St. Louis:—16th and Locust Sts.
NEW YORK
Buffalo:—505 Pearl St.
New York:—100 Warren St.
NORTH CAROLINA
High Point:—132 W. Commerce St.
OHIO
Cincinnati:—226 W. 7th St.
Cleveland:—1414 W. 9th St.
PENNSYLVANIA
Philadelphia:—126 No. 15th St.
WASHINGTON
Tacoma:—213 So. 23d St.

CANADIAN DISTRIBUTORS
Ritchey Supply Co., 154 Pearl St., Toronto
FOR EXPORT
International Manning Abrasive Co., 100 Warren St., New York
Cable Address—Speedgrit, New York

Maple Flooring Manufacturers' Assn.

1777 McCormick Bldg., Chicago, Ill.
PRODUCTS
 Maple, Beech and Birch Flooring.
TRADE NAMES

MFMA

The Marschke Co.

St. Paul, Minn.
PRODUCT
 Folding Stairs

Mason Fibre Co.

1420 Conway Bldg., Chicago, Ill.
TRADE NAMES

Masonite Structural Insulation
 Masonite Insulating Lath
 Masonite Quarterboard
 Masonite Presdwood

Mast Foss & Co.

Box 501, Springfield, Ohio
PRODUCT
 Water Supply Systems

Master Metal Strip Service

1720 N. Kilbourn Ave., Chicago, Ill.
PRODUCTS
 Metal Weatherstrips of All Types, Zinc, Copper, Bronze, and Brass.

MILLS AND FACTORIES

1720 N. Kilbourn Ave., Chicago.
DISTRIBUTORS OR JOBBERS
 Over 300 live agents and dealers—Good territories still open—Write us.

Master Rule Mfg. Co., Inc.

815 East 136th Street, New York City
PRODUCTS

High Grade Rules: "Interlox" Master Slide Rule, Inside Measurement; "Interlox" F Style Rule; "Interlox" Standard Rule; Tubular Rivet Folding Rule (Solid spring brass unbreakable joint); Master Folding Rule (Solid spring brass joint), and U. S. A. Folding Rule (Bronzed steel spring joint).

SALES OFFICES AND AGENCIES
 New York City:—41 Murray St., Henriks & Howell.

Chicago, Ill.:—174 N. Wacker Drive, Bullock & Isbister.

Los Angeles, Calif.:—1004 Washington Bldg., Dan W. Morris.

Seattle, Wash.:—1457 L. C. Smith Bldg., Roy E. Benn.

New York City:—14 Warren St., McCoy Sales Co.

IMPORTANT RETAIL DEALERS

New York City:—Hammacher, Schlemmer & Co.

New York City:—Patterson Brothers.

Chicago, Ill.:—Stobbins Hdw. Co.

Chicago, Ill.:—United Hdw. Co.

Detroit, Mich.:—T. B. Rayl Co.

Philadelphia, Pa.:—G. A. Supple Co.

Pittsburgh, Pa.:—Joseph Woodwell Co.

Los Angeles, Calif.:—Eatz & Eucker Co.

Boston, Mass.:—J. B. Hunter & Co.

San Francisco, Calif.:—Palace Hdw. Co.

Cleveland, Ohio:—United Hdw. & Tool Co.

Cincinnati, Ohio:—Pickering Hdw. Co.

St. Louis, Mo.:—Schroeter Brothers.

Buffalo, N. Y.:—Wood & Co.

Milwaukee, Wis.:—Phillip Gross Hdw. & Supply Co.

Washington, D. C.:—Barber & Ross.

Minneapolis, Minn.:—Warner Hdw. Co.

Kansas City, Mo.:—Bunting Hdw. & Machinery Co.

Rochester, N. Y.:—Mathews & Beucher.

Indianapolis, Ind.:—Vannogut Hdw. Co.

Columbus, Ohio:—Frank P. Hall Co.

Seattle, Wash.:—Speiser & Hurlbut, Inc.

CANADIAN AND FOREIGN DISTRIBUTORS

Geo. F. Fraser, 39 Tyndall Ave., Toronto, Canada.

Master Woodworker Mfg. Co.

Detroit, Mich.
PRODUCT
 Woodworking Machinery, Floor Surfacers

Mellish-Hayward Co.

213 W. Austin Ave., Chicago, Ill.

PRODUCT
 Paint Spraying Machines

Geo. L. Mesker & Co.

Evansville, Ind.
PRODUCT
 Bowstring Steel Roof Trusses

The Miami Cabinet Co.

Middletown, Ohio
PRODUCT
 Bathroom Cabinets

Miller & Gleason

126 S. 5th St., Olmsted, N. Y.
PRODUCT
 Drip-Edge Roofing

Milwaukee Corrugating Co.

Milwaukee, Wis.
PRODUCTS
 Metal Lath, Corner Beads, etc., Metal Roofing, Elbows and Fittings, Stove Pipe and Elbows, Furnace Pipe and Fittings, Metal Ceilings, Ventilators and Skylights, Architectural Sheet Metal.

TRADE NAMES

MILCOR (for entire line)
 MILCOR "Stay Rib" and "Netmesh" Metal Lath

SALES OFFICES AND AGENCIES

ILLINOIS
 Chicago:—W. F. Watson, care of The Builders Club.

MASSACHUSETTS
 Boston:—C. W. B. Macdonald, 80 Bolyston St.

MISSOURI
 Kansas City:—H. H. Siefert, care of Milwaukee Corrugating Co.

PENNSYLVANIA
 Philadelphia:—Tom O'Neill, Chatham Court, 40th and Locust Sts.

WISCONSIN
 La Crosse:—Frank Vyvyan, care of Milwaukee Corrugating Co.

MILLS AND FACTORIES

Milwaukee, Wis.

Chicago, Ill.

Kansas City, Mo.

La Crosse, Wis.

DISTRIBUTORS OR JOBBERS

CALIFORNIA
 Los Angeles:—Soule Steel Co.

COLORADO
 Denver:—Francis J. Fisher Co., Inc.

NEW YORK
 New York:—Concrete Steel Co.

Milwaukee Stamping Co.

230 W. Superior, Chicago, Ill.
PRODUCT
 Garment Hangers

Morene Products Co., Inc.

154 East 47th Street, N. Y. C.
PRODUCTS
 Plastic Wall Finish and Waterproofing.

TRADE NAMES

"Morene," the wall finish distinctive, a Portland cement product
 "Kemisol," a colorless waterproofing
 "Petrofluid," an integral waterproofing

SALES OFFICES

Chicago, Ill.:—228 N. LaSalle St.

Boston, Mass.:—11 Beacon Street.

Washington, D. C.:—1724 Connecticut Ave.

CANADIAN DISTRIBUTORS AND FACTORY

Morene, Limited, 51 St. Nicholas St., Toronto.

Morgan Sash & Door Co.

Blue Island Ave. and Wood St., Chicago, Ill.
PRODUCT
 Millwork

Morton Manufacturing Co.

5161 W. Lake St., Chicago, Ill.
PRODUCTS
 Morton Steel Bathroom Cabinets, Also Race Safety Treads for Stairs and Floors, Morton Line of Steel Doors, Welded Tubing and Steel Products.

SALES OFFICES AND AGENCIES

In All Principal Cities.

R. L. Morriss & Co.

1138 Lake Shore Drive
PRODUCTS
 Built-in Wardrobes
TRADE NAMES

Berriman Biltin Wardrob
SALES OFFICES AND AGENCIES
 DISTRICT OF COLUMBIA

Washington:—B. G. Conrath, 1310 F. St., N. W.

FLORIDA
 Miami:—Donaldson-Anford Agency, 1620 Lark St.

Jacksonville:—212 Shoreland Arcade.

MISSOURI
 Kansas City:—J. Franklin Brown Eqp. Co., 327 Manfr's Exchange.

NEW YORK
 New York:—William J. Chipman, 420 Lexington Ave.

PENNSYLVANIA
 Philadelphia:—Alan G. Smith, 844 Broad St.

UTAH
 Salt Lake City:—Niels E. Larsen, 912 E. 1st St., South.

Mueller Co.

Decatur, Illinois
PRODUCTS
 Plumbing, Water and Brass Gas Goods.

Multiplex Concrete Machinery Co.

Elmore, Ohio
PRODUCT
 Machinery and Molds for Concrete Products

Murphy Door Bed Co.

22 W. Monroe St., Chicago, Ill.
PRODUCT
 Disappearing Beds

The F. E. Myers & Bro. Co.

Ashland, Ohio.
PRODUCTS

Hand and Windmill, Well, House and Cistern Pumps—Hand and Power Water Systems—Self-Oiling Power Pumps and Working Heads—Pump Stands, Pump Jacks, Cylinders and Well Accessories—Hand and Power Spray Pumps, Power Spray Rigs, Nozzles and Spraying Accessories—Hay and Grain Unloading Tools, Barn, Garage and Factory Door Hangers—Store Ladders, etc.

TRADE NAMES**Myers****SALES OFFICES AND AGENCIES**

Albany, N. Y.:—Albany Terminal Warehouse Co., No. 10 Tivoli St.

Cedar Rapids, Iowa:—Cedar Rapids Transfer Co., Inc., Cor. A Ave. and 4th St.

Milwaukee, Wis.:—Dan Fisher, 101 West Water St.

Harrisburg, Pa.:—Montgomery & Co., 21 South 10th St.

St. Louis, Mo.:—The McPheeters Warehouse Co., 1104 N. Levee St.

Kansas City, Mo.:—Central Storage Co., 1422 St. Louis Ave.

New York, N. Y.:—Agar, Cross & Co., Ltd., Agents (for Export), 11 Broadway.

National Better Home Builders' Assn.

Chicago, Ill.
PRODUCT
 Service for Home Builders.

National Brass Co.

1609 Madison Ave., S. E., Grand Rapids, Mich.
PRODUCT
 Builders' Hardware

National Bldg. Units Corp.

1600 Arch St., Philadelphia, Pa.
PRODUCT
 Cinder-Concrete Building Units

National Enameling & Stamping Co.

Granite City, Ill.
PRODUCT
 Sheet Steel for Every Building Use.

National Fireproofing Co.
Fulton Bldg., Pittsburgh, Pa.
PRODUCTS
"Nateco" Hollow Building Tile.
TRADE NAMES
"Nateco"

SALES OFFICES AND AGENCIES
New York, Chicago, Boston, Philadelphia.
Detroit:—Stoddard Dick Co.
Washington:—Smith & Kline.
in Canada:—National Fireproofing Co. of
Canada, Toronto, Ontario.

National Lead Co.
New York, N. Y.
PRODUCT
"Dutch Boy" White Lead

National Lock Co.
Rockford, Ill.
PRODUCT
Builders' Hardware.

National Lbr. Mfrs. Assn.
Washington, D. C.
PRODUCT
Lumber

National Mfg. Co.
Sterling, Ill.
PRODUCT
Builders' Hardware

National Radiator Corp.
Johnstown, Pa.
PRODUCT
Heating Systems

National Sanding Machine Co.
543-45 Vedder St., Chicago, Ill.
PRODUCTS
Floor Surfacing Machinery and Flexible
Shaft Equipment.
TRADE NAMES
"National Electric"

SALES OFFICES AND AGENCIES
ILLINOIS
Chicago:—F. E. Behrendt, 5253 Cottage
Grove Ave.
NEW ENGLAND STATES
(Concord Jct.) Boston:—W. C. Damon.
MAIN OFFICE AND FACTORIES
543-45 Vedder St., Chicago, Ill.

CANADIAN AND FOREIGN DISTRIBUTORS
Rithey Supply Co., Toronto, Canada.
Bournival Co., Montreal, Canada.
Mathew Wylie Co., Glasgow, Scotland.
Fox Bros. Co., Havana, Cuba.

National Sheet Metal Roofing Co.
339 Grand St., Jersey City, N. J.
PRODUCTS
Metal Shingles, Spanish Tile Metal, Sky-
lights Metal and Asbestos Shingles.
TRADE NAMES
Walter's & Coopers

SALES OFFICES AND AGENCIES
NEW JERSEY
Jersey City:—339 Grand St.
MILLS AND FACTORIES
Jersey City, N. J.

Nicholls Mfg. Co.
Ottumwa, Iowa
PRODUCT
Steel Squares

No. American Cement Corp.
285 Madison Ave., New York, N. Y.
PRODUCT
Cal Compound, Lime, Cement

National Steel Fabric Co.
902 Union Trust Bldg., Pittsburgh, Pa.
(Division Pgh. Steel Co.)
PRODUCTS
Electrically welded, cold drawn wire
mesh for reinforcing cement, plaster, stucco
and gypsum.

TRADE NAMES
"Steeltes" and National Reinforcing
SALES OFFICES AND WAREHOUSES

CALIFORNIA
Los Angeles:—1736 Naud Street.
San Francisco:—274 Brannan St.
GEORGIA
Atlanta:—604 Walton Bldg.
ILLINOIS
Chicago:—Straus Building.
MICHIGAN
Detroit:—1031 Dime Bank Bldg.
MISSOURI
St. Louis:—Railway Exchange Bldg.
NEW YORK
New York:—726 Liggett Bldg.
OHIO
Cincinnati:—428 Dixie Terminal Bldg.
PENNSYLVANIA
Philadelphia:—Franklin Trust Bldg.
TEXAS
San Antonio:—Bldg. Exchange Bldg.
Houston:—M. K. & T. Concrete Cotton Shed.

MILLS AND FACTORIES
Monessen, Pa.

North Brothers Mfg. Co.
Dept. A., Philadelphia, Pa.
PRODUCT
Carpenters' Tools

North Western Expanded Metal Co.
1203 Old Colony Bldg., Chicago.
PRODUCTS
Expanded Metal Lath; Expanded Metal
Reinforcing and Lathing Accessories.
TRADE NAMES
Kno-Burn, XXth Century,
Plasto-Saver, Longspan,
Econo, Steel-Hart

Novo Engine Co.
Lansing, Mich.
PRODUCT
Gas, Kerosene and Oil Engines.

Oak Flooring Bureau
828 Hearst Bldg., Chicago, Ill.
PRODUCT
Oak Flooring

The Ohio Foundry & Mfg. Co.
Steubenville, Ohio
PRODUCTS
Brilliant Fire Heaters, Ohio Fireplace
Accessories and Ohio Dome Dampers.
TRADE NAMES
"Brilliant Fire"
"Ohio"

O. K. Clutch & Machinery Co.
Columbia, Pa.
PRODUCT
Portable Elevators and Hoists

S. R. M. Orum, Inc.
503 N. 11th St., Philadelphia, Pa.
PRODUCT
Moulding Cutters

Paine Lumber Co.
Oshkosh, Wis.
PRODUCT
Millwork

Overhead Door Corporation
Hartford City, Indiana
PRODUCTS
Overhead Doors.
TRADE NAMES
The Overhead Door

SALES OFFICES
MICHIGAN
Detroit:—Overhead Door Co., 16552 Ham-
ilton Ave.
MILLS AND FACTORIES
INDIANA
Hartford City:—Overhead Door Corp.

DISTRIBUTORS
ARKANSAS
Little Rock:—T. W. Wallace, 2308 West
11th St.
CALIFORNIA
Glendale:—W. R. Headley, 2353 E. Glen-
oaks Blvd.

CONNECTICUT
New Haven:—Bliss Brothers, 39 Center St.
DISTRICT OF COLUMBIA
Washington:—Ray N. Gilpatrick, 1736 "G"
St., N. W.

ILLINOIS
Chicago:—Overhead Door Co. of Ill., 8066
South Chicago Ave.
IOWA
Des Moines:—Overhead Door Co. of Iowa,
63rd & Ingersoll Sts.

MICHIGAN
Detroit:—Overhead Door Co., 16552 Ham-
ilton Ave.

MINNESOTA
Minneapolis:—Overhead Door Co. of Minn.,
Bld'rs Exchange Bldg.

MISSOURI
Kansas City:—Overhead Door Co. of M. &
K., 2627 Meigs Trafficway.
St. Joseph:—H. F. Rippen, Box 1054.
St. Louis:—Overhead Door Co., of Mo., 318
Whittier St.

NEW JERSEY
Elizabeth:—Overhead Door Company, 50
Ramsey Avenue, Hillside Station.

NEW YORK
Canastota:—Overhead Door Co. of New
York.

NORTH CAROLINA
Asheville:—L. E. Ferrault, P. O. Box 1302.
Charlotte:—Overhead Door Co., 405 Build-
ers Building.
Durham:—Durham Building & Fuel Corp.
Greensboro:—Austin K. Hanks, Inc.

OKLAHOMA
Oklahoma City:—Overhead Door Co. of
Okla., 1016 N. Olive.

OHIO
Cleveland:—Overhead Door Co. of Cleve-
land, 7514 Carnegie Avenue.
Sandusky:—Overhead Door Co. of San-
dusky, 1301 Hayes Avenue.

OREGON
Portland:—Central Door & Lbr. Co., E.
24th & Helgate Sts.

PENNSYLVANIA
Philadelphia:—Overhead Door Sales of
Phila., 1536 Vine Street.
Pittsburgh:—Overhead Door Sales of West-
ern Penna., 227 Second Avenue.
Pittsburgh:—Overhead Door Co., 136 Fed-
eral Street.

Lewistown:—Overhead Door Co., of Penna.
SOUTH CAROLINA
Columbia:—Mrs. H. H. Koster.
Orangeburg:—Russell S. Wolfe.

TEXAS
Dallas:—Overhead Door Sales Co., 5113 E.
Grand Avenue.

WISCONSIN
Milwaukee:—Harry E. Franz, 773 Upper
Third St.

CANADIAN DISTRIBUTORS
Winnipeg, Man., Can:—Graham-Rebarts
Co., 104 Hurst Block.

Paramount Electric Co.
251 Market St., Philadelphia, Pa.
PRODUCT
Lighting Fixtures.

Parks Woodworking Mch. Co.
Fergus St. and C. H. & D. R. R., Cin-
cinnati, Ohio
PRODUCT
Woodworking Machinery

Patent Scaffolding Co.
1550 Dayton St., Chicago, Ill.
PRODUCT
Steel Folding Scaffold Brackets and
Ladders

J. R. Pearsall Mfg. Co.
Rochester, N. Y.
PRODUCT
Window Balances

Penberthy Injector Co.
1244 Holden Ave., Detroit, Mich.
PRODUCT
Cellar Drainers

Penn-Greg Mfg. Co.
809-11 University Ave., St. Paul, Minn.
PRODUCT
Built-In Mail Boxes

Plummer-Huff Co.
234 W. Front St., Napoleon, O.
PRODUCTS
Spray Guns, Paint Tanks, Air Compressor Outfits and Air and Paint Hose.
TRADE NAMES

Handgrip
SALES OFFICES AND AGENCIES
NEW YORK
Albany:—241 Quail St.
CALIFORNIA
San Jose:—156 W. San Carlos.
NEBRASKA
Omaha:—808 S. 20th St.
MISSOURI
St. Louis:—524 Walton Ave.
PENNSYLVANIA
Philadelphia:—5637 Springfield Ave.
MILLS AND FACTORIES
Napoleon, Ohio.

DISTRIBUTORS OR JOBBERS
NEW YORK
Brooklyn:—Salster & Weinsler, Inc.
Rochester:—Samuel Sloan & Co.
OHIO
Canton:—Edw. R. Hart Co.
Washington Ch.:—W. W. Wilson & Sons.
Columbus:—Standard Sanitary Mfg. Co.
PENNSYLVANIA
Lansdowne:—Keystone Supply.
INDIANA
Fort Wayne:—Burdal-Haffner Paint Co.
CANADIAN AND FOREIGN DISTRIBUTORS
Gulterman Co., New York City.

Porter-Cable Machine Co.
Syracuse, N. Y.
PRODUCTS
Take-About Hand Sanders, Kwiksaw Motor Hand Saws, Disc and Belt Sanders, and Band Saws.
TRADE NAMES

Syracuse
SALES OFFICES AND AGENCIES
CALIFORNIA
Los Angeles:—304 Crocker St.
NEW YORK
New York:—30 Church St.
MILLS AND FACTORIES
Syracuse, N. Y.
DISTRIBUTORS AND JOBBERS
COLORADO
Denver:—A. F. Krippner, 1429 18th St.
FLORIDA
Miami:—Wister & Kline, Bank of Bay Biscayne Bldg.

INDIANA
Indianapolis:—H. G. Hess, 4805 Park Ave.
LOUISIANA
New Orleans:—C. E. Johnson, 1929 Louisiana Ave.
IOWA
Des Moines:—J. A. McCoy, 547 Insurance Exchange.
MARYLAND
Baltimore:—Malcolm Grant, Knickerbocker Bldg.
MASSACHUSETTS
Boston:—Wright-Alexander Co., 25 Huntington Ave.
MICHIGAN
Detroit:—J. M. Smith, 406 Woodbridge St., E.
MINNESOTA
Minneapolis:—H. S. Seales, Builders Exchange.

OREGON
Portland:—Marwood Co.
PENNSYLVANIA
Philadelphia:—K. O. Dittmars, The Bourse.
Pittsburgh:—Penn General Supply Co., 103 Market St.
TEXAS
Dallas:—Huey & Philip Hardware Co.
WASHINGTON
Seattle:—Marwood Co.
CANADIAN AND FOREIGN DISTRIBUTORS
Toronto and Montreal:—Arthur Jackson Machine Tool Co.
London:—Benjamin Whittaker, Ltd.

The Frederick Post Co.
P. O. Box 803, Chicago, Ill.
PRODUCTS
Drawing Materials, Tables, Blue Print Paper and Cloth, Blue, Brown Photostat Prints, Transits and Levels.

DISTRIBUTORS OR JOBBERS
ALABAMA
Birmingham:—Engineers Supply Co.
CALIFORNIA
Los Angeles:—Adolf Fresco Corp.
COLORADO
Denver:—W. H. Kistler Staty. Co.
GEORGIA
Atlanta:—Atlanta Blue Print Co.
LOUISIANA
New Orleans:—Southern Blue Print Co.
MICHIGAN
Detroit:—Peerless Blue Print Co.
MINNESOTA
Minneapolis:—Farnham Prtg. & Staty. Co.
St. Paul:—H. E. Wedelstaedt Co.
MISSOURI
St. Louis:—Fink Instrument Co.
Kansas City:—Western Blue Print Co.
NEW YORK
Rochester:—H. H. Sullivan, Inc.
OHIO
Cincinnati:—The Ferd. Wagner Co.
Dayton:—Gem City Blue Print & S. Co.
Toledo:—Toledo Blue Print & Paper Co.
OKLAHOMA
Tulsa:—Triangle Blue Print & S. Co.
OREGON
Portland:—The Frederick Post Co.
PENNSYLVANIA
Pittsburgh:—American Blue Prtg. Co.
TEXAS
Dallas:—Southwestern Blue Print Co.
Houston:—L. L. Ridgway Co.

Progressive Mfg. Co.
Torrington, Conn.
PRODUCT
Brace and Machine Bits

Pullman Mfg. Co.
238 South Ave., Rochester, N. Y.
PRODUCT
Sash Balances

"Quiet Zone" Folding Wall Co.
7494 Kinsman Rd., Cleveland, Ohio
PRODUCT
Folding Walls

Radford Architectural Co.
1901 Prairie Ave., Chicago, Ill.
PRODUCT
Building Books, Building Plans.

The Ramey Mfg. Co.
Columbus, Ohio
PRODUCTS
Butler Warm Air Furnaces.
SALES OFFICES
OHIO
Columbus:—12 E. Livingston Ave.

Ransome Concrete Machinery Co.
Dunellen, N. J.
PRODUCT
Concrete Mixers

The Reardon Co.
2200 No. 2d St., St. Louis, Mo.
PRODUCTS
Bondex Waterproof Cement Paint, Solarite Cold Water Kalsomine, Cresto Hot Water Kalsomine, Lumnite Interior Cold Water Paint, Al Fresco Exterior Cold Water Paint and Reardon's Wall Size.

FACTORIES
St. Louis, Mo.
Chicago, Ill.
SALES OFFICES
CALIFORNIA
Los Angeles:—2143 Bay St.
ILLINOIS
Chicago:—2415 W. 24th Pl.
MINNESOTA
St. Paul:—184-90 Third St.
OREGON
Portland:—1241 E. E. Ave., So.
WASHINGTON
Seattle:—8-10 Front St.

Readybuilt Products Co.
2404 Frederick Ave., Baltimore, Md.
PRODUCT
Fireplaces

Reid-Way Co.
1295 Elmhurst Drive, Cedar Rapids, Ia.
PRODUCT
Convertible Sanders

Reif-Rexoil, Inc.
Buffalo, N. Y.
PRODUCT
Oil Burners for Heating

Republic Iron Works
Tecumseh, Mich.
PRODUCTS
Concrete Mixers.
TRADE NAMES

Republic
IMPORTANT RETAIL DEALERS
Leading Dealers in all Cities. Write or wire for name.

Richards-Wilcox Mfg. Co.
Aurora, Illinois
PRODUCTS

Door Hangers for Barns, Residences, Garages, Schools, Churches, Warehouses, Factories, etc. Fire Doors and Fire Door Hardware. Manual Training Benches and Vises; Hinges, Hardware Specialties; Garage Door Equipment; Elevator Door Hardware.
TRADE NAMES
Slidetite Garage Door Hardware
Air-Way Multifold Window Hardware
Rich-Wil Elevator Door Equipment
R-W Products

BRANCH OFFICES
CALIFORNIA
Los Angeles:—501 Hibernian Bldg.
San Francisco:—625 Market St.
ILLINOIS
Chicago:—166-168 W. Lake St.
IOWA
Des Moines:—619 Hubbel Bldg.
INDIANA
Indianapolis:—1939 N. Meridian St.
LOUISIANA
New Orleans:—616 Hibernia Bldg.
MASSACHUSETTS
Boston:—124-126 Pearl St.
MICHIGAN
Detroit:—505 Donovan Bldg.
MINNESOTA
Minneapolis:—321 Plymouth Bldg.
MISSOURI
Kansas City:—206 Reliance Bldg.
St. Louis:—2006 Locust St.
NEBRASKA
Omaha:—2-3 City Natl. Bank Bldg.
NEW YORK
New York City:—85 Walker St.
OHIO
Cincinnati:—512 Provident Bank Bldg.
Cleveland:—459 Hippodrome Annex.
PENNSYLVANIA
Philadelphia:—607 Arch St.
WASHINGTON
Seattle:—1214 Hoge Bldg.

Edward N. Riddle Co.
Toledo, Ohio
PRODUCT
Lighting "Fittings"

Robinson Refrigerator Co.
2322 S. Western Ave., Chicago, Ill.
PRODUCT
Refrigerators and Ice Boxes.

Roddis Lumber & Veneer Co.
Marshfield, Wis.
PRODUCTS
Doors, Tops, Panels, Lumber.
SALES OFFICES AND WAREHOUSES

ILLINOIS
Chicago:—1485 West 37th St.
MISSOURI
Kansas City:—2728 Southwest Blvd.
TEXAS
Dallas:—405 Elm St.
San Antonio:—727 N. Cherry St.
MILLS AND FACTORIES
Marshfield, Wis.
Park Falls, Wis.
DISTRIBUTORS OR JOBBERS
Agents in all the principal cities.

F. L. Rogers & Co.
23-27 S. Jefferson St., Chicago

PRODUCTS

Electric Hand Saws, Lock Mortisers,
Electric Drills, Portable Sanders, Timber
Clamps.

TRADE NAMES

Wodack Saw
Wodack Drills
Wodack Mortiser
Rogers Timber Clamps

SALES OFFICES AND AGENCIES

ILLINOIS
Chicago:—23-27 S. Jefferson St.
NEW YORK
New York:—210 Lafayette St.

DISTRIBUTORS OR JOBBERS
Agencies in most of the important cities.

E. W. A. Rowles Co.
2345 S. La Salle St.

PRODUCTS

Blackboards.

DISTRIBUTORS OR JOBBERS

CALIFORNIA
Los Angeles:—H. S. Crocker Co.
San Francisco:—H. S. Crocker Co.
GEORGIA
Atlanta:—F. Graham Williams Brick Co.
MONTANA
Billings:—Frank W. Richardson, Inc.
NEBRASKA
Lincoln:—Western Brick & Supply Co.
NORTH CAROLINA
Charlotte:—General Seating Co.

The Ruberoid Co.

95 Madison Ave., New York, N. Y.

PRODUCT

Asphalt Shingles and Roofing

Jos. T. Ryerson & Son, Inc.
16th and Rockwell Sts., Chicago, Ill.

PRODUCTS

Steel Joist, Steel Windows, Metal Lath,
Wire Mesh, Expanded Metal, Spirals, Re-
inforcing Bars, Steel Corner Bend, Bar
Chairs, Base Screed, Bar Spacers, Stirrups,
Wire Rod, Steel Sheets, Steel Shapes,
Metal Road Strip.

PLANTS AND OFFICES

ILLINOIS
Chicago:—16th and Rockwell Sts.
WISCONSIN
Milwaukee:—19th and So. Canal Sts.
MISSOURI
St. Louis:—2308 North 2nd St.
OHIO
Cincinnati:—Front and Freeman Sts.
Cleveland:—E. 53rd and Lakeside Ave.
MICHIGAN
Detroit:—1600 E. Euclid Ave.
NEW YORK
Buffalo:—Bailey Ave. and Stanley St.
NEW JERSEY
Jersey City:—303 Westside Ave.
MASSACHUSETTS
Cambridge:—675 Concord Ave.
COLORADO
Denver:—17th and Champa Sts.
TEXAS
Houston:—1008 Union Nat'l Bank Bldg.
MINNESOTA
Minneapolis:—Hennepin Ave. and 6th St.
OKLAHOMA
Tulsa:—410 Atlas Life Bldg.
CALIFORNIA
San Francisco:—750 Folsom St.
Los Angeles:—2318 Santa Fe Ave.

Safe Tool Mfg. Co.

Bridgeport, Pa.

PRODUCT

Woodworking Machinery.

Samson Cordage Works

88 Broad St., Boston, Mass.

PRODUCTS

Sash Cord and Other Braided Cords.

TRADE NAMES

Samson Spot

Sargent & Co.

51 Water St., New Haven, Conn.

PRODUCT

Builders' Hardware, Carpenters' Tools

Sasgen Derrick Co.

Chicago, Ill.

PRODUCTS

Derricks, Winches, Elevators and Hoists.

DISTRIBUTORS

CALIFORNIA
Los Angeles:—Const. Mach. Co. of Calif.
CONNECTICUT
Hartford:—K. B. Noble Co.
INDIANA
Indianapolis:—Bock Equip. Co.
LOUISIANA
New Orleans:—Wormington & Powers.
MASSACHUSETTS
Boston:—Walde Bros. & Bond Co.
MICHIGAN
Detroit:—Contractors Equipment Co.
MISSOURI
St. Louis:—Geo. F. Smith Co.
NEW YORK
New York:—E. B. Kelley Co.
OHIO
Cleveland:—W. M. Pattison Supply Co.
PENNSYLVANIA
Philadelphia:—J. Jacob Shannon & Co.
Pittsburgh:—Beechwith Machinery Co.
WISCONSIN
Milwaukee:—Hunter Machinery Co.

Schlage Lock Co.

San Francisco, Cal.

PRODUCT

Door Locks

Sedgwick Machine Works

154 W. 15th St., New York, N. Y.

PRODUCT

Elevators and Dumbwaiters

G. I. Sellers & Sons Co.

Elwood, Ind.

PRODUCT

Kitchen Cabinets

**Sheet Steel Trade Extension
Committee**

Oliver Bldg., Pittsburgh, Pa.

PRODUCT

An Association to further use of steel

Sheldon Mfg. Co.

Nehawka, Neb.

PRODUCT

Concrete Mixers

Sherwin-Williams Co.

Cleveland, Ohio

PRODUCT

Paints, Stains, Varnishes.

**Shevlin, Carpenter & Clarke
Co.**

903 1st Nat'l-Soo Line Bldg., Minne-
apolis, Minn.

PRODUCT

Wholesale Lumber

Sidney Elevator Mfg. Co.

Sidney, Ohio

PRODUCT

Elevators and Dumbwaiters

Sidney Machine Tool Co.

Sidney, Ohio

PRODUCT

Woodworking Machinery

Silver Lake Co.

Newtonville, Mass.

PRODUCTS

Solid Braided Cordage.

The Sisalkraft Company

228 No. LaSalle Street,
9188-20 Builders Building

PRODUCTS

Waterproof Reinforced Insulating Paper,
Tarpaulins, Wind Breaks.

TRADE NAMES

Sisalcraft

DISTRIBUTORS AND JOBBERS

Boston, Mass.:—Whitney Bros., Inc.
Minneapolis, Minn.:—John Leslie Paper Co.
Atlanta, Ga.:—Industrial Equipment Co.
Fond du Lac, Wis.:—General Supply Co.
Pinehurst, N. Car.:—H. G. Waring & Co.,
and Arthur S. Higgins.
St. Louis, Mo.:—Glencoe Lime & Cement
Co.
Louisville, Ky.:—Mutual Service Corp.
Detroit, Mich.:—Welt & Sons Paper Co.
Denver, Colo.:—Sisalkraft Western Corp.

IMPORTANT RETAIL DEALERS

Chicago, Ill.:—Alexander Lumber Co.
Chicago, Ill.:—Edw. Hines Lumber Co.
Chicago, Ill.:—Material Service Corp.
Cincinnati, Ohio:—Whitaker Paper Co.
Terre Haute, Ind.:—A. Fromme Lumber Co.
Dallas, Texas:—Cowser Lumber Co.
Indianapolis, Ind.:—Burnet-Binford Lum-
ber Co.
Indianapolis, Ind.:—John VanWert Co.
Chicago, Ill.:—Bishop Lumber Co.
Kansas City, Mo.:—C. A. Brockett Cement
Co.
Decatur, Ill.:—G. S. Lyon & Son.
Reading, Pa.:—Merritt Lumber Yards.

Skilsaw, Inc.

3818 Ravenswood Ave., Chicago, Ill.

PRODUCT

Electric Hand Saw

Slatington Bangor Slate

Syndicate

Slatington, Pa.

PRODUCT

Slate Products

W. & J. Sloane Mfg. Co.

Trenton, N. J.

PRODUCTS

W. & J. Sloane Linoleum.

SALES OFFICES

New York City:—577 Fifth Avenue.
Baltimore:—Manufacturers Exchange Bldg.
Boston:—120 Boyston St.
Philadelphia:—1015 Chestnut St.
Detroit:—Book Bldg.
St. Louis:—N. W. Corner 7th & Locust Sts.
Chicago:—225 South Wabash Ave.
Dallas:—1200 Commerce St.
Denver:—16th & Curtis Sts.
San Francisco:—180 New Montgomery St.
Los Angeles:—East 8th St. and Maple Ave.
Portland:—13th and Morrison Sts.
Seattle:—300 Terminal Sales Bldg.
Atlanta:—29 Haynes St., N. W.
Cincinnati:—7 West Front St.
Houston:—Washington Ave. and Elder.
Kansas City:—1104 Union Ave.

The T. L. Smith Co.

1025 32nd St., Milwaukee, Wis.

PRODUCT

Concrete Mixers

The Smith & Egge Mfg. Co.

Bridgeport, Conn.

PRODUCT

Sash Chain

Smith Typewriter Sales Corp.

299-360 E. Grand Ave., Chicago, Ill.

PRODUCT

Typewriters

Solvay Sales Corp.

40 Rector St., New York, N. Y.

PRODUCT

Calcium Chloride

Spargo Wire Co.

Rome, N. Y.

PRODUCT

Screen Cloth

Stairway Switch Co.
235 Brookdale Ave., Glenside, Pa.
PRODUCTS
Automatic Stair Controlled Electric Light Switch and Automatic Door Controlled Electric Switch Devices.
SALES OFFICES AND AGENCIES
PENNSYLVANIA
West Philadelphia:—Herman W. Schussler, 214 So. Buckingham Place.
IMPORTANT RETAIL DEALERS
All Reliable Dealers.

Standard Sales & Mfg. Co.
103 Park Ave., New York, N. Y.
PRODUCTS
Apartment House Mail Boxes, Built-in Mail Boxes and Letter Drops.
TRADE NAMES
"Standard"
SALES OFFICES AND AGENCIES
NEW YORK
New York City:—103 Park Avenue.
MILLS AND FACTORIES
New York, N. Y.
DISTRIBUTORS OR JOBBERS
Principal large cities throughout the United States.

Standard Scale & Supply Corp.
Pittsburgh, Pa.
PRODUCT
Concrete Mixers

The Standard Textile Products Co.
320 Broadway, New York, N. Y.
PRODUCTS
Sanitas Modern Wall Coverings.
DISTRIBUTORS OR JOBBERS
CALIFORNIA
San Francisco:—Uhl Bros.
CONNECTICUT
Hartford:—American Wall Paper & Paint Co.
New Haven:—H. M. Hodges & Bro.
New Haven:—Richard E. Thibaut, Inc.
DISTRICT OF COLUMBIA
Washington:—Capital Wall Paper Co.
ILLINOIS
Chicago:—H. Bosh Co.
Chicago:—James Davis, Inc.
Chicago:—Isco Wall Paper Corp.
Chicago:—S. A. Maxwell & Co.
Chicago:—L. G. Orrell & Co.
Chicago:—Alfred Peats Co.
Chicago:—Bemlen & Kuhaert Co.
INDIANA
Indianapolis:—Central Wall Paper & Paint Co.
MARYLAND
Baltimore:—National Wall Paper Co.
Baltimore:—Union Wall Paper Co.
MASSACHUSETTS
Boston:—J. W. Gerry Co.
Boston:—Grandberg Bros. Wall Paper Co.
Worcester:—J. W. Gerry Co.
MICHIGAN
Detroit:—F. J. Holts.
Detroit:—James Davis Wall Paper & Paint Co.
MINNESOTA
Minneapolis:—Frank Hirschfeld & Sons.
Minneapolis:—Kaysor & Co.
Minneapolis:—Wyman Partridge & Co.
MISSOURI
Kansas City:—S. A. Maxwell & Co.
Kansas City:—Western Wall Paper Co.
NEW JERSEY
Newark:—Richard E. Thibaut, Inc.
NEW YORK
Brooklyn:—S. A. Maxwell & Co.
Brooklyn:—Richard E. Thibaut, Inc.
Brooklyn:—C. J. Williams, Inc.
Brooklyn:—Wolf Bros.
Buffalo:—Phillip Setel & Sons.
Buffalo:—Frank E. Shaw & Son.
New York:—Kaysor & Allman.
New York:—Richard E. Thibaut, Inc.
New York:—Weiss & Klap Co.
Rochester:—M. Suskind & Son.
Utica:—Richard E. Thibaut, Inc.
Utica:—New York Wall Paper Co.
OHIO
Akron:—D. F. W. Co.
Cincinnati:—The C. C. Aler Co.
Cleveland:—The J. B. Pearce Co.
Columbus:—The C. C. Aler Co.
PENNSYLVANIA
Philadelphia:—Kaysor & Allman.
Philadelphia:—Acum Bros.
Pittsburgh:—Arbutnot-Stephenson Co.
Pittsburgh:—S. A. Maxwell & Co.
Pittsburgh:—Pittsburgh Dry Good Co.
IMPORTANT RETAIL DEALERS
See Local Decorators for Samples.

Standard Varnish Works
Toch Brothers Division, New York, N. Y.
PRODUCT
Waterproofing for Cement

The Stanley Works
New Britain, Conn.
PRODUCT
Builders' Hardware and Tools

L. S. Starrett Co.
Athol, Mass.
PRODUCT
Precision Instruments

Steel Craft Mfg. Co.
29 W. Austin Ave., Chicago, Ill.
PRODUCTS
Steel Kitchen Cabinets, Steel Kitchenette Units, Forecain Drain Boards and Steel Specialties of All Kinds.
MANUFACTURERS
Representation wanted all cities.

The Steel Scaffolding Co.
Evansville, Indiana
PRODUCTS
Steel Scaffolding for Carpenters, Plasterers, Masons, Painters, Mill-wrights, Roofers, Stuccoers, General Contractors.
TRADE NAMES
"Trouble-Savers"
SALES OFFICES AND AGENCIES
Evansville, Ind.
MILLS AND FACTORIES
Evansville, Ind.
CANADIAN AND FOREIGN DISTRIBUTORS
100 Canadian Building Supply Houses.
Also James Wren & Company, Ltd., Dunedin, New Zealand, distributors for New Zealand and Australia.
IMPORTANT RETAIL DEALERS
Over 600 Building Supply and Hardware Dealers—as well as Wholesale Hardware Dealers—in the U. S. A.

Steinke Bros. Mfg. Co., Inc.
Peoria, Ill.
PRODUCTS
Hand Hoist for Trucks, Tractor Tenders.
TRADE NAMES
Little Giant

Sterling Wheelbarrow Co.
Milwaukee, Wis.
PRODUCT
Wheelbarrows

Stewart Mfg. Co.
157 Rath St., Waterloo, Iowa
PRODUCT
Concrete Mixers

Stimmel Winch & Machine Works
562-66 W. 22nd St., New York, N. Y.
PRODUCT
Winches

The Storm Mfg. Co.
40-50 Vesey St., Newark, N. J.
PRODUCTS
Hand and Electric Dumbwaiters and Elevators.
IMPORTANT RETAIL DEALERS
CALIFORNIA
San Francisco:—Thayer & Bower.
KENTUCKY
Louisville:—Belknap Hdw. & Mfg. Co.
MISSOURI
Kansas City:—Richards & Conover Hardware Co.
St. Louis:—W. A. Miller Elev. Co.
OREGON
Portland:—Honeyman Hardware Co.
UTAH
Ogden:—Geo A. Lowe Co.
WISCONSIN
Milwaukee:—Phillip Gross Hdw. & Supply Co.
WASHINGTON
Spokane:—Holley-Mason Hdw. Co.
Seattle:—Seattle Hardware Co.

Strand Mfg. Co.
644 W. Randolph St.
PRODUCT
Universal Jamb Nails

Structural Slate Co.
Pen Argyl, Pa.
PRODUCT
Slate Products

Sullivan Co.
Memphis, Tenn.
PRODUCT
Waterproofing for Cement

A. L. Swett Iron Works
151 Glenwood Ave., Medina, N. Y.
PRODUCT
Builders' Supplies and Specialties

Sykes Metal Lath Co.
Niles, Ohio
PRODUCT
Metal Lath

Syntron Company
400 N. Lexington Ave., Pittsburgh, Pa.
PRODUCTS
Light Socket Hammers, Electric Power Hammers, Portable Electric Power Plants, Portable Electric Hand Saws, Electric Drills, Portable Bench and Floor Grinders, Rotary Converters and Motor Generators.
TRADE NAMES

Syntron
SYNTRON REPRESENTATIVES
CALIFORNIA
Los Angeles:—H. N. Thackberry, 318 E. 3d St.
San Francisco:—Stephen Smith & Co., 1232 Mission St.
CONNECTICUT
Hartford:—K. B. Noble Co., 247 Pearl St.
ILLINOIS
Chicago:—Syntron Co., Room 400, 9 S. Clinton St.
INDIANA
Indianapolis:—Indianapolis Beiting & Supply Co.
IOWA
Davenport:—Louis Hanssen's Sons, 213 W. 2d St.
Des Moines:—Globe Machinery Co., 208 Court St.
MARYLAND
Baltimore:—J. F. Bakos & Co., 108 Grant St.
MASSACHUSETTS
Boston:—Syntron-Boston Co., 308 Congress St.
Springfield:—Raymond S. Smith, 417 Third National Bk. Bldg.
MICHIGAN
Detroit:—Syntron-Detroit Co., 5001 So. Clarendon St.
Lansing:—C. Rowland Stebbins, 326 N. Capitol Ave.
MINNESOTA
Minneapolis:—Wm. H. Ziegler Co., Inc., 619 Washington Ave., So.
MISSOURI
Kansas City:—Van-Bernard-Neville Co., Kemper Bldg.
St. Louis:—Syntron-St. Louis Co., 3711 Delmar Blvd.
NEBRASKA
Omaha:—Inter-State Machine & Sup. Co., 1006 Douglas St.
NEW YORK
New York:—Syntron Co., Room 5076, 30 Church St.
Syracuse:—Arthur E. Jones Co., 415 S. A. & K. Bldg.
OHIO
Cleveland:—Cleveland-Syntron Co., 2034 S. Clinton St.
Cincinnati:—Queen City Supply Co., Pearl & Elm Sts.
Toledo:—F. Bissell Co., 812 Lafayette St.
PENNSYLVANIA
Philadelphia:—Syntron-Philadelphia Co., 317 Widener Bldg.
Reading:—J. N. Wheeler, 300 No. 5th St.
TEXAS
Dallas:—Syntron-Texas Co., P. O. Box 1404.
San Antonio:—Alamo Iron Works.
WASHINGTON
Seattle:—The Marwood Co., 918 Western Ave.
WISCONSIN
Milwaukee:—Hunter Machine Co., 10th St. Viaduct.
Agencies in 30 other cities.
CANADIAN DISTRIBUTORS
Montreal:—Williams & Wilson, Ltd., 64 Inspector St.

Superior Rolling Window Screen Co.

2152 Fulton St., Chicago, Ill.

PRODUCTS
Window Screen (Rolling).

TRADE NAMES

"Superior" Roll Screen

MILLS AND FACTORIES

2152 Fulton St., Chicago.

DISTRIBUTORS OR JOBBERS

CONNECTICUT

Stamford:—Rosen & Son, 92 Pacific St.

FLORIDA

St. Petersburg:—C. A. Johnson, Box 2411.

INDIANA

Fort Wayne:—Old Fort Supply Co.

Hammond:—J. E. Howell, 907 Calumet Ave.

MISSOURI

St. Louis:—F. E. Schoenberg Mfg. Co.,

2026 DeKalb St.

St. Louis:—Sydnor-Hall Co., 1811 Morgan St.

OHIO

Columbus:—Alvan Tallmadge, 1630 Granville St.

PENNSYLVANIA

Wilkes-Barre:—Harry W. Foust.

TENNESSEE

Knoxville:—W. B. Martin Co.

VIRGINIA

Newport News:—Atlantic Screen & Weatherstrip Co.

James L. Taylor Mfg. Co.

110 Parker Ave., Poughkeepsie, N. Y.

PRODUCT
Clamps

Taylor Collapsible Horse Co.

730 W. Harrison St., Chicago, Ill.

PRODUCT
Collapsible Horses.

Teekorator Co.

Rochester, N. Y.

PRODUCT
Incinerators.

Thatcher Co.

39 St. Francis St., Newark, N. J.

PRODUCT
Heating Systems

Tillery's Little Janitor Clock Co.

55 Orchard St., Newark, N. J.

PRODUCT
Furnace Regulators

Toch Brothers

443 Fourth Ave., New York, N. Y.

PRODUCTS

See Page 199 for our advertisement.

Tolectro Corporation

500 Fassett St., Toledo, Ohio

PRODUCTS

Gas-O-Matic, The Home Gas Producer.

TRADE NAMES

Gas-O-Matic

SALES OFFICES AND AGENCIES
In all parts of the County.

Trane Co.

La Crosse, Wis.

PRODUCT
Pumps and Heating Specialties

Trimpak Corp.

44 Whitehall St., New York, N. Y.

PRODUCT
Interior Finish in Cartons

Truscon Laboratories

Detroit, Mich.

PRODUCT
Waterproofings and Technical Paints

Truscon Steel Company

Youngstown, Ohio.

PRODUCTS

Reinforcing Steel, Flaretype, etc., including Engineering Plate Girder and O-T Steel Joists; Hy-Rib and Metal Lath, including Accessories; Mortar Boxes; Steel Windows, Residential, Commercial, Industrial; Mechanical Operators for Windows; Steel Frames; Steel Doors, Swing, Sliding, Folding and Special; Airplane Hangars; Standard Steel Buildings; Steel-dock Roofs, Insulated and Waterproofed; Steel Poles, Hardware and Specialties.

SALES OFFICES AND WAREHOUSES

(Warehouses indicated by *)

ALABAMA

*Birmingham:—513 N. 21st St.

ARKANSAS

Little Rock:—903 W. Third St.

ARIZONA

Phoenix:—1638 W. Jefferson St.

CALIFORNIA

Oakland:—354 Hobart St., Room 316.

*Los Angeles:—1430 E. 4th St.

*San Francisco:—65 New Montgomery St.

COLORADO

*Denver:—U. S. National Bank Bldg.

CONNECTICUT

Hartford:—Room 901, 903 Main St.

New Haven:—43 Church St.

DISTRICT OF COLUMBIA

Washington:—424 Transportation Bldg.

FLORIDA

*Jacksonville:—215 Professional Bldg.

Miami:—414 Miami Bank & Trust Bldg.

Orlando:—304 Murphy Arcade.

Tampa:—330 Lafayette Arcade.

GEORGIA

Atlanta:—702-705 Wynne-Claughton Bldg.

ILLINOIS

*Chicago:—Builders Bldg.

Peoria:—604 Commercial Bk. Bldg.

INDIANA

Fort Wayne:—Care of Old Fort Supply Co.

*Indianapolis:—241 E. Ohio St.

South Bend:—223 Christman Bldg.

IOWA

Des Moines:—Hubbell Bldg.

KENTUCKY

Louisville:—621 Marion E. Taylor Bldg.

LOUISIANA

*New Orleans:—605 New Orleans Bk. Bldg.

MARYLAND

*Baltimore:—1507 Standard Oil Bldg.

MASSACHUSETTS

*Boston:—260 Tremont St.

MICHIGAN

*Detroit:—615 Wayne St.

MINNESOTA

*Minneapolis:—601 Metropolitan Bk. Bldg.

MISSOURI

*Kansas City:—611 Bryant Bldg.

*St. Louis:—1001 Syndicate Trust Bldg.

NEBRASKA

Omaha:—901 World-Herald Bldg.

NEW MEXICO

Roswell:—County Engr's Office, Court House.

NEW JERSEY

*Newark:—1000 Broad St.

NEW YORK

Albany:—75 State St.

*Buffalo:—637 Genesee Bldg.

*New York City:—31 Union Square.

Rochester:—Sagamore Hotel.

Syracuse:—440 Gurney Bldg.

NORTH CAROLINA

*Greensboro:—830 Jefferson Std. Bldg.

OHIO

*Cincinnati:—617 Provident Bk. Bldg.

*Cleveland:—4614 Prospect Ave.

Columbus:—1009-04 Atlas Bldg.

Dayton:—303 Harries Bldg.

Toledo:—312-313 Richardson Bldg.

OKLAHOMA

Oklahoma City:—317-319 Magnolia Bldg.

Tulsa:—601 Mayo Bldg.

OREGON

*Portland:—463 Kirby St.

PENNSYLVANIA

Altoona:—Penn-Central Bldg.

Erie:—1207 French St.

Harrisburg:—600-2 N. Second St.

*Philadelphia:—1295 Race St.

Pittsburgh:—2544 Oliver Bldg.

Scranton:—630 Wheeler St.

RHODE ISLAND

Providence:—412 Bk. of Commerce Bldg.

TENNESSEE

Chattanooga:—Care of T. T. Wilson Co.

Memphis:—409 Empire Bldg.

TEXAS

*Dallas:—115 Field St.

Houston:—312 Chronicle Bldg.

San Antonio:—301 Travis Bldg.

UTAH

*Salt Lake City:—438 McIntyre Bldg.

VIRGINIA

*Norfolk:—536 Dickson Bldg.

WASHINGTON

Seattle:—Seaboard Bldg.

(Continued in next column)

(Continued from previous column)

WEST VIRGINIA

Huntington:—604 Robson-Frithard Bldg.

WISCONSIN

Madison:—2215 Chadbourne Ave.

*Milwaukee:—1200 Strauss Bldg.

EXPORT DEPARTMENT

New York City:—Room 1009, 90 West St.

CANADIAN PLANT

Trussed Concrete Steel Co. of Canada, Ltd., Walkerville, Ontario.

Turner Brothers

Bladen, Neb.

PRODUCT
Glass Cloth

Twentieth Century Sales Agency

1321 Arch St., Philadelphia, Pa.

PRODUCT

Woodworking Machinery

Union Metal Mfg. Co.

Canton, Ohio.

PRODUCTS

Metal Columns, Pergolas, Garden Fixtures, Building Entrance Lighting Standards and Exterior Wall Brackets.

TRADE NAMES

Union

SALES OFFICES AND AGENCIES

New York:—119 E. 42d Street.

Los Angeles:—685 Dotwiler Bldg.

Chicago:—236 E. Clark Street.

St. Louis:—1066 Arcade Building.

Jacksonville:—Union Terminal Warehouse.

Cleveland:—Sweetland Building.

MILLS AND FACTORIES

Canton, Ohio.

CANADIAN AND FOREIGN

DISTRIBUTORS

The Union Metal Mfg. Co. (Foreign Department), Canton, Ohio.

United Specialties Mfg. Co.

131st St. and 91st Ave., Richmond Hill, N. Y.

PRODUCT

Casement Window Hardware

U. S. Gypsum Co.

205 W. Monroe St., Chicago, Ill.

PRODUCT

Plasterboard, Insulation, Sound Deadening, Gypsum Products

U. S. Mineral Wool Co.

280 Madison Ave., New York City.

PRODUCTS

Mineral Wool.

Mineral Wool

SALES OFFICES AND AGENCIES

New York City:—U. S. Mineral Wool Co.

Chicago:—Insulating Products Co.

ILLINOIS

MILLS AND FACTORIES

Stanhope, N. J.

So. Milwaukee, Wis.

United States Quarry Tile Co.

East Sparta, Ohio

PRODUCT

Floor Tile

Universal Hoist & Mfg. Co.

280 Madison Ave., New York, N. Y.

PRODUCT

Hoists

Universal Portland Cement Co.

208 S. LaSalle St., Chicago, Ill.

PRODUCT

Portland Cement

TELL THE ABOVE COMPANIES YOU SAW IT IN AMERICAN BUILDER

Van Guilder System Concrete Bldg.
15 E. 40th St., New York, N. Y.
PRODUCT
Forms for Wall Construction

Variable Unit Cabinet Co.
Kokomo, Ind.
PRODUCT
Kitchen Cabinets

Vendor Slate Co.
Easton, Pa.
PRODUCTS
Roofing Slate, Slate Flagging, Flooring Slate.

Ventilouvre Co.
Bridgeport, Conn.
PRODUCT
Ventilators for Hotels, Apartments, etc.

Vitrolite Co.
133 W. Washington, Chicago, Ill.
PRODUCT
Enameled Tile

Wagner Mfg. Co.
Cedar Falls, Iowa
PRODUCT
Farm Building Equipment

Frank R. Walker Co.
536 E. Lake Shore Drive, Chicago, Ill.
PRODUCTS
Books and Records for Builders

J. D. Wallace & Co.
136 S. California Ave., Chicago, Ill.
PRODUCTS
Portable Woodworking Machinery, Saws, Band Saws, Jointers, Lathes, Mortisers, Sanders; Electric Hand Saws, and Electric Glue Pots.

SALES OFFICES AND AGENCIES
Boston, New York, Philadelphia, Baltimore, Buffalo, Pittsburgh, Cleveland, Detroit, Cincinnati, Louisville, Chicago, St. Louis, Milwaukee, Minneapolis, Kansas City, Dallas, Denver, Portland, Los Angeles, San Francisco, New Orleans, Lakeland, Birmingham and Atlanta.

Warren-Knight Co.
136 N. 12th St., Philadelphia, Pa.
PRODUCTS
Precision Transits, Surveyors' Transits, Contractors' Transits, Builders' Transits, Engineers' Wye Levels, Convertible Builders' Levels and Plain Builders' Levels.

TRADE NAMES
"Sterling"
MILLS AND FACTORIES
Philadelphia, Pa.
OFFICES AND AGENCIES
PENNSYLVANIA
Philadelphia:—136 N. 12th St.

Wasmuth-Endicott Co.
Andrews, Indiana
PRODUCTS
"Kitchen Maid" Kitchen Equipment Cabinets, Kitchenettes, Ironing Boards, Palmcooks, Dividers, and Wardrobes.

TRADE NAMES
"Kitchen Maid"
CANADIAN AND FOREIGN DISTRIBUTORS
Globe Furn. Co., Waterloo, Canada, Canadian Distributors and Mfrs.
IMPORTANT DEALERS
Local distributors in all principal cities.

Weatherbest Stained Shingle Co.
North Tonawanda, N. Y.
PRODUCT
Stained Shingles

Weber Insulations, Inc.
East Chicago, Indiana
PRODUCTS
Lavatex, Lavafelt, Insulation for all buildings.
DISTRIBUTORS OR JOBBERS
Representation wanted all cities.

Welt & Sons Paper Co.
Detroit, Mich.
PRODUCT
Insulating Paper

Western Pine Mfrs. Assn.
Portland, Ore.
PRODUCT
Wholesale Lumber

Wheeler, Osgood Co.
Tacoma, Wash.
PRODUCT
Doors

Wheeling Corrugating Co.
Wheeling, W. Va.
PRODUCTS
Metal Lath, Arch Lath, Diamond Mesh Lath, Conductor Pipe, Eaves Trough, Metal Roofings, Steel Ceilings and Steel Sheets.

TRADE NAMES
Wheeling
SALES OFFICES AND AGENCIES
Long Island City:—Van Dam St. and Nelson Ave.
Chicago:—2547 Arthington St.
Philadelphia:—1234 Hamilton St.
St. Louis:—1010 Spruce St.
North Kansas City:—14th and Campbell Sts.
Chattanooga:—Main and Boyce St.
Richmond, Va.:—8th and Perry St.
Minneapolis, Minn.:—816 Security Bldg.
CANADIAN AND FOREIGN DISTRIBUTORS
Long Island City:—Van Dam St. and Nelson Ave.

Wheeling Metal & Mfg. Co.
Wheeling, W. Va.
PRODUCT
Leadclad Metal Shingles

Wheeling Sanitary Mfg. Co.
Wheeling, West Virginia
PRODUCTS
Bath Tubs, Sinks, Laundry Trays, Urinal Stalls, Lavatories, Closet Bowls, Closet Tanks, etc.

TRADE NAMES
"Avon" Semi-Vitreous Porcelain
"Riverside" Vitreous China
"Porceliron" Enameled Iron Sanitary Ware
SALES OFFICES AND AGENCIES
CALIFORNIA
Los Angeles:—923 Santa Fe Ave.
ILLINOIS
Chicago:—315 Wrigley Bldg.
MASSACHUSETTS
Boston:—185 Devonshire St.
NEW YORK
New York City:—146th and Exterior Sts.
FACTORIES
Tiltonville, Ohio (Avon Ware).
Elm Grove, W. Va. (Porceliron Ware).
Wheeling, W. Va. (Riverside Ware).

David White Co., Inc.
Milwaukee, Wis.
PRODUCT
Levels and Transits

White Steel Sanitary Furniture Co.
Grand Rapids, Mich.
PRODUCT
Bathroom Cabinets

Vincent Whitney Co.
636-645 Mass. Trust Bldg., Boston, Mass.
PRODUCT
Casement Window Hardware

Wickwire Spencer Steel Co.
41 E. 42nd St., New York, N. Y.
PRODUCT
Wire Lath, Screen Cloth

C. K. Williams & Co.
Easton, Pa.
PRODUCT
Mortar Colors

Willis Mfg. Co.
Galesburg, Ill.
PRODUCT
Sheet Metal Building Products

The Wood-Regan Instrument Company, Inc.
South Orange, New Jersey.
PRODUCTS
Lettering Guides and Lettering Pens.
TRADE NAMES
WRICO
SALES OFFICES
New York City:—225 Broadway.
DISTRIBUTORS OR JOBBERS
See our ad on page 207 for list of principal dealers and distributors.

Woodville Lime Products
Toledo, Ohio
PRODUCTS
Finishing Hydrated Lime, Masons Hydrated Lime, Rex Cement Products Improver.

TRADE NAMES
Blubag Finishing Hydrated Lime
Ace High Masons Hydrated Lime
Rex Cement Products Improver
SALES OFFICES AND AGENCIES
ILLINOIS
Chicago:—220 S. State St.
MICHIGAN
Detroit:—14414 Dexter Blvd.
NEW YORK
New York City:—45 W. 46th St.
MILLS AND FACTORIES
Woodville, Ohio.

RETAIL DEALERS
Handled by dealers everywhere.

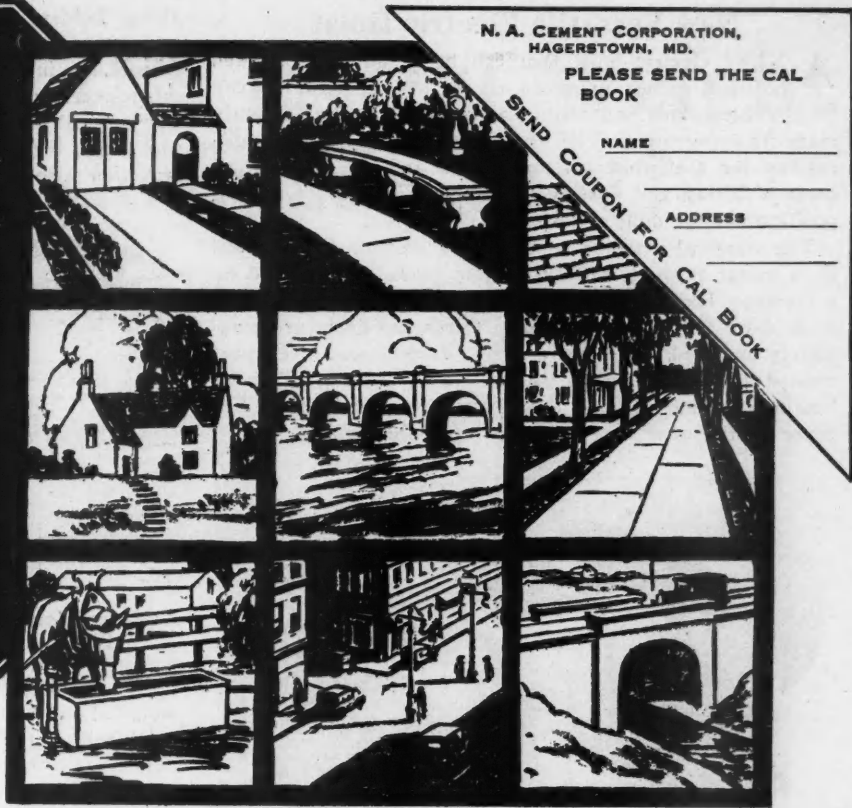
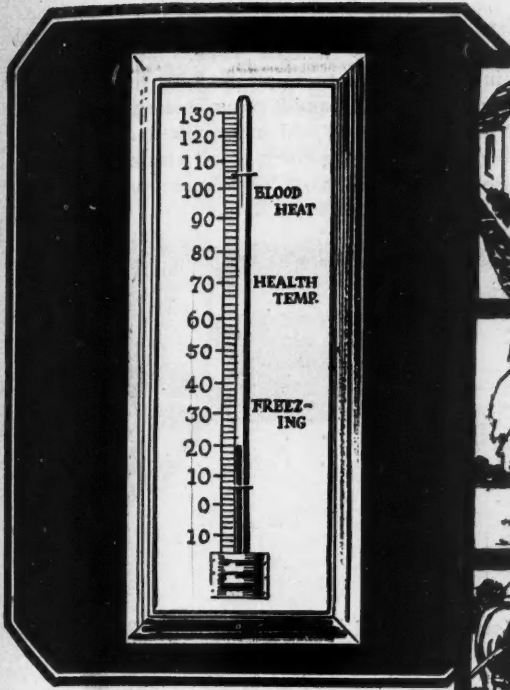
Wright Rubber Products Co.
Racine, Wis.
PRODUCT
Rubber Floor Tile

Youngstown Pressed Steel Co.
Warren, Ohio
PRODUCTS
Metal Lath, Corner Bend, Cold-formed Channels, Stuccomesh, Economy Stucco Nails, Cornerite, Expanded Metal, Coal Doors, Basement Windows, Steel Floor Bridging, Joist Pin Anchors, Wall Ties, Pencil Keds, and Tie Wire.

TRADE NAMES
YPS, Mahoning, Ideal, Z-Rib, Sharon, Youngstown, Protec, Parker.
SALES OFFICES
Asheville, N. C.:—Larchmont Apts., Apt. 2.
Boston, Mass.:—Room 916, 77 Sumner St.
Chicago, Illinois:—600 Wrigley Building.
Dayton, Ohio:—107 Mutual Home Building.
Denver, Colo.:—511 Mercantile Bldg.
Detroit, Mich.:—415 Coe Terminal Warehouse.

Dallas, Texas:—2422 Myrtle Street.
Los Angeles, Calif.:—1736 East 15th St.
Miami, Florida:—1013-16 Olympia Building.
Philadelphia, Pa.:—1314 Franklin Trust Bldg.
St. Louis, Mo.:—314 North Fourth St.
San Francisco, Cal.:—148 Hooper St.

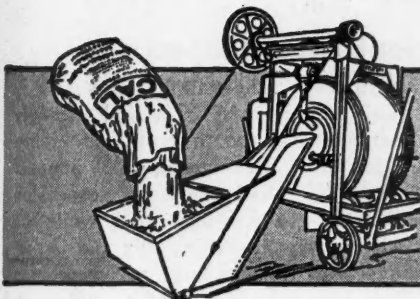
Zouri Drawn Metals Co.
Chicago Heights, Ill.
PRODUCT
Store Fronts



N. A. CEMENT CORPORATION,
HAGERSTOWN, MD.
PLEASE SEND THE CAL
BOOK

SEND COUPON FOR CAL BOOK

NAME _____
ADDRESS _____



~ just put it in the mix

CAL

When the Thermometer Drops



GENERAL OFFICES
126 STATE STREET
Albany, N. Y.

GENERAL SALES OFFICE
285 MADISON AVE.
New York City

BALTIMORE BOSTON
WASHINGTON

Address:
CAL DIVISION
HAGERSTOWN, MD.

FIGURE IN DOLLARS AND CENTS
What it would mean if you could safely use Portland Cement for concrete, mortar and stucco practically all winter.

CAL will help you realize these extra profits. By following our carefully compiled Schedule of Safety, Portland Cement mixtures treated with CAL can be used at temperatures which otherwise would be dangerous.

And right now is the time to anticipate those sudden early drops

in temperature. Safeguarded by CAL, your present jobs will be able to proceed to completion—and others begun; not postponed.

CAL cuts curing time to at least a third, effects economies, will not harm any mix and can be used by common labor. The CAL Book gives you every detail you need to know—and the coupon brings the book—promptly.

With these early cold snaps just ahead time is money. Don't waste it—mail the coupon, today.

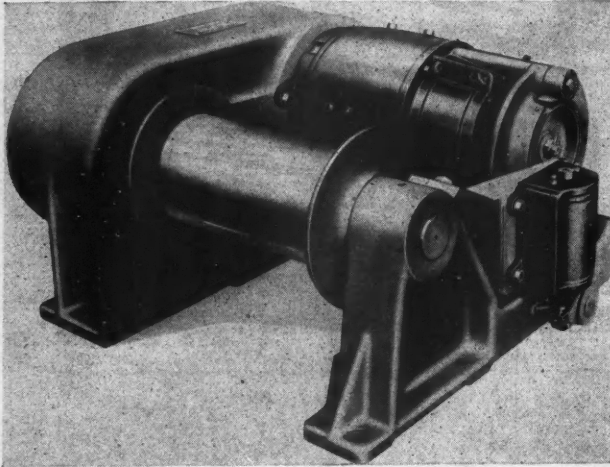
NORTH AMERICAN
C E M E N T
CORPORATION

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

New Versatile Electric Hoist

A NEW electric hoist that can be mounted in a fixed position, either overhead or on the ground, or can be placed on skids and used as a portable hoist has recently made its appearance. The uses for this hoist include applications for the work of contractors and, in general, all sorts of lifting and hauling that require a hoist in a fixed position can be done with it.

The standard machine consists of a smooth drum driven by a motor through a train of spur gears, all mounted on a common bedplate. It is furnished in sizes for handling loads from 500 to 4,500 pounds. Motor and gears are completely enclosed. The gears are of drop forged steel, heat treated and run in an oil bath. Hiatt, "high duty," roller bearings are mounted on the ends of all gear shafts. The cover of the gear case is easily removable.



This Electric Hoist Is Exceedingly Versatile in Its Application to the Contractor's Work, Handling All Kinds of Lifting and Hauling.

The drum has large flanges which prevent the rope from jumping the ends and give maximum storage capacity. One bearing of the drum shaft is lubricated by splash from the gears and the other by an Alemite fitting. The motor is a fully enclosed, ball bearing type, especially designed for hoist service. Either direct or alternating current motors can be furnished. The controller is of the single speed, reversing drum type. When desired, various modification in this hoist can be made, such as supplying grooved drums, air motors or steam motors, push button and remote control, holding and lowering brakes and extension shafts with additional heads.



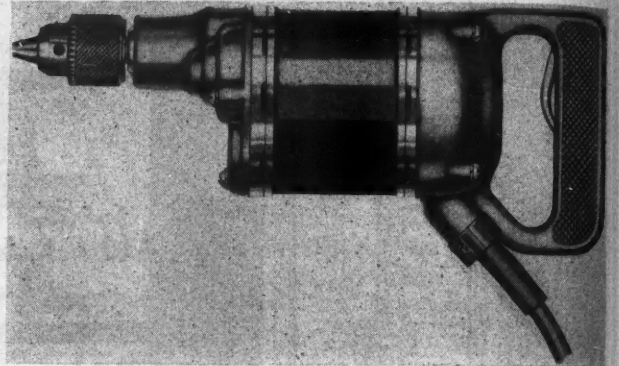
Universal Electric Drill

ILLUSTRATED herewith is a new 1/4-inch universal drill which has recently been brought out by a manufacturer of portable electric machine tools. It is equipped with a motor of the company's own design and manufacture, particularly adapted to the service. This motor is mounted in ball bearings, which in turn are fitted in a way to entirely eliminate the slip and creeping action so detrimental to the motor and other mechanical parts.

The gear on the armature shaft is removable. All gears are proportioned to give maximum strength and smooth operation. They are made of high grade steel, electrically heat treated. The compound gear shaft is supported with a bearing at each end. The chuck is fitted to a hardened and ground tapered spindle which is the universal standard in machine tool design to insure true running. Jacob's chuck is standard equipment.

An oversized chuck spindle, which is hardened and ground, is automatically lubricated through the gear case.

Brush holders with adjustable spring tension are mounted on a separate unit on a Bakelite yoke. This important feature, as in all large motors, permits brush adjustment when necessary. The end handle cover is a rugged casting carrying all pressure applied and independent of the motor and motor bearings, relieving them of all strain. This construction also affords the most convenient access to the



A Motor Mounted in Ball Bearings Fitted to Eliminate All Slip and Creeping Action Features This Drill.

carbon brushes for adjustment or renewal. The switch is mounted in the end grip handle and is of the automatic, quick release type. The complete drill weighs 6 1/2 pounds.



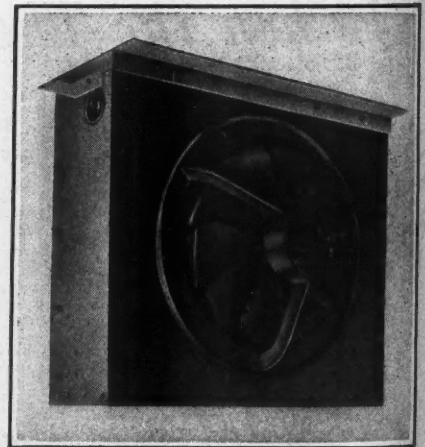
Efficient Unit Heaters

STRONG claims are made for the unit heater shown in the illustration. This unit is light in weight, strongly made, low in first cost and installation cost, and highly efficient. It is suitable for steam pressures up to 50 pounds. Units of two types are made. One type is for suspension from the wall or ceiling, like the one illustrated, while the other is constructed with an air circulating box and is recommended for buildings with high ceilings or where men work at benches. The first type is suited to rooms of ordinary height where workmen move about.

Units are made in four sizes—18-inch, 24-inch, 30-inch and 36-inch. The 18-inch unit, which delivers 2,125 cubic feet of air per minute, weighs only 186 pounds.

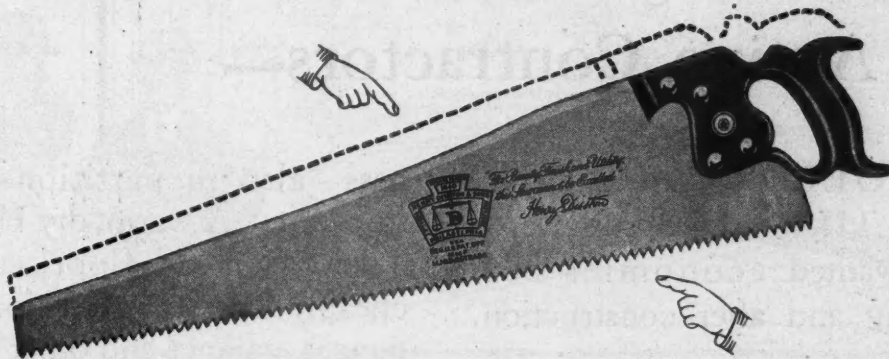
The construction is sturdy. The non-corrosive, brass bound, copper heating coils are enclosed in a heavy galvanized iron casing and the fan is all-steel, rigid and non-breakable. The fan equipment consists of an all-steel wheel, an all-steel tripod and ring for supporting the fan and motor and a fully enclosed motor large enough to operate continuously without ventilation.

The manufacturers claim that these unit heaters have a greater capacity than any other unit heater of the same weight and also that these heaters, installed, cost from 15 per cent to 50 per cent less than direct radiation, giving the same capacity and uniform temperatures.



A Light, Strong and Efficient Heater Unit Which Is Also Low in First Cost.

Why have the *extra* weight of a wide-blade saw?



When the Disston Lightweight cuts as *clean*, as *fast* . . . and *easier*

EVERY thrust of your saw, every return stroke—takes some of your energy.

The heavier the saw, the more strength required, and the more tiring your sawing will be.

You no longer have much need for a wide-blade saw. Modern building methods have taken much of your heavy cutting away.

So for modern sawing Disston has produced a modern saw.

Disston Lightweights! Less weight; less width to the blade. Easier on your arm for any sawing.

Made of hard, tough Disston Steel from our own steel furnaces. Tempered, tensioned, ground, set and filed by old masters of saw craft.

And balanced with that precision which carries all the force of your thrust direct to the cutting teeth.

Every Disston feature in a modern type of saw. You'll want a Lightweight as soon as you grip it.

Ask your hardware man to show you your favorite Disston in a Lightweight (Ship Pattern) model.

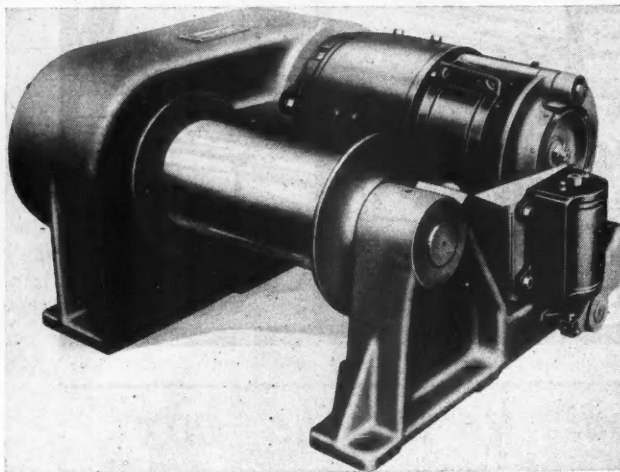
HENRY DISSTON & SONS, Inc.
Makers of "The Saw Most Carpenters Use"
PHILADELPHIA, U. S. A.

DISSTON

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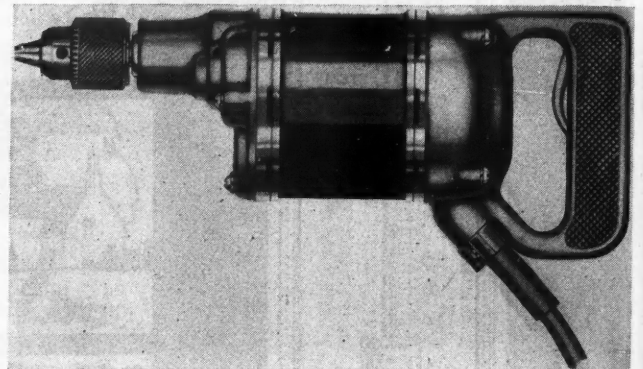
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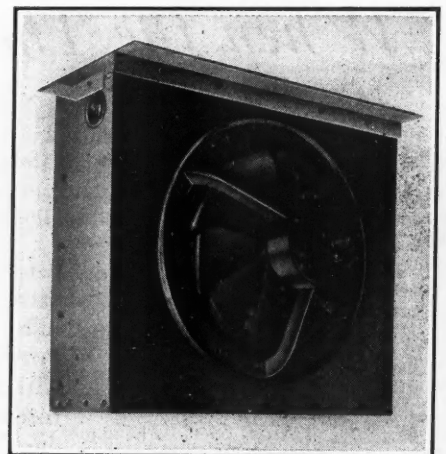
carbon brushes for adjustment or renewal. The switch is mounted in the end grip handle and is of the automatic, quick release type. The complete drill weighs $6\frac{1}{2}$ pounds.



Efficient Unit Heaters

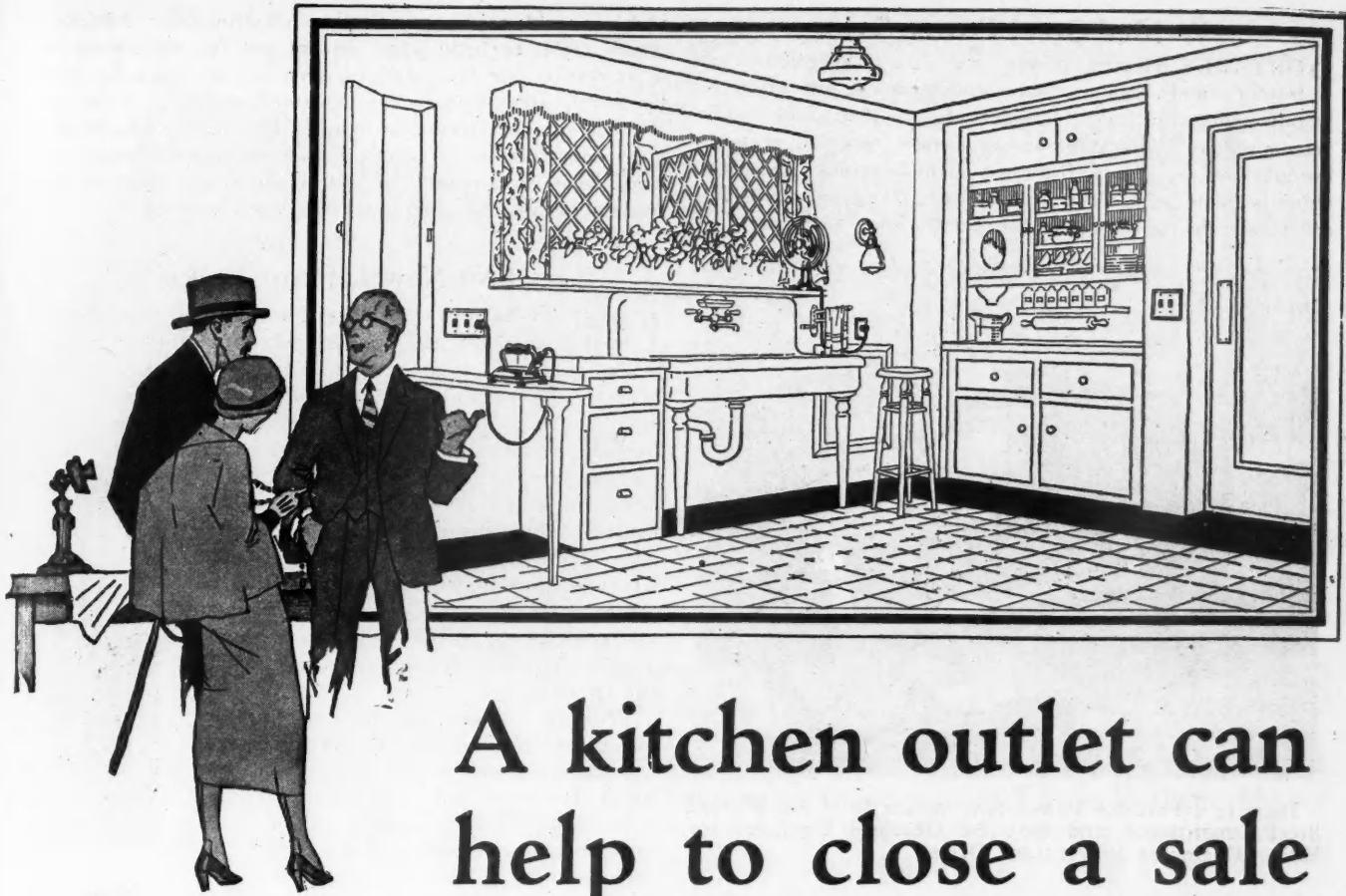
STRONG claims are made for the unit heater shown in the illustration. This unit is light in weight, strongly made, low in first cost and installation cost, and highly efficient. It is suitable for steam pressures up to 50 pounds. Units of two types are made. One type is for suspension from the wall or ceiling, like the one illustrated, while the other is constructed with an air circulating box and is recommended for buildings with high ceilings or where men work at benches. The first type is suited to rooms of ordinary height where workmen move about.

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A kitchen outlet can help to close a sale

What are the things that sell a woman a house? The little details of comfort and convenience! Things like a convenience outlet in the kitchen with a pilot to show when the iron is turned on.

Women have learned—largely through advertising of the G-E Wiring System—that these conveniences are easily within their reach—and they are demanding them. A house that is merely wired cannot hope to compete in selling appeal with a house that has a complete G-E Wiring System. More and more builders are realizing that this points the way to a small investment that brings a very profitable return.

A G-E Wiring System gives you selling points in every room.

Merchandise Department
General Electric Company
Bridgeport, Connecticut



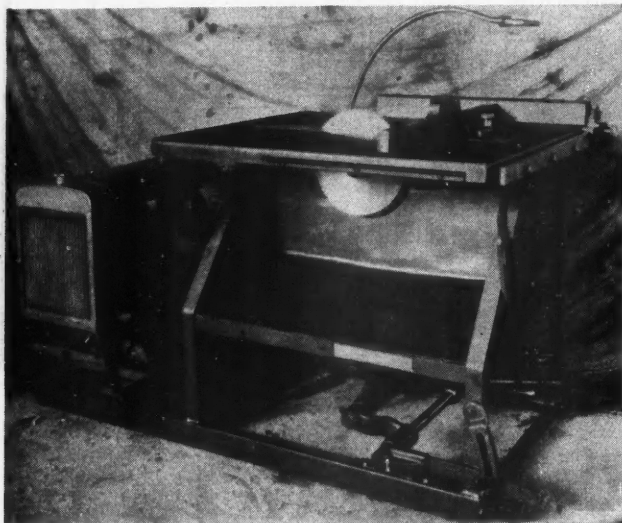
WIRING SYSTEM

—for lifetime service

GENERAL ELECTRIC

Welded Steel Power Saw

PORTABLE electric power saws for carpenters, contractors and builders have occupied the attention of woodworking machinery builders for a long time. The accompanying illustration shows a new machine recently brought out by one well-known manufacturer. This machine is made both for engine and electric drive operation, the former being shown in the illustration.



Here Is a Portable Power Saw Which Is of All Welded Steel Construction and May Be Obtained Equipped for Either Engine or Power Line Drive.

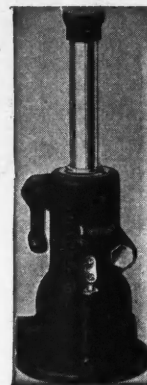
In the manufacture of this machine the stable arc welding process has been used with the resulting advantage of light weight and high resistance to all kinds of abuse. Being made of hot rolled steel welded together, the equip-

ment is said to be practically indestructible. Accidents which crush or bend parts do not put the equipment out of operation for long periods since repairs may be made by merely straightening the deformed parts. It is claimed that the manufacturing economies effected by the welded steel construction in place of castings have brought the price down to a point at which a widely extended field of usefulness for the equipment has been created.



Two New Lifting Jacks

FULL production is now under way on two popular models of jacks, the one for use up to three tons, the other for use up to 10 tons. This type of jack is said to be unusually versatile, the two sizes being applicable to all kinds of light duty and heavy duty lifting work. They embody novel applications of principles long recognized as of importance in the design of lifting devices and overcome difficulties which have prevented successful use of these principles in the past, it is said. There is absolute control of the lifting of the load the instant you stop pumping at any point of the stroke either up or down. The load positively holds its position at the stopping points.



With these jacks, any load within their range can be raised with little effort, steadily, smoothly and quickly. It may also be lowered without any jar or shock and can be instantly stopped at any position. The jack may be operated with short, inch-by-inch motions of the handle if desired. A full stroke is not necessary. This makes it particularly useful in cramped quarters. Also in dangerous positions this jack can be operated at a distance by using a longer handle.

These Jacks in Three and 10-Ton Sizes Are Highly Versatile.




Made
to Last
a
Lifetime

BRADLEY-MILLER & CO.
BAY CITY, MICHIGAN

EACH Bradley-Miller Frame of the type illustrated is shipped in two bundles comprising seven units. Give them to your carpenter and he can nail them up in less than 10 minutes into the finest quality frame you ever saw. Made of Michigan White Pine (*Pinus Strobus*)—no better wood for frames—and of the very best workmanship. Always free from warping, rotting and splitting.

Your dealer can supply you with Bradley-Miller Michigan White Pine Frames K.D. in bundles, in the pattern you like, for any size opening, for any type of construction on the same day you order them. That's frame service.

Ask your dealer or send the coupon below for complete details.

BRADLEY-MILLER & CO.,
1200 Marquette St., Bay City, Mich.

Gentlemen:—Please send me booklet describing Bradley-Miller Michigan White Pine Frames.

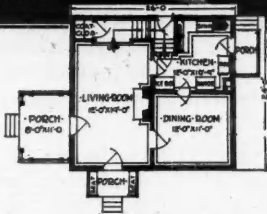
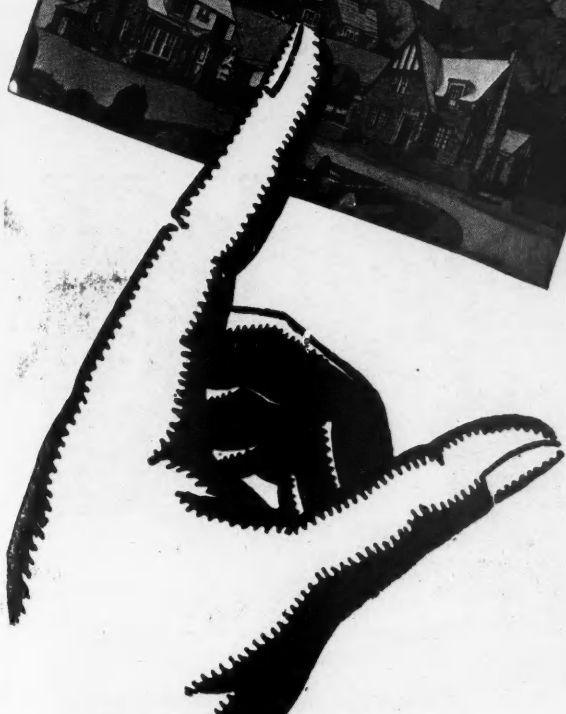
Name

Address

Dealer's Name

Address

Does your Dealer handle Bradley-Miller Frames?
.....



Saleable Homes

THIS 72-page book, "Homes of Lasting Charm" will help you sell homes, as well as build them. Shows you the way to keep above mere price competition. It contains 120 photos and floor plans of common brick homes, combining the best tested plans from former plan books, with 13 new designs. It differs from others in that every house presented has actually been built and lived in, making certain that no inconveniences will be encountered after the house is built. Also contains suggestions on the use of common brick for improving gardens and grounds. Complete working drawings and specifications covering any plan shown in the book are available at nominal cost.

A brick-built home is easy to sell

- because common brick gives real brick construction at lowest cost. The house can be attractively, yet profitably priced.
- because the popularity of common brick is nation-wide.
- because brick construction has more talking points than any other kind—permanence, comfort, low maintenance, fire protection, high resale value.

Have you registered with the Common Brick Association as a builder who knows how economically and properly to construct a brick built house? If so, inquiries resulting from advertisements will be turned over to you for follow up.

The Common Brick Manufacturers' Association of America
2131 Guarantee Title Building
CLEVELAND, OHIO

BRICK
Forever

At Your Service
These District Association Offices and Brick Manufacturers Everywhere

Boston	11 Beacon Street
Chicago	605 Builder's Bldg.
Cleveland, Ohio Association	2124 Guarantee Title Building
Denver	1735 Scout St.
Detroit	400 U. S. Mortgage Trust Bldg.
Hartford	226 Pearl St.
New York City	1716 Gr'd Cen. Term'l Bldg.
Norfolk	112 West Plume Street
Philadelphia	121 North Broad Street
Pittsburgh	702 First National Bank Bldg.
Portland, Ore.	906 Lewis Building
Salt Lake City	301 Atlas Bldg.
Seattle, Wash.	913 Arctic Bldg.

Send for "HOMES OF LASTING CHARM" and other literature

Brick Books for Your Use

- "Homes of Lasting Charm"—25c
- "Skinted Brickwork"—15c
- "Multiple Dwellings of Brick"—10c
- "Farm Homes of Brick"—5c
- "Brick, How to Build and Estimate"—25c

Check above, and send for any or all of these books.



MOTOR TRUCKS AND TRAILERS

More Ideas on Handling the Driver Problem

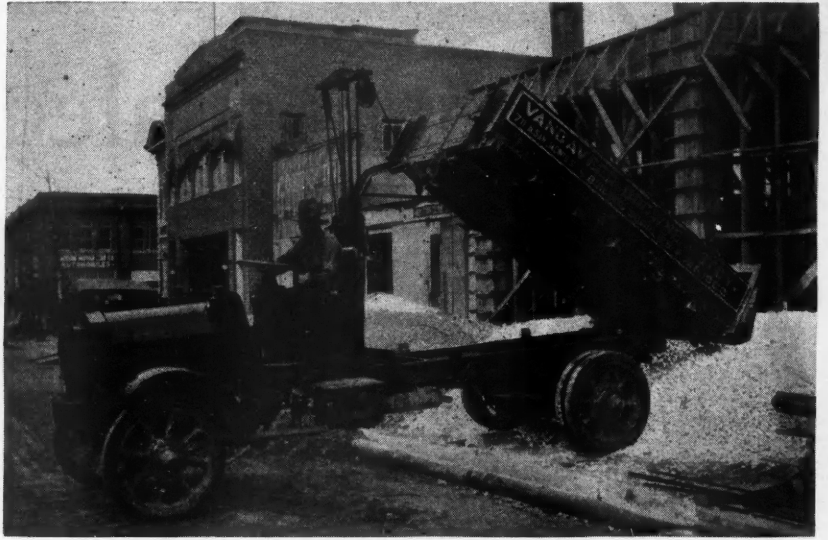
RECOGNITION that the accident problem is largely in the hands of the drivers, one concern in Los Angeles puts the following message over to all drivers in the form of a printed card in the truck cab:

"You are instructed to report any accident or damage to property of any nature. Violation of this rule will not be excused.

"Avoid all arguments with officers, pedestrians and drivers of other vehicles. You gain nothing by them and they may react against you. If an argument of any nature develops, hold your temper; explain in a gentlemanly manner your side of the argument. If your explanation does not satisfy the other party, inform him that you are not authorized to settle these questions, but are instructed to deliver your load and return; give him your name, truck number and truck license number, and ask him to report the accident to your manager. If the occurrence or accident is liable to be of a nature at all serious, obtain names of all possible witnesses, and then be on your way."

The way to make the driver willing and anxious to do better, is to create a spirit of competition which is not as difficult a matter as one might suppose. This consists of posting in a prominent position every month the gasoline mileages obtained on each individual vehicle, and the tire average at longer periods. Putting each man's name on the bulletin board with the figures of performance and perhaps remarks on the trend or comparison with the best results obtained, has a remarkably stimulating effect. There is no need for an unpleasant interview with a delinquent driver.

One operator of over 90 trucks, who instituted the bulletin board system some months ago has in nearly all cases increased his gasoline mileages from 100 to 200 per cent. A gentle "razz" by a man's mates is far more effective than an angry interview with the manager. The operator mentioned also carries this idea into the accident reports. Each month the names of the men involved in accidents are posted in large type on the board and this has been found the best deterrent yet devised. It all resolves itself into an appreciation of that human fact that most men can be led where they cannot be driven, and being shamed into better effort by their mates is a more potent incentive than being criticized into it by someone in authority.



Keep Your Truck Drivers Interested in Their Work. Experience has shown that there are many practical ways of accomplishing this necessary part of the transportation management.

Keeping Drivers Interested

There are many ways available for keeping your drivers interested in their work. Perhaps the most satisfactory method is the contest or bonus plan. One good way of working out a bonus plan is on a basis of merit and demerit points. A thing of this kind is not difficult to put in operation. Keep an individual account of each driver's record. Pay the standard local wage for the type of man you want and allow a bonus of so much per month payable to the driver if his merit and demerit points are within a specified average.

The following is a description of the way in which one firm has successfully carried out a plan of this kind. An individual record is kept on each driver, to which the employe may have access in the office of the assistant general manager. Credits are allowed for commendable acts, deeds of heroism and loyalty, good judgment in emergencies and courtesy. An accumulation of 75 demerits results automatically in discharge from service. If extenuating circumstances exist and under proper authority reinstatement is approved, it will be with 50 demerits against the employe's record. A second accumulation of 75 demerits will result in permanent discharge.

The company sets aside a fund equivalent to \$5 per month for each driver, which is credited to the record of the individual and paid to him on December 1 of each year

13
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Sizes:
6-cylind
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5-ton. V

Part of a Fine International Fleet down at Springfield, Mo.



We Have An Unequaled Organization To Serve the Builder's Trucks [[When They Are Internationals]]

136 Branches!

We have 136 *Company-owned* truck service branches in the U. S.—whose job is to protect your truck investment. *There's nothing else to compare with this!* And there are hundreds of International Truck dealers besides. Choose Internationals for years of low-cost hauling and be secure under the wings of INTERNATIONAL HARVESTER SERVICE.

Sizes: $\frac{3}{4}$ -ton "Special Delivery"; 4 and 6-cylinder Speed Trucks for $1\frac{1}{4}$, $1\frac{1}{2}$, and 2-ton loads; and Heavy-Duty Trucks to 5-ton. Write for special folders.

Company-owned branches in these cities:—

Aberdeen, S. D.
Akron, Ohio
Albany, N. Y.
Altoona, Pa.
Amarillo, Tex.
Atlanta, Ga.
Auburn, N. Y.
Aurora, Ill.
Baltimore, Md.
Billings, Mont.
Binghamton, N. Y.
Birmingham, Ala.
Bismarck, N. D.
Boston, Mass.
Bronx, N. Y.
Brooklyn, N. Y.
Buffalo, N. Y.
Cairo, Ill.
Camden, N. J.
Cedar Falls, Iowa
Cedar Rapids, Iowa
Charlotte, N. C.
Chattanooga, Tenn.
Cheyenne, Wyo.
Chicago, Ill. (3)
Cincinnati, Ohio
Cleveland, Ohio
Columbia, S. C.
Columbus, Ohio
Council Bluffs, Iowa
Dallas, Tex.
Davenport, Iowa
Dayton, Ohio
Denver, Colo.

Des Moines, Iowa
Detroit, Mich.
Dubuque, Iowa
Duluth, Minn.
East St. Louis, Ill.
Eau Claire, Wis.
Elizabeth, N. J.
Elmira, N. Y.
El Paso, Tex.
Erie, Pa.
Evansville, Ind.
 Fargo, N. D.
Fort Dodge, Iowa
Fort Wayne, Ind.
Fort Worth, Tex.
Gary, Ind.
Grand Forks, N. D.
Grand Rapids, Mich.
Green Bay, Wis.
Harrisburg, Pa.
Helena, Mont.
Houston, Tex.
Hutchinson, Kan.
Indianapolis, Ind.
Jackson, Mich.
Jacksonville, Fla.
Jersey City, N. J.
Joliet, Ill.
Kankakee, Ill.
Kansas City, Mo.
Knoxville, Tenn.
Lexington, Ky.
Lincoln, Neb.

Little Rock, Ark.
Long Island City, N. Y.
Los Angeles, Calif.
Louisville, Ky.
Madison, Wis.
Mankato, Minn.
Mason City, Iowa
Memphis, Tenn.
Miami, Fla.
Milwaukee, Wis.
Minneapolis, Minn.
Minot, N. D.
Nashville, Tenn.
Newark, N. J.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Ogdensburg, N. Y.
Oklahoma City, Okla.
Omaha, Neb.
Parkersburg, W. Va.
Parsons, Kan.
Peoria, Ill.
Philadelphia, Pa.
Phoenix, Ariz.
Pittsburgh, Pa.
Portland, Me.
Portland, Ore.
Providence, R. I.
Quincy, Ill.
Richmond, Ind.
Richmond, Va.
Rochester, N. Y.

Rockford, Ill.
Saginaw, Mich.
St. Cloud, Minn.
St. Johnsbury, Vt.
St. Joseph, Mo.
St. Louis, Mo. (2)
Salina, Kan.
Salt Lake City, Utah
San Antonio, Tex.
San Diego, Calif.
San Francisco, Calif.
Scranton, Pa.
Shreveport, La.
Sioux City, Iowa
Sioux Falls, S. D.
South Bend, Ind.
Spokane, Wash.
Springfield, Ill.
Springfield, Mass.
Springfield, Mo.
Springfield, Ohio
Syracuse, N. Y.
Terre Haute, Ind.
Toledo, Ohio
Topeka, Kan.
Utica, N. Y.
Waterloo, Iowa
Watertown, N. Y.
Watertown, S. D.
Wichita, Kan.
Williamsport, Pa.
Winona, Minn.
Winston-Salem, N. C.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. of America
(Incorporated) Chicago, Illinois

INTERNATIONAL HARVESTER TRUCKS COMPANY

if he has sufficient merits to his record to justify it. Employees must be with the organization continuously for six months to participate in the bonus. There is one exception to this rule. Employees laid off on account of reduction of force, through no fault of their own, are entitled to receive bonus pro rata for the period worked.

The merits are assigned on the following basis:

For meritorious service in avoiding accidents or unusual assistance or good judgment in emergencies, or any commendable act out of the strict line of duty, 10 merits are credited, on authorization of the head of department. A clear record for six months wins 15 merits.

The demerits are given for the following offenses:

	—Offenses—		
	1st	2nd	3rd
Missing route or reporting late for work...	1	3	5
Discourtesy or altercation with customers..	5	10	10
Smoking on duty.....	1	5	10
Reading on duty.....	1	5	10
Inattention to duty.....	1	3	5
Careless driving	5	10	10
Failure to report accident or defects coming to the attention of those whose duty is personally to report such.....	5	10	10
Criticizing the management or policy of the company except to superiors.....	10	10	10
Lack of neatness.....	2	5	5
Signals imperfectly given and respected....	3	5	10
Violating speed regulations.....	3	5	10
Rough handling	5	10	10
Failure to have proper lights and in working order	3	5	10

Court fines and accident expenses are demerited according to expense incurred and nature of case.

The garage superintendent of this company says: "As an indication of how our merit system works out in one respect, it may be interesting to note that 80 per cent of

our drivers last year had no accidents of any variety—even a scratched fender."

Other Driver Suggestions

Here are a few ideas that different concerns have tried out successfully to keep personal contact with drivers:

If one of your men is injured see that he gets first aid promptly; if he is home sick, visit him; if he has a grievance, listen to him. Personal contact with your men is a great asset, it prevents friction and makes for a happy, contented personnel. An annual outing is another form of personal contact.

Develop a savings fund that terminates on the pay day before Christmas. This encourages thrift, holds the organization together and comes in handy for Christmas presents. This money can be invested to bring a 6 per cent return for the benefit of the driver.

It is customary with most large fleet owners to pay their drivers and helpers for all public holidays (about 11 per year) whether they work or not. By withholding these 11 holiday pays until a few days before Christmas the men get it all in a lump sum at the time they need it most. It is obvious that the chauffeur will not seek another position at the holiday season when this extra pay falls due.

When a driver has been in your service one year you might give him a group type life insurance policy for \$500. At the end of two years a policy for \$1,000 would be in order.

How to meet the driver problem in periods of business depression has caused considerable concern. While the usual custom has been to lay off first, the men who were hired last, this policy is not always a good one.

A better method is to lay off the men in rotation for a day at a time and without regard to seniority of service. This method helps to hold the driver organization intact.

Unusual Service for the Contractor

Ryerson combined service on all steel products saves time, money and trouble

The Special Contractors and Builders Division of Ryerson Steel-Service is without parallel in the building fields.

This department has its own warehouses and provides complete service on all reinforcing for concrete, Steel Joist, Metal Lath, Steel Sash, and all the various steel building products are also included.

In addition, structurals, bars, plates, sheets, rivets, bolts, wire, etc., are furnished from the general steel departments. Trench braces, jacks, electric drills, and hundreds of other tools needed on every job are supplied by the machinery and small tool departments.

Contractors use the Ryerson Warehouses as if they were their own. Reinforcing steel, lath, sash and other miscellaneous materials are kept under cover until they are ready to use each item. Delivery is according to their schedule.

Large fleets of trucks and private switch tracks help provide service unequalled by any other source of supply.

All types of jobs are figured and lump sum or pound price quotations prepared.

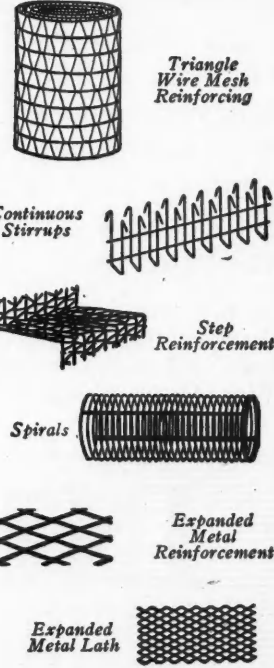
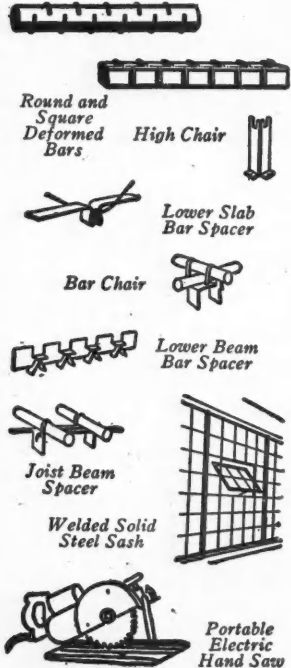
Write for Complete Information.

JOSEPH T. RYERSON & SON INC.

CHICAGO
CINCINNATI
BUFFALO

MILWAUKEE
DETROIT
JERSEY CITY

ST. LOUIS
CLEVELAND
BOSTON



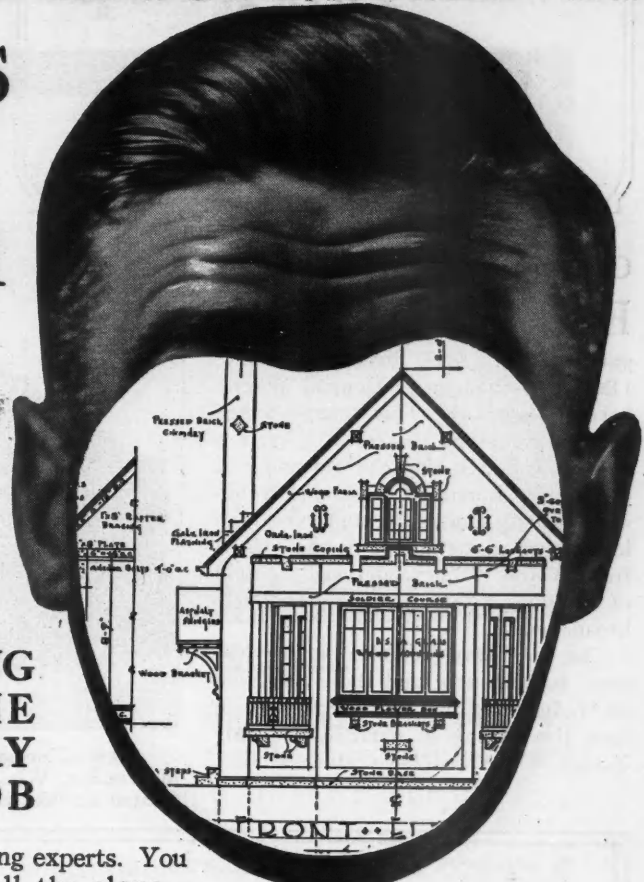
RYERSON REINFORCING-SERVICE

A FRANTIC CALL FOR MEN WHO CAN READ BLUE PRINTS

AND RUN JOBS AT \$4,000 TO \$12,000 A YEAR

SEE how easy it is now for any man to get ahead in the building game. Nowhere else does such simple training count for so much. Nowhere else are there so many countless thousands of openings as there are with contractors, builders and real estate firms, who are constantly calling for practical men who can read blue prints. Seven billion dollars will be spent this year for building. Trained men are at a premium in this gigantic industry. Untold thousands are needed at steady salaries far above the wage scale.

90 DAYS' EASY TRAINING PUTS YOU ON THE WAY TO A BIG-PAY "BLUE PRINT" JOB



NO longer is it necessary for building tradesmen to spend years learning all the "mysteries" of blue print plan reading. For now you can get the blue print training in three months that has taken others years to pick up "on the job." We train you at home in spare time by the fascinating "blue-print-method" with lessons that are as easy to read as your newspaper. You do not need more than a common school education. There is no hard, grinding study—the whole course is just like playing some interesting new game.

SIMPLE AND EASY AS A-B-C

These plans and lessons come to you from the oldest and largest school of building construction in the country. This is the kind of training that puts men quickly into the \$5,000 to \$15,000 a year jobs, and in contracting businesses of their own. You learn from actual blue print plans—

from practical building experts. You learn how to read all the plans—estimate all the costs—and supervise the entire construction of a building. You learn everything a foreman, superintendent or contractor has to know.

IF YOU LIVE IN OR NEAR CHICAGO

Visit our School for Builders, open day or evening. A thousand men attend each year. Enter any time. You can get the same training at home, by mail. Same plans; same lessons; same instructors. The coupon brings all facts Free.

A BIG-PAY JOB—OR YOUR OWN BUSINESS

With this quick, easy training, the building field is wide open to building tradesmen who want to become foremen and superintendents—or who would like to go into business for

themselves. Burgert, Ill., stepped into a Foremanship at a 200% increase in salary. Clifford Scholl went from laborer to Ass't Superintendent in 8 months. Marchand, La., writes: "My salary is now increased 196%." After finishing his training, Baker,

Ohio, made \$3,800 clear profit in 3 months as a Contractor. Depke, R.I., increased his salary 700% in 12 months.

If you really want more money—if you hope to own a business of your own—if you want quick advancement in the building business—decide now to get this training that you must have for a real success.

FREE Book

Simply mail the coupon below for an intensely interesting Free Book, "How To Read Blue Prints," and full information. See what amazing opportunities open up for you in the seven billion dollar building field. Don't delay. Act now. Simply mail the coupon below.



Chicago Technical School for BUILDERS

DEPT. N-120, CHICAGO TECH BLDG. 118 E. 26th ST. CHICAGO, ILL.

Chicago Technical School for Builders, Dept. N-120, 118 E. 26th Street, Chicago, Ill.

Send me without obligation, your free book, "How to Read Blue Prints," and full details of the course and the opportunities in the Building field. It is understood that no salesman will call on me.

Name
 Address
 City State

NEWS of the FIELD

Company Name Changed

EFFECTIVE September 1, 1927, the name of the Akron Barrow Company, 3140 E. 65th Street, Cleveland, Ohio, was changed to General Wheelbarrow Company. This change comes after 87 years of successful operation because it is felt that the old name of the Akron Barrow Company has become wholly inadequate and even misleading since the company has moved from Akron to Cleveland and its field of operation has been tremendously broadened.

The company remains under the same management and there has been no refinancing or reorganization; in fact, the change of name is the only change which has been made.



New Chicago Headquarters of the Milwaukee Corrugating Company, of Milwaukee, Wis., Which Will Be Ready for Occupancy About October 1, Is located at Western Avenue and Forty-third Street.

New Trade School Opened

ON September 19, the Board of Public Instruction, for the County of Dade, Miami, Florida, opened a new school which is an effort to operate a school of high standing for the teaching of the building trades and related work. Two carefully selected instructors are handling the work and others will be added to the faculty as fast as the number of students demands it. Full time day classes, part time day classes for apprentices and evening classes for journeymen are being held.

Saving Floor Space!

In an average small house, first and second floor space is probably worth about \$4.00 a square foot. When radiators occupy this space, it is practically useless for other purposes.

Cabot's Quilt built into the walls will reduce the size of radiators approximately 20 per cent. This means that your client will have saved, for his use, as much as \$40.00 worth of free floor space.

Add to this the saving in cost of radiators and reduced plastering and the annual saving in coal, and Cabot's Quilt becomes a necessity for any building.

Government tests (copies on application to us) show that Cabot's Quilt gives most insulation for least cost. Send for Quilt Booklet B-10.

FOR EFFECTIVE-ECONOMICAL HOUSE INSULATION, EMPLOY

Cabot's Quilt

IN SUCCESSFUL USE FOR OVER THIRTY YEARS

Samuel Cabot
Incorporated

MANUFACTURING CHEMISTS - BOSTON - MASS. - U. S. A. - NEW YORK - CHICAGO
PHILADELPHIA - KANSAS CITY - LOS ANGELES - MINNEAPOLIS - SAN FRANCISCO - PORTLAND
Cabot's Creosote Stains - Stained Shingles - Old Virginia White - Waterproof Collophane

The New Note in Kitchen Equipment

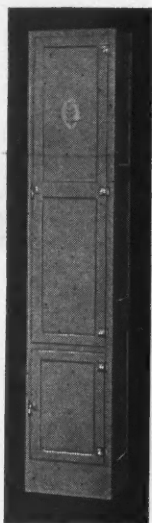
The great variety of designs and colors makes selection easy



A Sellers Kitchen Ensemble—cabinet, refrigerator, side closet, special cabinets

The almost instant acceptance of Sellers Sectional Kitchen Equipment has been due to its many outstanding features. Scientific construction—each unit is planned in accordance with the best principles of modern building; a rare charm of color and design; the many improved time and labor-saving features created by Sellers, have made Sellers the preferred kitchen cabinet in millions of homes.

To the builder, especially, the Sellers line offers many features which make it desirable. He will find Sellers Equipment adaptable to his every requirement. The line is so



Sellers Utility Section used alone or in combination with other units such as above.

extensive, in both design and purpose, over 40 units, that he may readily secure a combination to fit any requirement.

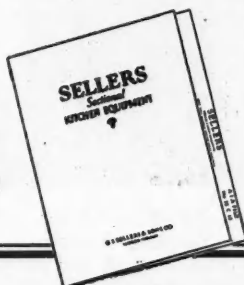
Installation is simple. Just a few bolts to be drawn up, in holes already provided. A quarter round is all that is needed to finish the job at the floor line.

And the cost is no higher than that of "built-in" equipment.

Write for our new complete, illustrated book which shows many Sellers units in color. It has already proved helpful to many.

G. I. SELLERS & SONS CO.
Department 610
ELWOOD, INDIANA

Ask your secretary to write us for this file folder NOW!



SELLERS

Sectional Kitchen Equipment

MORE

—FEET PER HOUR
—PROFIT PER JOB
—JOBS PER YEAR

The

American Universal

FLOOR SURFACING MACHINE

leads in quantity production and quality of work.

This means maximum profits for its owner—satisfied customers and steadily increasing business.

Floor Surfacing Contractors

equipped with "American Universals" are the big men in the game. Their services are demanded. They do the best work and make the most money.

You Can

easily become the Big Floor Man of your town. You can purchase an "American Universal" on a payment plan, requiring only \$75 down and a year to pay. Liberal allowance on your old machine, regardless of make.

NOW

Is the Best Time

to get started. Write at once for full details. No obligation whatever.

The American Floor Surfacing Machine Co.

515 So. St. Clair St.
TOLEDO, OHIO



Libbey-Owens Advertises Glass

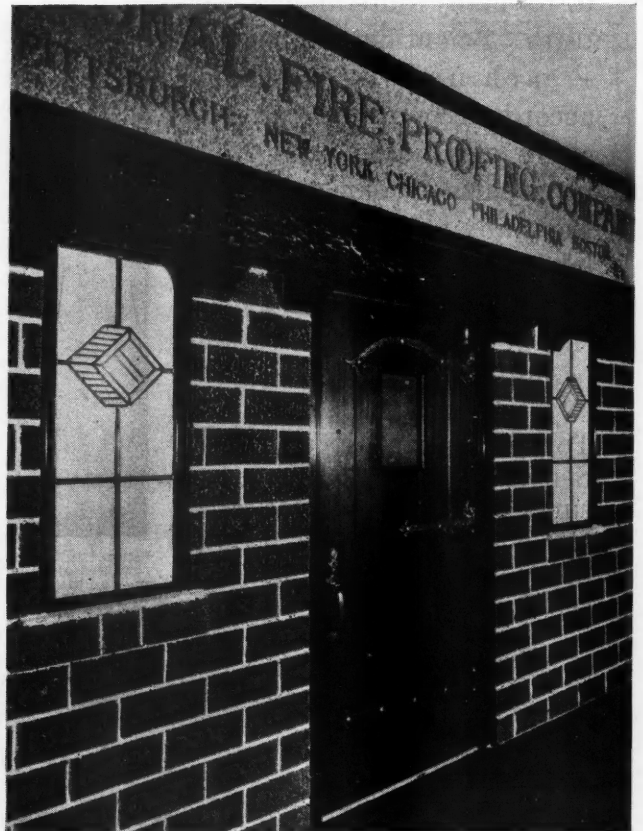
THE Libbey-Owens Sheet Glass Company, of Toledo, Ohio, has just inaugurated a national advertising campaign in the general magazines, building, architectural, glass and hardware trade magazines. This campaign is of special interest as it is probably the first really comprehensive attempt to awaken the public interest in better glazing, the glass industry having been slow to undertake public educational advertising.

Natco Office Built of Natco

AN unusual and highly practical combination of office and sample room has been effected in the new Chicago quarters of the National Fire Proofing Company, of Pittsburgh, Pa. The new office was designed by S. F. Heckert, managing director of the company who is an architect of note. The walls and partitions are constructed, throughout, of various types of Natco glazed hollow building tile, manufactured by the company. The outer wall is tapestry faced Tex-Tile and contains two stained glass windows. Over this wall is a massive, rough hewn beam supporting a sign which reads, "National Fire Proofing Company," and gives the location of the various offices. The main entrance is a heavy walnut door with hammered iron hinges and latch.

The reception room gives the impression of a porch and is surrounded by tile walls which illustrate the use of special shapes made by the company to frame openings and turn corners. The private offices are built of Natco double shell combed face tile and the dividing wall is Natco glazed plaster-saving tile.

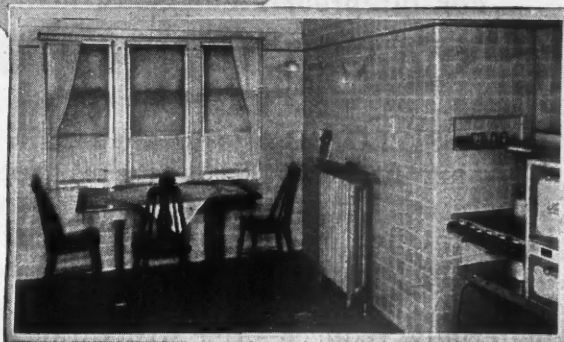
This method of construction not only makes highly attractive office, but also permits visitors to see the effect of the tile in walls, and to clearly understand the various construction methods used.



Entrance to the New Chicago Office of the National Fire Proofing Company, in the Builders Building. The walls are of tapestry finish Tex-Tile, one of the company's own products.



Analyze the Sale of Any House



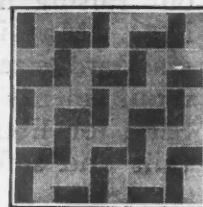
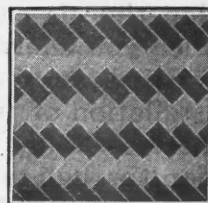
—and you will find that the decision to buy has generally been influenced by one of the smaller items of cost that make the home attractive, up-to-date and modern.

The home buyers of this country are *sold* on the desirability of good Tilework. We have helped to bring this condition about in national advertising, but good Tilework itself has done the most of it. The woman who inspects a home in which Association Tiles have been properly used is dissatisfied with her own house if it lacks this important labor-saving, permanent, attractive feature.

When she goes looking for a house you can depend upon it that she is looking for Tilework. Although representing approximately but one-fiftieth of the cost of the average house, the use of Tiles is leading an increasing number of prospects to say, "I'll take it."

Tilework represents the biggest 2 cents in the building dollar—the best investment you can make in putting up houses for quick, profitable sale.

Talk to Tiling contractors about Association Tiles. They are made in this country, and thus contribute to the prosperity which makes it possible for you to do business as a merchant builder.



ASSOCIATED TILE MANUFACTURERS

221 GRAYBAR BUILDING, 420 LEXINGTON AVE., NEW YORK, N. Y.

ALHAMBRA TILE CO., Newport, Ky.
AMERICAN ENCAUSTIC TILING CO., Ltd.
Zanesville, Ohio
BEAVER FALLS ART TILE CO., Beaver Falls, Pa.
CAMBRIDGE TILE MFG. CO., Covington, Ky.
FEDERAL TILE CO., Columbus, Ohio
GRUEBY FAIENCE & TILE CO., Perth Amboy, N.J.

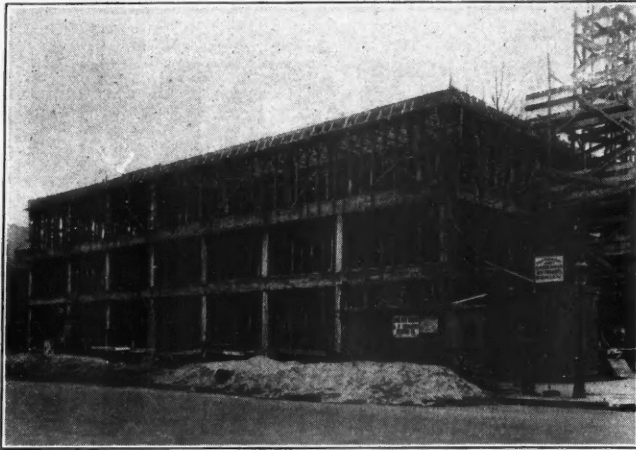
MATAWAN TILE CO., Matawan, N. J.
MOSAIC TILE CO., Zanesville, Ohio
NATIONAL TILE CO., Anderson, Ind.
OLD BRIDGE E. B. & TILE CO., Old Bridge, N. J.
OLEAN TILE CO., Olean, N. Y.
THE C. PARDEE WORKS, Perth Amboy, N. J.
PERTH AMBOY TILE WKS., Perth Amboy, N. J.

STANDARD TILE CO., Zanesville, Ohio
THE SPARTA CERAMIC CO., East Sparta, Ohio
UNITED STATES ENCAUSTIC TILE WORKS
Indianapolis, Ind.
UNITED STATES QUARRY TILE CO.
Parkersburg, W. Va.
WHEELING TILE CO., Wheeling, W. Va.

ASSOCIATION TILES

MADE IN U.S.A.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Store and Apartment Building, St. Louis, Missouri.
Built with Massillon Bar Joist Fireproof Floors.
Walter F. Sheehan, Architect, Mississippi Valley Con. Co., Contractors.

Massillon Bar Joists

For Fireproof Floor Construction



MASSILLON Bar Joists are used in building fireproof floors in all types of structures. This fireproof floor construction is scientifically designed to secure the maximum benefits from the materials involved. The dead load of each floor slab is materially reduced—the structural savings go right down to the footings—the construction time is cut to the minimum. And yet, when you analyze the layouts, you will be surprised at their simplicity—even to the installation of piping and miscellaneous floor accessories. These can be run in any direction through the web of the joists without raising floor levels or suspending ceilings. Massillon Bar Joists are made in standard sizes to meet all span and load requirements and are shipped from stock. Send for literature giving construction details and safe loading tables.

Other Massillon Products

Roof Trusses—Metal Lath—Steel Windows
—Bank Vault Reinforcing—Reinforcing
Trusses and Steel Forms—Fabricated
Structural Steel—Concrete Reinforcement.

The Macomber Steel Company

Successors to the Massillon Steel Joist Company
909 Belden Ave., N. E. Canton, Ohio

Canadian Manufacturing and Sales Agents:
Sarnia Bridge Co., Ltd., Sarnia, Ont.

MASSILLON

PATENTS PENDING

ROOF TRUSSES

Two Bars Top and Bottom



Solid Steel Welded Joints

Prepare Wood Utilization Manual

THE National Committee on Wood Utilization has undertaken the preparation of a manual on "Economics of Wood Utilization." The work is in the hands of a project committee on which all important consumer associations and professional bodies are adequately represented. This committee has invited all persons interested in this subject to submit blueprints, specifications and other information and data on any of the subjects which are covered in the outline which has already been drafted for the proposed manual. Communications should be addressed to the National Committee on Wood Utilization, Dudley F. Holtman, Assistant Director, Department of Commerce, Washington, D. C.

In announcing this invitation, the committee states that lack of adequate information on the subjects to be covered is the most important barrier in the way of realizing maximum service from wood in the construction field and it is thought that this work prepared and sponsored by a committee on which the American Institute of Architects, the American Society of Civil Engineers, the Associated General Contractors of America, the National Association of Builders' Exchanges, the American Society of Agricultural Engineers, the National Association of State Highway Officials, the American Railway Association and other similar groups of organized lumber consumers are represented, will be accepted by those whom it is intended to benefit, as a work unbiased, well considered and authoritative.



Studies Cement Developments

IN order to study recent developments in the manufacture and use of portland cement abroad, Professor Duff Abrams, Director of the Department of Research of the International Cement Corporation, is in Europe on a three months' trip. He will represent his company and also the American Portland Cement Association at the fiftieth anniversary convention of the Association of German Portland Cement Manufacturers at Berlin and at the International Congress of Testing Materials at Amsterdam represented his company and also the American Concrete Institute. He is visiting representative plants in Belgium, France, Switzerland and England.



20th Century Distributor

THE 20th Century Sales Agency, 1321 Arch Street, Philadelphia, Pa., has been made sole sales distributor for the United States and foreign countries for the 20th Century Woodworker, manufactured by the Cresson Morris Company, Philadelphia. This machine has been sold by the Cresson Morris Company for a number of years. The management of the new company is under J. A. Drake, who is well known in this field. The company will also carry a complete line of woodworking machinery.



L. T. Child Passes Away

L. T. CHILD, secretary of the Stewart Inso Board Co., St. Joseph, Mo., passed away at his home in Hutchinson, Kan., on August 22. Mr. Child had a number of business interests and was actively connected with the Davis & Child Co., Ford distributors, in Hutchinson and other points in Kansas. Prior to his residence in Hutchinson he was a member for a number of years in Richmond, Mo., operating under the name of the Davis & Child Lumber Co.

"R.I.W." TOXEMENT

(Patented)

**For Integral Waterproofing of
Mass Concrete, Portland Cement Mortar
or Stucco Construction**

"R. I. W." *Toxement* lubricates the mix due to its colloidal nature, increasing plasticity and workability. It gives a dense concrete or cement mortar mass that is absolutely waterproof, and results in proper and complete hydration of the cement.

"R. I. W." *Toxement* is but one of the specific Toch products, embracing technical paints and waterproofing compounds for every specific purpose, perfected by Toch Brothers, the acknowledged leaders in the field. This supremacy of Toch's "R. I. W." products is thoroughly proven by use in monumental building operations throughout the world. Whatever your need, there is either a special "R. I. W." product to meet your requirement or you can command the technical service of the laboratory staff for a specific recommendation where unusual conditions are to be met.

SEND THE COUPON BELOW for full and complete information on your particular waterproofing and damp-proofing requirements. Use the list of special "R. I. W." products at the left for a convenient check.



"R. I. W." PRODUCTS
for specific uses

- A. Waterproofing compounds.
- B. Damp proof coatings.
- C. Steel preservative paints.
- D. Concrete and masonry finishes.
- E. Caulking compounds.
- F. Miscellaneous products for special uses.

State requirements.

USE COUPON OPPOSITE!

TOCH BROTHERS,
443 Fourth Ave., N. Y. (or 2600 Federal St., Chicago)

Gentlemen—
I am particularly interested in further information about Toch Brothers' products for checked uses:

A B C D E F

Please send me complete literature on these subjects.

Name.....

Firm.....

Address.....

OVER 80 YEARS EXPERIENCE

TOCH BROTHERS

TECHNICAL PAINTS and WATERPROOFING COMPOUNDS

NEW YORK
CHICAGO
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LONDON

REMEMBER ITS WATERPROOF
R I W

division of
**STANDARD
VARNISH WORKS**

*Before You Have Another
Fireplace
Constructed
Know What the HEATILATOR
Will Do for You*



Fireplaces have been expensive luxuries. They have smoked and actually chilled the rooms by drawing in cold air from windows and doors. Ninety per cent of the heat has gone up the chimney. Now all is changed. Don't have another fireplace constructed in your homes—whether built under contract or for sale—until you learn all about the

HEATILATOR FIREPLACE

It insures an efficient, satisfactory fireplace. The principle is similar to the hot air furnace with its fresh air intake, its heating chamber and its warm air register or grille.

It heats and ventilates the whole room. Smokeless regardless of wind or weather. Saves time, material and labor in fireplace construction. Pays for itself in heat saved. No cold drafts. Plenty of pure heated air.

Write today for your free copy of "Fireplace Perfection." It tells and proves the whole interesting story.

Want to see a Heatilator? No obligation. Just say so and give your supply dealer's name.

HEATILATOR CO.
631 Glen Ave., Colvin Sta. P. O., Syracuse, N.Y.

Hoffman Uses Novel Publicity

ONE of the motion picture successes of the season, at least among the heating trade, is a two-reel picture which has been released by the Hoffman Specialty Company, of New York City, featuring, as co-stars, Ann Pennington, the famous stage beauty, and Hoffman Vacuum Valves. It is titled "The Heat Thief" and depicts a stirring drama of the eternal struggle of steam versus air in radiators. Miss Pennington plays the part of the suburban wife whose home is difficult to heat. She calls in the heating contractor and learns a few professional secrets in which the Hoffman valve plays an important role.

Another publicity feature which this company is exhibiting is a painting, by Normal Rockwell, the artist of magazine cover fame. This painting, called "Hot—You'd Be Surprised," depicts the comfort achieved by the use of Hoffman valves. It pictures a genial old fellow seated in his easy chair beside a radiator fitted with a Hoffman valve. This painting, reproduced in full size and color, is used as a window panel with a pivoted slot on the pictured radiator into which an actual Hoffman valve can be inserted. The panels are being distributed to Hoffman dealers throughout the country.

Organize New Company

THE Atlas Conveyor Co., recently organized, has opened offices at 20 S. Fifteenth Street, Philadelphia, Pa. Associated with this company will be Percival K. Reed, L. G. Weygandt and E. A. Thumlert, all of whom were formerly connected with the R. H. Beaumont Co. as chief engineer, eastern sales manager and general manager, respectively. The new company will design and build elevators, conveyors, skip hoists, coal weigh lorries, cable drag scrapers, ash hoppers, gates and kindred equipment for the handling and storage of coal, ashes and bulk materials.

The New MULTIPLEX Single Power Press Stripper

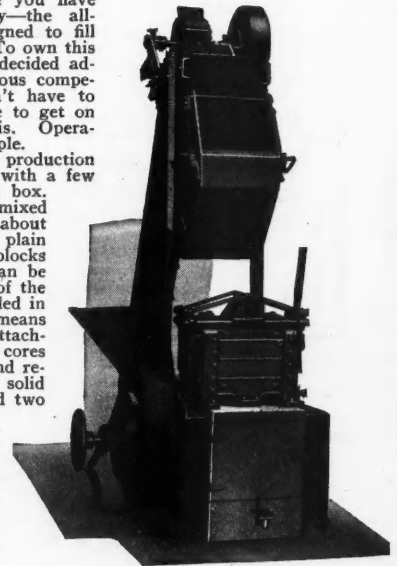
Here's the machine you have been waiting to buy—the all-purpose machine designed to fill your every demand. To own this stripper is to have a decided advantage over all previous competition. And you don't have to tie up a small fortune to get on a real production basis. Operation is extremely simple.

Here you have a production machine for any unit with a few changes of the mould box.

With the material mixed two men can make about 1200 perfect 8x8x16 plain blocks per day. Face blocks of the identical size can be made without change of the mould box which is filled in the same manner by means of our special filling attachment. By removing cores from the mould box and replacing tamps, 4x8x16 solid blocks can be produced two at an operation.

Blocks are pressed to uniform density from top and bottom.

This new stripper runs smoothly and noiselessly in oil. Features include self-aligning renewable bearings and complete inclosure of working parts.



Further Particulars and Price List on Request

The Multiplex Concrete Machinery Co.
ELMORE, OHIO



The Overhead Door!

After an invigorating ride on a clear, frosty fall night, when that warm fireplace beckons, nothing is to be compared to the comforting knowledge that the Overhead Door, now raised conveniently out of the way, has but to be lowered quickly and simply without banging or straining—and the car is safely tucked away.

Overhead Door Corp.
 Hartford City
 Indiana
 WEST KICKAPOO ST.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Chain Belt Makes Appointment

AN announcement states that Luther H. Bosnian has been appointed superintendent of the Park Street Plant of the Chain Belt Company, Milwaukee, Wis., manufacturers of conveyors, traveling water screens, chains and concrete mixers. Mr. Bosnian has been connected with the Chain Belt Company for the past eight years in the production department.

Arc Welding Competition

THE American Society of Mechanical Engineers has accepted the custody of \$17,500 offered by the Lincoln Electric Company, of Cleveland, Ohio, to be awarded by the society in a world-wide competition for the best three papers disclosing advancement in the art of arc welding presented under the competition rules. Three prizes will be awarded—\$10,000, \$5,000, and \$2,500—provided the

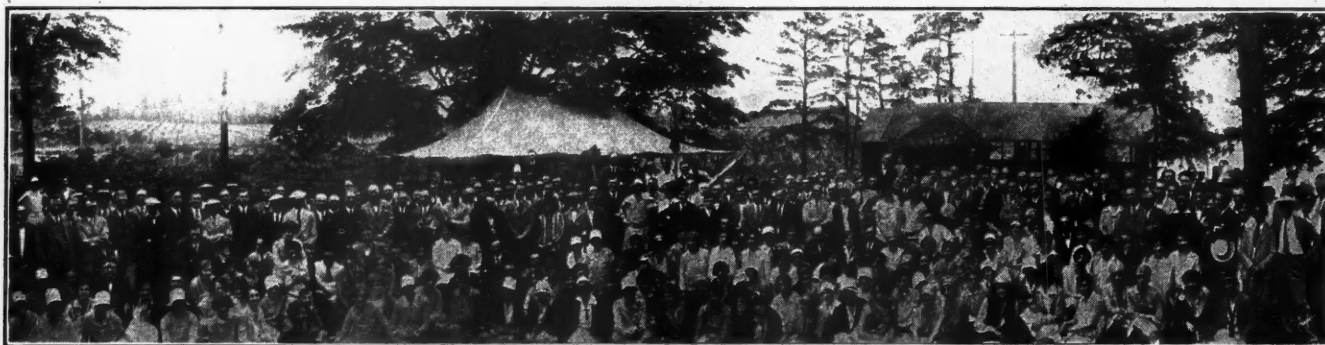
papers are of sufficient importance and value to justify, in the opinion of the judges appointed by the society, the awarding of such prizes.

Establishes New Work Office

IN order to maintain a closer contact with its customers in the East and handle its growing export trade, the National Lock Company, Rockford, Ill., has established an office at 10 Murray Street, New York City, with D. O. Anderson in charge.

Stanley Holds Picnic

THE Stanley Works and the Stanley Rule & Level Plant, of New Britain, Conn., recently held a combined outing of the office force of both companies. About 400 persons were present.



Here Is a Group of About 400 Persons Who Recently Attended a Picnic Held by the Stanley Works and the Stanley Rule & Level Plant, of New Britain, Conn., for the Office Forces of the Two Plants.



Italian Travertine

This New Wall Covering Applied to Plaster or Wall Board Makes a Permanent Wall

*Inexpensive—Easily Applied—Washable—Decorative
Built Up in Linseed Oil—No Surface Cracks*

Travrtile fabric imitating Italian Travertine Stone, made in any color or design satisfying every taste.

Non-repeating pattern of blocks removes the usual mechanical effect. Duplication of line on both sides of sheet saves labor and worry in application.

Travrtine-Wal-Ton-Tone on all walls assures permanency and beauty. Suitable for any room in the home, public halls, apartment houses, stores, corridors, etc. Contractors and Builders investigate Travrtile.

Send us the name of your nearest dealer. Also send at once for sample and literature



Spanish Pound Stipple

Lincrusta-Walton Co.

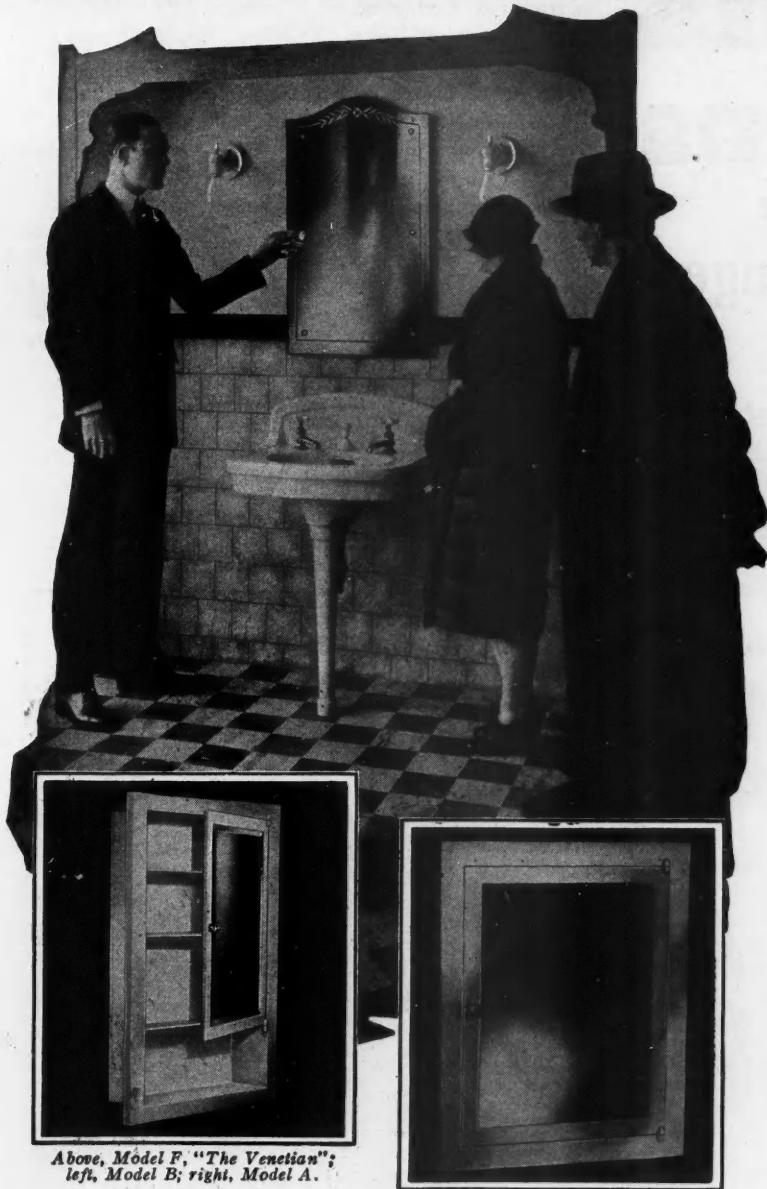
Division Tait Paper and Color Industries, Inc.

HACKENSACK

NEW JERSEY

(See list of Branch Houses in Distributor's Directory Section, page 175.)

4 LOGICAL REASONS for installing MORTON BATHROOM CABINETS



Above, Model F, "The Venetian";
left, Model B; right, Model A.

Many contractors and builders continue to buy wood cabinets because they believe they are cheaper. But when the cost of the mirror and hardware is added to the millwork, plus the extra cost of assembling and installation and the need of painting periodically, the relative costs of wood and MORTON steel cabinets are surprisingly close. Even were they the same, no honest comparison could be made in the two cabinets without a frank admission that the MORTON was far superior in every way.

Follow the trend for better bathroom cabinets by installing MORTON. Write for Catalog A-4 which gives the facts.

MORTON MANUFACTURING COMPANY
5161 WEST LAKE STREET-CHICAGO, ILL., U.S.A.

- 1** Made of steel—no warping—no checking—last as long as the building.
- 2** Many outstanding features of construction—electrically welded—shelf brackets and hinges are die-cast and rust-proof—adjustable friction catch—sanitary rounded corners, etc. Each cabinet shipped complete in individual corrugated carton—no extra parts to buy or assemble.
- 3** Finished with high gloss white enamel, permanently baked on—perfect harmony with other bathroom fixtures—no painting required at any time.
- 4** Installed in a few minutes—no time wasted.



MORTON MANUFACTURING COMPANY
5161 West Lake Street, Chicago, Illinois

Please send copy of Catalog A-4.

(Check business or profession)

- | | |
|---|--|
| <input type="checkbox"/> Architect | <input type="checkbox"/> Hotel Manager |
| <input type="checkbox"/> Building Contractor | <input type="checkbox"/> Realtor |
| <input type="checkbox"/> Building Supply Dealer | <input type="checkbox"/> Home Owner |

Name.....

Address.....

City..... State.....

They
are
the best



They
wear
the best

Millions and Millions

of People are Pushing
Bommer Spring Hinges
when opening doors

*Follow the line of least resistance
Your Dealer handles them*

Copyright 1927 by Bommer Spring Hinge Co., Factory and
Offices, Brooklyn, N. Y., U. S. A. Established 1876

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Edwards Sheet Metal Products," is the catalog of The Edwards Manufacturing Company, 401-417 Eggleston Ave., Cincinnati, Ohio.

Samuel Cabot, Inc., 141 Milk St., Boston, Mass., has prepared a new type of color cards to display the effects of its products upon different surfaces, in small sizes for general distribution and in larger sizes for architectural filing.

Sargent & Company, 51 Water St., New Haven, Conn., offers a booklet under the title "Silent Closing Doors," cataloging its line of door closers.

The F. E. Myers & Bro. Co., Ashland, Ohio, has published in book form, its 1927 pump catalog No. P. 59, covering the complete line of Myers pumps and water systems.

The Wisconsin Land & Lumber Company, Hermansville, Wis., has published a booklet which is described as a technical treatise on the modern color treatment of hard maple floors, interior finish and furniture and is most handsomely illustrated in full colors, and a smaller booklet describing the history and production methods of the company.

Chase Companies, Inc., Waterbury, Conn., has issued a pamphlet tabulating the sizes and weights of brass pipe and copper tubing.

The Leonard Sheet Metal Works, Inc., Hoboken, N. J., has published a booklet of detail drawings of its fireproof doors, windows, store fronts, skylights, etc.

Painting the modern, improved DeVilbiss way

Insures BIGGER PROFITS for You

How to provide for a worth-while increase in your profits: the easier, improved DeVilbiss way of painting will most successfully solve that part of your business problem.

Use of the DeVilbiss Spray-painting System enables you (1) to do more work, without increasing labor costs; (2) to give your customers an improved and cleaner class of work, on a greatly speeded-up schedule; (3) to make the work easier for your men, while increasing the production of each; (4) to become recognized as the progressive, outstanding painting contractor in your community.

There is further assurance of bigger profits in using the DeVilbiss Spray-painting System. DeVilbiss equipment is correct and complete in every detail; is built of highest quality materials by skilled workmen; is simple and dependable in every operation; is warranted to give long and satisfactory service. Then there is available to you at all times the unequalled DeVilbiss engineering and service facilities, developed out of over 35 years' manufacturing experience.

Investigate now the increased profits to be made painting the DeVilbiss way. Complete facts will be promptly mailed to you. Address—

THE DEVILBISS COMPANY
238 Phillips Ave. TOLEDO, OHIO
New York—Philadelphia—Chicago—Detroit
Indianapolis—San Francisco—Pittsburgh—Cleveland
Cincinnati—Milwaukee—Minneapolis—St. Louis
Windsor, Ontario



DeVilbiss
Spray-painting System

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trated on
popular N
Fixtures,
the Fran
been a fa
the reputa
Red Label

No Ha



Why it Pays to Look for Frantz Red Labels

Frantz Red Labels are your guide to the best in Builders' Hardware—an assurance of perfect satisfaction both to you and your customers.

Back of every label lies not only a guarantee of expert workmanship and highest quality materials but a reputation, 15 years old, that has been built up by constantly giving the best that human skill can produce.

Each Frantz product is carefully designed to fit the work for which it is intended, to do the work efficiently and to give long, satisfactory service.

Look for Frantz Red Labels on your Dealer's shelves—ask him for a demonstration of one or more items. Your own judgment will convince you of their many superior features. Send for your copy of the handy wall hanger that illustrates the entire Frantz line of Guaranteed Builders' Hardware. Hang it in a conveniently seen location as you will find it a great help in specifying or estimating the hardware for any home, garage or barn.

FRANTZ MANUFACTURING COMPANY
Dept. A-11, STERLING, ILLINOIS

The Frantz Hardware illustrated on this page is a set of popular No. 411 Garage Door Fixtures, one of the items in the Frantz Line that has been a factor in building up the reputation that makes the Red Labels stand for the best.

No Hardware is Genuine FRANTZ QUALITY without the Red Label

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER