THE SOUTHERN ARCHITECT.

ARCHITECTS' BUILDERS' AND HARDWARE JOURNAL.

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CONGRESS AND CONVENTION.

ELSEWHERE in this issue of THE SOUTHERN ARCHITECT we give a synopsis of the proceedings of the twenty-seventh annual Convention of the American Institute of Architects and of the World's Congress of Architects, both in session, last month, at Chicago.

In the case of the Institute little was done worthy of note, and the routine of such meetings alone was attended to. We suppose the overpowering attractions of the World's Fair are mainly responsible for the slim number of members present at the meeting.

The World's Congress of Architects, however, was well attended, and its proceedings were of the highest interest. The papers read are to be published in book form, and we advise every reader of THE SOUTHERN ARCHITECT, and all intelligent men interested in architecture and the progress of science and art, to secure a copy. The architect, the artist, the professional man must keep in touch with the evolution of the scientific, ethical and artistic thought of the age, and keep up with the front rank of the marching columns of progress, if he desires to make himself worthy of his profession.

These meetings of architects, artists and scientific men in Chicago will be of incalculable benefit to the world at large, but especially to our own country. An impulse in the direction of better methods, purer conception, nobler aspirations, broader views and truer principles is already felt. This power will grow and expand, blossoming into beauty, and ripening into fruit, such as few were daring enough to anticipate ten years ago. Let the South, especially, profit by these examples of the wonderful advances and achievements of the age. Architecture has a glorious future before it in the South. She calls upon her sons to fulfill her prophecy. Shall she call upon them in vain? In this, as it has been in other things, we are sure the South will be true to herself.

THE AUGUSTA EXPOSITION.

THE ARCHITECT notes with much interest the commendable spirit evinced by the citizens of Augusta in rallying to the support of the management of the Augusta Exposition, giving assurance that the exhibition there this fall will be a grand success in every feature. Augusta is well adapted to the holding of an exposition designed for the encouragement of the agricultural and manufacturing interests of the country. In a spirit of wisdom and sound patriotism the managers of the exposition have eliminated from it all features that are not conducive to the upbuilding of the interests these fairs were designed to subserve, and have enlarged their attractions to the agriculturist and manufacturer not only to attend the exposition but be represented there by the farm and factory.

THE ARCHITECT wishes the Augusta Exposition the large success it justly merits.

EVERYBODY in Arkansas, Oklahoma, and vicinity is in a flutter of excitement over the opening of the Cherokee strip. There is every probability of a great deal of activity in building and the building interests in the coming fall and spring.

THE day is not far distant when all lighting, heating and cooking will be done by electricity, and this not only in large cities where powerful electrical plants exist, but in medium and small-size towns as well, the claim being that small wires can bring the heat and light to a town from some distant power house, located near the source of coal supply, better than can freight trains or wagons.

A MEMPHIS man has a patent for an electrical vegetation exterminator, which is designed to kill the rank vegetation which grows along railroad beds and highways in tropical countries. The apparatus, including dynamo and engine or batteries, is placed on a car and furnishes a current which is sent through all the adjacent vegetation by means of a brush when the car is moving along the track. The same principle is applicable, of course, to the weeds and grasses of a cultivated field.

THE value of ozone as a purifier and its manufacture by an electric process has been very thoroughly gone into in England. Experiments have been carried on for over a year and a half in one of the large laboratories, which have embraced testing ozone as an exterminator of every conceivable sort of insect, germ and bacteria, as well as determining the exact cost of manufacturing it electrically on a large scale. The results as given out are on the whole very satisfactory, and seem to show that by the use of electricity ozone will shortly become a comparatively cheap commercial product.

PARQUETRY floors are made in all thicknesses varying from five-sixteenths to one and one-eighth inches. The thin material is glued on canvas which holds it in position until it is laid. It is fastened to the foundation floor by means of a small wire brad which is driven through from the surface, carefully set and the hole filled with putty, colored to match the wood into which the nail is driven. The thick parquetry is used principa ly in new dwellings where provision has been made for this thickness. It is very often the case that parties use this ornamental work, for borders only, filling the centers with plain dressed and matched oak or maple flooring. The principal advantage of the thick material is that it can be blind nailed, but as the thin material is much cheaper, it is that thickness which is usually used.

OLDHAM, England, has a furnace for the destruction of the town's refuse which burns at such a high temperature that its heat, applied to raising steam, furnishes sufficient power to more than cover the cost of the collection and burning of the refuse.

ETHICS OF ARCHITECTURAL COMPETITIONS.

A BILL was passed lately by the Senate and House of Representatives, and signed by the president, authorizing the secretary of the treasury to hereafter obtain designs for United States government buildings by competition among the architects of the country at large, and there is no doubt among those interested in such matters that this is a great step in advance.

The position of supervising architect, created at a time when our public buildings were less numerous, and scattered over a relatively small area, has become merely clerical in its functions, owing to the increased number of these buildings, amounting to as many as three hundred at one time, involving an expenditure of over $20,000,000 per annum, and spreading over the entire United States. It stands to reason that the designing of such a number of buildings, and the proper execution of them, had to be delegated to assistants. How pernicious the whole scheme, which was never satisfactory, has become is clearly demonstrated by the results obtained. As stated, therefore, the step is one in advance, because it changes the entire system, and distributes the work among the architects at large; and we may expect hereafter, under favorable circumstances, as good results for government work as for private work.

In view of the great influence that this decision will have upon architecture in this country, the question is whether the manner in which government work will be distributed is the best,—namely, by competition; and if it is, how the competition should be conducted so as to obtain the best possible results.

Architectural competitions, in the judgment of most architects, are a snare and a delusion. The principle of bringing men into rivalry in the solution of the same problem with the hope of producing the best possible work seems to be a correct one, but, even disregarding all other practical reasons, it fails to produce the desired results, because in the manner of presenting the solution—namely, by drawings—it is impossible, no matter how fully the drawings illustrate the idea, to give a complete conception of the work as it will appear. This would be true even, if the judges who select this work were always as able as those who are competing; and there is no doubt that in architecture, as in all other liberal arts and professions, the best results are generally obtained by selecting a man on his record, selecting him for what he has actually accomplished, and intrusting the work to him without competition.

A competition may result in bringing out hidden talents, and give new men opportunities which they would not otherwise secure, but the older men who have their legitimate work to attend to, which cannot be neglected, cannot be drawn into competitions for the mere sake of a chance to increase their practice, perhaps at the risk of unfair treatment, of prejudiced decisions, and of unreasonable demands upon their time; so that it is very seldom that the best men will consent to enter into competition, and the object of the same is thereby immediately defeated.

The system of paid competitions, which has been lately adopted (where a limited number of men are selected, and offered a nominal sum to present drawings, it being sometimes understood that all other architects can send in drawings without such remuneration), also fails to meet with the approval of the leading architects, for it is really a *gamble*, a *speculation*, and therefore the system does not fully overcome the difficulty.

It is natural, as long as architects are expected to furnish for $500 virtually preliminary drawings for work entailing very often an expenditure of $1,000,000, for which it is agreed the world over that architects shall charge 1 per cent., or $10,000, that the *best* men, the *busy* men, will not consent to compete, though the layman is only too anxious to have a competition on these terms.

If competitions are ever to be a success, they should in the first place, in the writer's opinion, be made such as to commend themselves to the attention of the *entire profession*. The men with established reputations will not look upon competitions favorably, and will not take part in them regularly, until a regular schedule has been established, making uniform charges for competition drawings, in the same manner as for other professional services. Such a schedule, with all allowance for the privilege offered to compete, will place the architect's services on a business basis, which is the only possible one. It will reduce the number of competitions and of the competitors, confining them to the most important buildings, and elevate the standard of the work. These will be the only terms upon which the leading men will *always* be willing to enter competitions for buildings other than public buildings.

In the matter of public buildings it is somewhat different, from the fact that the character of the building is one which not only promises renown and honor, resulting from possible success, but which gives the true architect the only opportunity for studying and designing monumental art; and for the sake of *this opportunity*, if the competition is properly conducted, the leading architects in this country will probably consent to compete.

Now, with the above conditions established, what is at present the object of a competition, and what should the object of a competition be?

The object of a competition at present seems to be a scramble for ideas. As stated to the writer by a committee-man in a paid competition for a large building: "We have ten competitors; we can only select one architect, but we expect to get at least $500 worth of '*ideas*' out of each one of the others."

In such competitions the result at the best is one of mere chance, depending on ingenuity of arrangement, on the scheme, and on everything in fact but architectural merit. A competition should not be the *selection of a plan*, but the selection of *an architect*. Selected not for his ingenuity, but for his composition and his skill; not for his scheme, which should be the program, and which should be furnished to him to develop, but for the ability with which he has accomplished this development.

To obtain this result, it is necessary, in the first place, that the program should be as complete as possible giving the architect all the information obtainable concerning the requirements of the building, the different spaces, their sizes, how to be occupied, in what relation to each other they are to be used, and in important buildings, such as a city hall, for instance, a short and concise history of the manner in which the government is conducted, the functions of the diff rent offic als, their relation to the community and to each other; as much, in fact, as will enable the architect to fully understand the purpose of his building and the spirit in which it should be designed.

All of these matters are not such as the architect should be left to find out; they should be given to him, and should be based on actual experience in such matters; this applies to all buildings, commercial as well as government buildings. Why should an architect, for instance, determine the most advantageous arrangement of an office building, when these conditions vary for every city, and for different parts of the same city, really for every new building, and are best decided by

the client in consultation with real estate men, and other experts, whose business it is to study such problems from their financial and purely utilitarian standpoint.

After the competing architects have had time to study the problem and to become familiar with the same, it would be wise for the committee and its experts to hold several meetings,—which all the competitors would attend—for the purpose of discussing the program and its requirements, and altering it if necessary, by mutual consent of a majority of architects, with the approval of a majority of the commiteee. The competing architects are then fully prepared to study the problem with full knowledge of the same, and they can then depart from the program as much as they dare risk, or as in their judgment would improve the same, and their duty becomes one of composition, of architecture.

Every other possible element of chance should be eliminated from the competition. Any special features, such as a dome, a tower, the location of any particular feature, the general disposition of the building on the grounds, or what is known as the block plan, even the style of architecture, if such a thing is admissible where it is to form an element in the decision, should be plainly stated. The question is not whether this or that man will think of having a dome, *but who is the man that can design the best dome, and this same principle applies to every part of the building.*

As is now usual, the number of drawings should be distinctly stated, and none others allowed. The scale of drawings should be uniform for all of the competitors, but as the drawings are technical, and of no value except as such, they should *always* be rendered technically, from an architect's standpoint. No perspectives should be required, in which the good drawing by a clever artist, employed to assist in rendering the same, may deceive a whole committee as to the merits of a composition.

The drawings should be plans, sections, and elevations, all rendered so as to establish distinctly the composition and the proportions, and made of such a character as to absolutely require to be passed upon by experts. For purposes of comparison the manner of rendering should also be determined. The number of drawings should *always* be as few as possible, only as many as necessary to place the composition fully before the jury, and their scale should be as small as practicable, and all drudgery and drawing should be reduced as much as possible, so as to enable the architect to devote his entire time to the study of proportion and composition, and not to the rendering of elaborate drawings. The busy men have not the time, the younger men have not the means, to enter into such elaborations. One full sized detail, or a large scale drawing, or both, of some prominent part of the building, drawn by the competitor himself, should be asked, to establish the ability of the architect to execute what he has composed, and this will prove of a good deal more value than the usual perspectives, and if a perspective is found necessary, for a committee for instance, it should be merely technical in its presentation, almost a *block perspective.*

Every other possible safeguard, both as to avoiding any chance hit on the one hand, and any possible unfairness on the other, should be resorted to. No communications should take place between competitors and committee, except in writing, and such communications and the replies should be furnished to every competitor. If the competition is a public one, all communications should be published in the newspapers.

The employment of the successful architect in accordance with the terms approved and adopted by the American Institute of Architects should be guaranteed, his competition drawings being considered as the equivalent of preliminary drawings. All other competitors should be guaranteed that their plans will be returned and will remain their property, and that they will not be used in part or whole, excepting by proper compensation, the value of which will be established by the jury.

In public competitions prizes should be distributed, the manner, number and amount being adjusted to suit the nature and importance of the competitions.

If the competition is a public one, the drawings should be sent without signature or mark; they should be simply numbered consecutively, as received, the envelope with the author's name being numbered likewise, so that no one, not even the author of the design, knows his number. Every possible chance for "wire-pulling" or undue influence should be guarded against, unless the competition is to become a mere farce. If the competition is a limited one, every drawing should be *signed by its author.*

After the jury have passed upon the drawings and reached a decision, the drawings should be exhibited before this decision is made official, to permit a full discussion of their merits, either by the public or by those interested, and avoid a possible blunder, which, once made, in most cases is not easily remedied.

The jury should then meet again, and revise their decision if necessary, otherwise confirm it, and the drawings should be exhibited again after the decision is made official, for such competitions would become educational for the public, but principally so for the profession. The exhibition before the decision might be limited to professional men, and under these circumstances it would be interesting, and perhaps prove a great success, to have a discussion of the plans, and a vote upon the same, prior to the final decision.

Concerning the manner in which the architect should be selected, there is absolutely no doubt in the mind of any one who has studied such matters that the jury should be composed of men any one of whom could build such a monument himself, not *construct* it, but *compose* it, *plan* it, and *build* it. It should consist of architects only.

The building, if well planned and well composed, will calculate and construct itself. The better the plan and the composition, the easier it will be to execute it, and no one but an architect can compose architecture. Do not select any man, therefore, to pass judgment for any other reason than what he has actually done.

If competitions can be conducted with the understanding that it is the *architect* that is wanted, the duty of the jury will consist in classifying the competitors according to merit. This jury should be selected from the very beginning; should consist of no less than three men, to avoid possible personal prejudices; should prepare the program, assisted by the committee and with the advice of experts and specialists; and should conduct the competition in consultation with the building committee, working together throughout. They should discuss the merits of the drawings and of the architects with the committee, and obtain fully their views, but at this point the committee should retire, and leave it entirely to the jury to decide the competition.

Such a jury would only be willing to serve in special cases, without compensation; and as only the best men can be selected, they would have to be well compensated; but if a competition is worth having at all, such matters should not enter into consideration, and if they do enter into consideration, there is no reason for a competition.

In conclusion, the writer would state that, *unless the purpose of a competition is a selection of an architect,* in his

judgment it would always be better not to have a competition, but to give the work to one architect, *on his record;* or to have a consultation of leading architects, employed and paid to discuss the problem from the practical and utilitarian standpoint, and with the assistance of experts and specialists, the client or committee, and such other persons as have had actual experience with the problem at hand, decide on the best solution, and establish the scheme; the architect being engaged beforehand and taking part in the discussion, or a competition being established on the lines of this discussion, the scheme of which would then form the program for the selection of an architect.

Many of the competitions which have taken place lately have suggested many very excellent features, have created a better feeling among the profession, and unconsciously contributed to the raising of the standard of work. It is really to Professor William R. Ware, of Columbia College, more than to any one person, that we owe the firm establishment in practice, and the general recognition by the public, of the general principles expressed in the Boston committee's report of 1876, of which he was a member, and which was the first comprehensive report on this subject in this country.—*John M. Carrere in Engineering Magazine.*

A TYPICAL CHICAGO "SKYSCRAPER."

Perhaps the finest of Chicago's "skyscrapers" is the Old Colony Building, now in course of erection under the enterprising Holabird and Roche, the architects. The building covers a block, and its height will will be sixteen stories and an attic, or 205 feet. Architecturally it is divided into three stages, the first being the lower three stories, the second being the next eleven, and the third being the fifteenth and sixteenth stories and the attic. The whole is surmounted with a heavily molded and bracketed cornice. Each of the north corners is treated with a circular bay with an interior diameter of thirteen feet, extended from the third story, inclusive, to the cornice. The south extremities of the east and west fronts are treated with corresponding semicircular bays. The windows of the east and west fronts are arranged in five panels, extending from the third floor up through the second stage, the intermediate pilasters accentuating the main supports of the building. On the Van Buren street front the windows, and especially the center windows, are spacious. Those on the fifteenth and sixteenth are in a single group of five and are separated by Italian columns extending through both stories. The result is a great deal of generous lighting and pleasing variety. The building as a whole bears a striking resemblance to a beautiful column with its base, shaft and capital.

The main entrance will be in the center of the Van Buren street front, but there will be a minor entrance in the center of the Dearborn street front, and a still smaller one in the center of the Custom-House place front. The Van Buren street entrance will be thirty feet wide, and the lintel will be supported, near each side, with a monolith column twenty-six feet, or two stories, high. Just beyond the columns will be a partition, with windows at each side and an arch, with sub-columns and capital in the center. Over the whole space, in large letters, will be the words, "Old Colony Building" This entrance will be one of the most imposing in the city.

The material of building will be novel. The first stage, of three stories, will be of dressed blue Bedford stone, the remaining stories of white brick, with semi-glazed white terra cotta trimmings, and the attic of white terra cotta only. The brick are in shape the long and thin kind called Roman brick, and in texture are close and hard. They come from Philadelphia and are called "paving brick," though seldom used for that purpose. It is expected that Chicago smoke will soil them, though they are too hard to absorb soot to any extent. It is designed to scrub the building off every year or two, so that it will constantly appear something like white marble.

Some of the tall buildings recently erected here have been planned with an absolute disregard of wind pressure; and in none of them has this feature been so well looked after as in the Old Colony Building. The steel is hot-riveted in all its connections, and so braced and tied together that it will withstand a much greater wind velocity than the Weather Bureau has ever registered. The architects have also introduced a system of fireproofing hitherto unknown in this city. That is to say, though the walls will consist in part of sixteen inches of brick work, there will be interposed between this brick and the steel work a sheath of hollow tile which more than doubles its security against a great heat.

Just within the Van Buren street entrance is a vestibule 20 by 28 feet in size and two stories high, with a staircase at each side leading to the banking rooms on the second floor. From this vestibule a hallway nineteen feet wide runs to the south wall of the building.

On the east side of this hall, three on each side of the Custom-House place entrance, will be six large, fast-running hydraulic elevators. The building will be divided so as to make from 300 to 500 offices, according to the plan of subdivision, the first two stories being designed for banks.

The floors, which Tiffany is designing, will be mosaic; the wainscoting of Italian white marble; the woodwork, oak; the ornamental ironwork, Baur-Barffe and fire-gilt. Every office will have its vault, especially on the banking floors; the windows will all be plate glass; the plumbing will all be electroplated old copper. Water, gas and electric lights will be used. In every respect the appointments will be the best, without regard to cost.

Speaking of art work in wrought iron the *Trefoil* remarks: Wrought iron for every purpose is now becoming very popular. It is used for grilles over the door, in the vestibule, for railings and balconies, etc., and wherever found seems to carry with it a recommendation of its own appropriateness.

The dull and yet lustrous color given to iron by the Bower-Barff process is peculiarly quiet and effective, and harmonizes particularly well with both wood and stone.

That the iron is practically rustless, and does not have to be cleaned with that scrupulous and constant care that brass work requires, recommends its use the more, while the artistic merit of the grilles now made speaks highly for the taste of the market that requires such work, and stands in strange contrast to the barren lack of even an attempt at any effect whatever in the cast iron models of the past.

The new Waldorf Hotel on Fifth avenue and Thirty-third street cost over $5,000,000, and the building is as completely fireproof as it can be made. At each end of the deep building a fireproof well, lined with fire brick, runs from roof to foundation, inclosing a steel stairway.

In the State of Vermont about $10,000,000 are invested and 6,000 men are employed in the mineral industries. The output last year of marble, granite, slate, brick, lime, copper, kaolin, mineral point, soapstone talc and scythe stones was valued at over $4,500,000. More than half this sum was represented in marble.

GEORGIA MARBLE.

Of all the products of the State of Georgia none have spread her fame throughout the world as her marble deposits.

Nearly all of the marble in the State and all now on the market is of a crystalline formation without stratification and with but the slightest traces of any foreign matter. The crystals are large and very translucent, and a careful microscopic examination of its structure shows points of special interest to architects and builders. In most of the marbles of the United States the formation is either granular or fossiliferous, both of which are unfit for exterior work on account of their rapid disintegration under atmospheric and other influences. The capacity of any building stone to resist the action of the atmosphere depends upon the closeness of its texture. By this it is not meant that it must necessarily be fine grained but that the grains, or crystals, fit one another closely without open spaces or pores into which moisture may enter.

The capacity of a stone to resist pressure depends partly on the minerals that compose it and partly upon whether it is granular or crystalline.

Crystalline rocks are stronger than granular when they are of the same mineral composition, because their crystals interlock and support each other as small irregular shaped grains can never do. Besides granular masses leave pores or unoccupied spaces to be filled with the cementing material of the rock or possibly left open and thus lessen strength.

As the two main points to be considered in any stone are its strength to resist crushing and its power of resisting the weathering effects of various climates the Georgia marble, which combines these to a high degree and can also be easily worked to shape, is sure to be sought after more and more extensively as these virtues become known. I shall take up these salient points of the superiority of Georgia marble in their regular order, giving the official figures of some of the most prominent chemists in this country.

DURABILITY AND MAINTENANCE OF COLOR.

Professor J. B. Johnson, of the Washington University Testing Laboratory, St. Louis, Mo., says of this stone: "When a building stone is free from disintegration and discoloring agents in its own composition, as this stone certainly is, its durability and also its permanency of color depends almost wholly on its solidity or on its freedom from porous cavities which will absorb water.

This density and solidity of structure I have examined in three ways: by determining the amount of water it will absorb, by microscopic analysis, and by finding its specific gravity.

A three inch cube was soaked in water twenty-four hours and then weighed. It was then dried over a steam coil at a temperature of about 215° F. for twenty-four hours and weighed again. The difference in weight divided by its dry weight is the percentage of its weight which it will absorb as shown by the accompanying certificate. The absorption is less than $\frac{6}{100}$ of one per cent. and is the smallest absorption I ever knew of any building stone to have."

Granite absorbs from $\frac{2}{10}$ to 3 per cent. Limestone from $\frac{4}{10}$ to $6\frac{1}{2}$ per cent. This remarkable density is borne out however by the other two tests. A specimen of the stone was prepared on a glass slide of thickness of $\frac{1}{1000}$ of an inch and examined under a microscope having a magnifying power of 150 diameters. It was found to be composed entirely of crystals with no visible openings or crevices of any kind for the absorption and retention of moisture. This is one of the most crucial for the density or solidity of a stone and it stood the test perfectly.

The specific gravity was found to be 2,724, or its weight 170 pounds per cubic foot. This is a remarkable weight for such a stone, being almost as much as granite."

CRUSHING STRENGTH.

Professor Johnson says of the crushing strength of this marble:

"Six three-inch cubes were tested upon a U. S. Standard Riehle Testing Machine of 100,000 pounds capacity. I was only able to break four of the specimens. The other two stood 112,000 and 109,300 pounds respectively without crushing, which was a much greater load than the machine should be allowed to carry.

"The lowest test was 76,200 pounds, or 8,330 pounds per square inch, the highest being 12,210 per square inch without crushing. The average of the six tests is 10,200 pounds per square inch, but since two of the six specimens remained uncrushed, it is perhaps fair to say the average crushing strength is not less than 10,500 pounds per square inch. This is equivalent to 750 tons per square foot.

"The fractures showed a remarkably uniform composition without seams or lines of cleavage.

"The strength of granite is from 700 to 1,000 tons per square foot. The strength of limestone and marble varies from 350 to 700 tons per square foot.

"The average strength of best sandstone is about 500 tons per square foot.

"The average strength of the St. Louis pressed brick is about 250 tons per square foot.

"It is thus seen that the strength of Georgia marble is about equal to that of granite, and greater than any other form of building stone or brick."

RESISTANCE OF HEAT.

It has long been known that marble and limestones will stand a greater heat than all other stones. Dr. Hiram A. Cutting says in his "Notes on Building Stones":

CONGLOMERATES

are shown to be unfit for building purposes. All are injured at 700° F.

SLATE

will not endure intense heat, for it is injured at 800° F.

GRANITE UNSAFE.

Of twenty-two varieties of granite from all parts of the United States and Canada, some were injured at 600° and all at 800°. Dr. Cutting says:

"As to granites, that a *heat sufficient to melt lead is sufficient to injure granite walls beyond the capability of repair, otherwise than by taking down*, and it is almost, if not quite, impossible to burn out a granite building of small size even without damaging the walls. *In fine, the damage, in my opinion, is equal to that of a wooden building under similar circumstances.* All insurances upon granite buildings should therefore be rated sufficiently to cover a total loss if the walls are heated to 800°; and, as a rule, they would be much damaged at 500°."

SANDSTONE OR FREESTONE, INCLUDING BROWNSTONE.

Of twenty-three varieties some are injured at 800°, all but two at 900°, and all without exception at 1,000°.

LIMESTONE.

Of seven varieties all but one are injured at 900°, and that one at 1,000°.

MARBLE.

Of seven varieties, including all those commonly used for building purposes, all are *uninjured* at 800°, all but one are *uninjured* at 900°, and three remain uninjured at 1,000°. Of these three Dr. Cutting writes that they "are each uninjured until the heat is sufficient to change them into quicklime, which heat must exceed 1,200° and be continuous for some time."

From the foregoing it is plainly seen that *marble* stands heat better than any other building stone. Dr. Cutting himself thus expresses it: "Taken as a whole the heat resisting capacity of building stone stands as follows: 1, *Marble*; 2, Limestone; 3, Sandstone or freestone; 4, Granite; 5, Slate; 6, Conglomerates."

The examination and tests of Georgia Marble show a greater resistance to the effect of heat than any known stone. This fact has never been denied.

CHEMICAL ANALYSIS.

Georgia marble is the nearest to purity in its chemical properties of any of the marbles in use for general purposes, as following analysis will show:

Carbonate of lime	97.32	per cent.
Carbonate of magnesia	1.60	"
Silica	.62	"
Iron protoxide	.26	"
Aluminum oxide	.25	"
	100 05	per cent.

Very respectfully,

JOHN C. JACKSON,
Assayer and Chemist.

Prof. Leonard P. Kennicott, Professor of Chemistry Worcester Polytechnic Institute, Worcester, Mass., says: "Chemically, the marble is very pure carbonate of calcium. An analysis I made about six months ago showed that the marble contained over 98 per cent. of carbonate of calcium."

SUPERIOR ADVANTAGES IN BUILDING.

For large buildings, Georgia marble possesses qualities superior to any material offered. Its immense strength, remarkable beauty and non-absorbing qualities, when understood and appreciated, must place it in front of all other building materials.

For residences, let any gentleman, who lives in a sandstone house, tell his experience with the moisture the stone absorbs in a protracted rainstorm, and compare the walls with a front that would be perfectly dry in one hour's sunshine. Compare the beauty and general appearance of a marble front dwelling with any of the ordinary building stones. Examine the window sills and fronts of the best red and brown sandstones, and see where the constant absorption is gradually lifting up scales and starting the process of disintegration and decay. Georgia marble will remain unchanged in all climates, without disintegration, and the price brings it within the reach of anybody desiring to build a first-class structure.

The ease with which it can be worked, when its density and hardness are considered, is very remarkable. It saws a little harder than Italian marble. It copes truer and better than any other. It planes, drills, turns into columns, vases, urns, etc., equal to any stone. It breaks and dresses for Rockfaced work and covers much easier than granite, and can be worked for buildings as readily and cheaply as the best sandstones.

TILING.

Georgia marble is undoubtedly the most valuable material yet produced for stairs and floors. With a density and strength capable of sustaining 12,000 pounds per square inch, it will wear many times longer than other marbles and will always retain an even surface, and not hollow out like floors made from softer material. Its crystalline properties make the floors look bright and attractive, and as it is absolutely non-absorbent, tobacco juice, coffee, ink or other liquids that permanently deface and stain other marbles can easily be removed.

MONUMENTAL AND CEMETERY WORK.

The same properties and qualities that make Georgia marble so superior for building work apply directly to monuments, tombs and memorial work in cemeteries. The first consideration is durability, the second is beauty. Georgia marble combines both in greater extent than any other material obtainable

GENERAL USES.

Owing to its purity in carbonate of lime, as shown by the analysis, it is susceptible of the most beautiful polish and finish; and with its great variety of shades and colors, it is especially adapted for mantels, wainscoting, counters, plumbers' work, furniture tops, and all ornamental articles, and interior decorations. Its non-absorbing qualities make it the best material known for imposing stones, printers slabs, meat market and fish counters, drug stores, soda fountains, saloons, lager beer coolers, and all places where liquid or oily matter comes in contact with the surface. The labor saved and the cleanliness enjoyed in the use of Georgia marble will many times repay the trouble and expense of substituting it for any other material now in use.

THE DEPOSITS.

The immensity of the deposits of marble in the State of Georgia must be seen to be appreciated. Commencing near Tate, Ga., sixty miles north of Atlanta and forty miles northeast of Marietta, the deposit extends in broken fields to the North Carolina line, though the most available and finest qualities lie in Pickens county, formerly a part of the Cherokee Nation property. In the beautiful valleys of this county, covering an area of about three hundred and fifty square miles, lie treasures the extent and value of which are destined to astonish the world.

HISTORICAL.

The marble fields of Georgia and the Cherokee Indians are closely identified, as the first marble quarried in the State was done by this powerful tribe, and many specimens of their handiwork can be seen in Pickens county at this day.

On November 28th, 1785, the Cherokees acknowledged the sovereignty of the United States and were confirmed in the possession of their hunting grounds, embracing much of the present State of Tennessee, with portions of northern Georgia, Alabama and Mississippi. Civilization, however, kept encroaching upon them and narrowing their limits until, in 1818, their once immense possessions had been reduced by treaties and sales to less than 8,000 square miles, and that all in the mountains of northern Georgia.

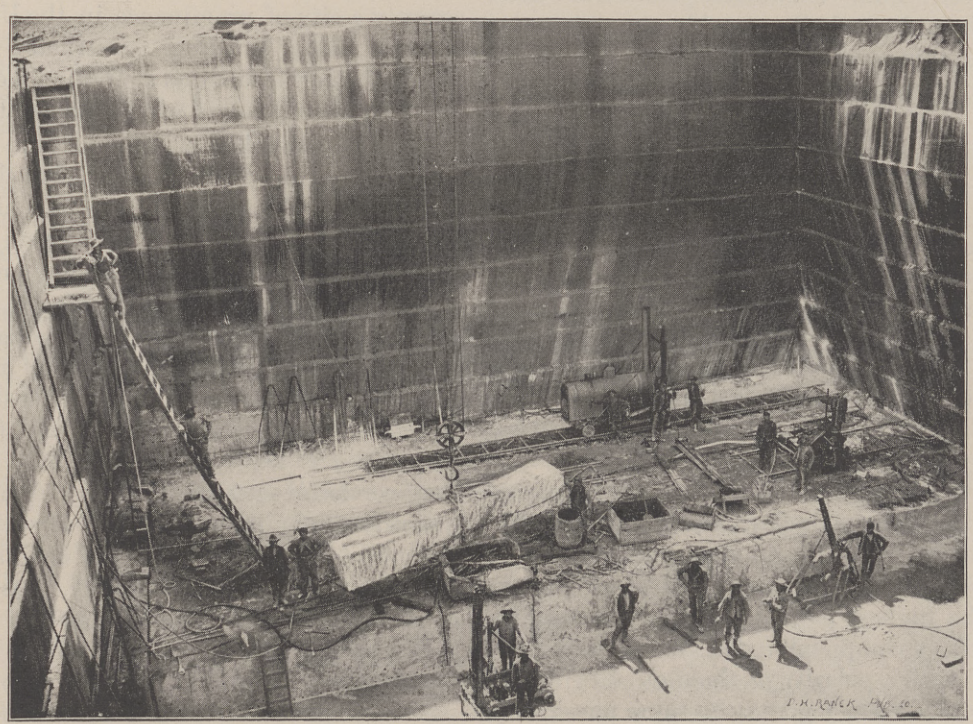
In 1838, but forty-six years ago, the last remnants of the once powerful tribe, reduced to about 2,700, were removed to the Indian Territory, and their remaining lands reverted to Georgia, one of the original thirteen States.

About 1839 this Cherokee country was divided into lots of 160 acres each, and distributed among the citizens of Georgia by a lottery wheel, and all titles to said property commence with the fortunate drawee of that date.

Soon after this distribution, one Samuel Tate, a southern gentleman of the old school, with a strong will and great force of character, foreseeing that at some future

day this property must be of great value, spent his lifetime in securing, so far as possible, the title to many valuable tracts of land in this marble district, and during his day many thousands of dollars were received for marble taken from his lands. This was cut, dressed and finished by hand labor, and hauled over the mountains of northern Georgia by ox teams, where the little monuments and headstones stand to-day as fresh and free from atmospheric changes as the best Italian marble.

Until very recently this section of Georgia has been isolated from the rest of the world. With the nearest railroad at Marietta, forty miles away, in a mountainous country, with turbulent streams, no bridges, it was not until the building of the Marietta and North Georgia Railroad between Marietta and Knoxville that development was possible. This road furnishes means to get in the machinery to the quarries, hauls the coal to run the mills, and enables the quarrymen to put their products on the markets of the world; and in addition to the vast commercial benefit, the road, as it winds through the icturesque mountain ranges and over beautiful streams



Creole Quarry, No. 1, Georgia Marble Co.

that meander the rich valleys of Georgia and Tennessee, is one of the finest scenic routes on this continent.

In the following pages we have briefly attempted a description of the different properties in the field, which will enable the reader to form an idea of the value of this great industry.

THE GEORGIA MARBLE COMPANY, TATE, PICKENS COUNTY, GEORGIA.

It was in May, 1884, that this company obtained its charter from the State and organized with a capital of $1,500,000, with Mr. H. C. Clement, of Chicago, as president, and Mr. O. F. Bane, of the same city, as secretary and treasurer. The company immediately entered into possession of the Tate marble lands in Pickens county, and several other valuable tracts in the same vicinity, in all about seven thousand acres, by lease and purchase, giving them possession by ownership and control of more valuable marble property than any other combination in the world.

The first work of the Georgia Marble Company, necessary to reach the outside world, was the building and equipment of six miles of railway. To do this it was necessary to exercise considerable engineering skill, and the expenditure of a large amount of money.

The result has been highly satisfactory; commencing at the Marietta & North Georgia Railroad at Tate, Ga., this splendid piece of railway property by a double V system of grades descends easily into the beautiful valley in which lie the quarries. The first idea the visitor gets as he leaves Tate is that marble must be very abundant in the immediate vicinity. The railroad, in addition to being built of 90 pound steel rails, is ballasted with marble. The culverts through the mountain streams are built of the same stone, and as the train dashes by the large settlement of the company's houses, he sees that each house has a marble chimney that would cost from $500 to $1,000 in any city in the United States. By the time the train reaches the mills, two miles from Tate, the apparent waste of material ceases to be a wonder, for here in a valley five miles in extent is the largest deposit of marble in the world. It underlies the valleys, outcrops on the hills and rises up in mountains. Dozens of streams rush down the coves and meander through the valleys on beds of solid marble.

Following immediately the completion of the railroad was the erection of the mills, which are by far the most complete, convenient and best equipped in the world. The plant has been built at a cost of nearly $800,000, and every modern appliance for quarrying, sawing, finishing, turning and polishing has been purchased, and every labor saving device to cheapen the cost of the product is used. The stone from the quarries adjacent to the mills are lifted by derricks and delivered to a steam "traveller," a most ingenious machine that lifts the blocks and carries them a distance of five hundred feet to the mill without other handling, and with perfect ease and despatch that at first glance seems impossible. This traveller has a storage capacity of two thousand blocks, four feet six inches by six feet, and the five hundred feet of railway track it runs on enjoys the distinction of being the finest in the world. The 90 pound steel rails of the track are not laid on crossties but are fastened to blocks of marble six feet in length, four feet in width and two in thickness. The cost of a mile of such road in any other section would be $500,000, exclusive of the grading.

The traveller is built of steel, and practically, like the track it runs on, is the best machine of its kind to be had.

THE QUARRIES.

Creole Quarry No. 1, illustrated above, was opened in July, 1884, and its product immediately established

the fame of Georgia marble. The stone from this quarry is a dark mottled marble, very white ground with dark blue and almost black mottlings, making a rich and beautiful effect. Under the microscope the crystals appear perfectly white, but mingled with them and contained within them are exceedingly small bead-like masses of intense blackness composed of some foreign material. In the darkest stone, which is nearly black, this foreign matter was shown by the microscope not to exceed three or five per cent. of the whole mass, but so transparent are the crystals of marble that the dark beads are seen at great depths, and thus give a tint to the stone which is much darker than their actual amount would seem to warrant. This stone cannot be surpassed for strength or resistance to the weather, and for this reason the demand for "Creole" has been so great, both for monumental and building purposes, that the company has been unable to meet its demand.

The dimension at the top of this quarry is 68x73 feet, but as will be seen, by reference to the cut, has been tunnelled until it has widened to 104½x117 feet on reaching a depth of 130 feet. Four "channelers" and three "gadders," operated by a large boiler, enable the thirty-six men employed in this quarry to lift a "floor" four feet six inches deep, yielding 55,000 cubic feet, every two days.

In spite of this large output the demand for "creole" necessitated the opening of another quarry adjacent to the first which has been called Creole No. 2. This quarry was opened seventy-five by eighty-five feet and is now forty feet in depth and is yielding about the same stone as Creole No. 1.

KENNESAW QUARRY.

The marble from the Kennesaw is a pure white, whose separate crystals are nearly as transparent as glass. Even when they are combined in the rock so that the light is broken up as by snow, the mass is quite translucent, though more than an inch in thickness. In this mass the crystals, which are about a quarter of an inch across, shine brilliantly. No unoccupied space can be discovered by the highest powers of the microscope, as the crystals interlock completely. The most perfect solidity, combined with a polarity of the molecules in the crystals which binds them together far more powerfully than the cohesion of ordinary granular marbles can do, is found. This is shown very clearly by the micropolariscope, where the appearances presented by perfect crystals of Iceland Spar are everywhere seen. This solidity and polarity combined render the stone capable of sustaining an enormous crushing strain as compared with any of the granular marbles, and enable it also to resist the action of the air very perfectly.

This quarry was opened originally seventy-two by ninety and like the Creole has been tunnelled to the depth of eighty feet.

The company has never been able to supply the demand for this stone but expect to be able to do so as soon as the new Kennesaw No. 2, which will be one hundred and ten by ninety feet at the top, is opened. A few blocks of the top rock have been taken off the Kennesaw No. 2, and shipments from it will be made in the course of a few weeks. This quarry immediately joins the Kennesaw No. 1 and yields the same quality of marble.

THE ETOWAH.

This quarry produces a variety of rich, high colored marble, ranging through pink, rose and salmon tints, to dark green shades marvelously blended in beautiful and cloudlike forms, as if a reproduction of all the magnificent southern sunsets that blessed the world through the countless ages these stones were forming. No two blocks yield the same blending, though all are of similar colors.

This marble, for interior decoration, table tops and furniture, where great beauty and richness is desired, stands without a rival. It has also become necessary to open a new quarry of this stone to meet orders. Etowah quarry No. 2 will be yielding marble in a few days.

CHEROKEE.

This quarry, eighty by ninety feet and sixty feet in depth, produces white marble with dark blue spots and clouds, and a bluish gray with dark spots. In building and monumental work it is comparatively white in appearance. It is similar in composition, as the Kennesaw, to other marbles of this field; and possesses the same strength and freedom for absorption, and is in great demand from the best architects for the strongest and heaviest masonry.

The rapid development of the marble industry in Georgia, consequent upon the efforts of the Georgia Marble Company has been wonderful. To-day there is scarcely a city of prominence in the United States that has not many buildings constructed of this beautiful material, and the fact that a building is either to be built of or furnished in Georgia marble causes it to be recognized as of the highest class of construction. The unsurpassed facilities and the decreased cost of production by the use of the latest improvements in machinery enable the Georgia Marble Company to compete successfully with any first-class building stone at any point in the United States.

The supply is inexhaustible. A single quarry 100 feet square produces 60,000 cubic feet of marble from each layer of six feet in thickness. The Georgia Marble Company has, in one valley, a solid mass of marble 5,000 feet long and over 20,000 feet wide. Had marble possessing the wonderful qualities of this been found in small quantities only, it could be sold at such high prices that it would be beyond the reach of ordinary uses; but Nature has provided so bountifully, it is within the reach of all who seek the greatest utility and beauty combined.

It would be well worth the time for anyone interested to visit this magnificent property, to examine the deposits and to meet the clever gentlemen in charge who have done so much for the State and United States in developing this grand industry. A rare sight will be shown him and the old-time hospitality, for which the South has been famous, will, if such a thing is possible, be eclipsed.

THE BLUE RIDGE MARBLE COMPANY,
NELSON, GA.

This company was incorporated in 1886, with John W. Stoddard as president, Harry Dewar, secretary and treasurer, and Frank Dewar, general manager, and immediately took front rank as one of the largest concerns in the United States. Their first entrance in the field was to take the contract for the marble work of the Auditorium building in Chicago, and since that time few prominent buildings in the United States have been built of or finished in marble that the Blue Ridge Marble Company has not had contracts for. The famous "Betz" building, said to be the finest in Philadelphia, the Drexel Institute, of the same city, and the St. Cecelia church of Brooklyn, N. Y., are beautiful and lasting monuments to the high character of workmanship and material used by this firm. In addition to the building and interior finish work, tiles, wainscoting, water closets, for which this firm contracts, an immense monumental business is done. Their catalogue of 1893 contains over

300 designs, which for beauty and workmanship are unsurpassed. These monuments are made in all kinds of stone, and are shipped from Maine to California.

In order to fill their contracts the Blue Ridge Marble Company has erected a magnificent mill, equipped it with every appliance know to the trade for sawing, polishing and turning, and are now running night and day with 150 hands employed. The stock of material kept ready for use by this company covers completely an area of over fifteen acres of ground, and is of such variety of size and color that no delay is encountered in handling the largest contracts for any class of work in Georgia, Italian, Vermont and Tennessee marbles. They are now engaged, in addition to a number of smaller contracts, in getting out the marble for the Union Trust Company building at St. Louis Thousands of references as to their ability can be seen all over the United States, and architects should invite them to bid on any work they may have in which marble is used. They are prepared to compete both in style, quality and prices with any firm in the world, and to do their work promptly at any point desired.

THE SOUTHERN ARCHITECT has known them for years and can fully recommend them in every manner as thoroughly reliable and competent to undertake any contract, however great, with ability and means to carry it to completion.

We reproduce in this issue a cut of the marble residence of Mr. E. F. Gould, Inman Park, Atlanta, Ga., the entire work of which was done by this firm.

GEORGE B. SICKELS & CO.,

MANUFACTURERS OF SICKEL'S GEORGIA MARBLE FLOORING TILE.

This is another of the enterprising firms of the Georgia marble fields. This firm make a specialty of "flooring tiles and wainscoting. Their product has taken front rank as the best made and classified marble tile on the American market. The superiority of Georgia marble over all other marbles, and its special adaptability for floors, stairs, hearths, etc, is undisputed. The tile manufactured by George B. Sickels & Co. will wear longer than other marbles, will not stain or discolor from ink, tobacco, oil or any other liquid. They retain their brilliancy and beauty under any conditions of time or use.

Being located at the quarry and thus enabled to select such blocks as are especially adapted to their wants, the great care in inspecting and classifying this tile has been largely instrumental in enhancing the beauty and effect of work done by them. They manufacture from 20,000 to 25,000 feet of tile per month, and carry about 200,000 feet in their yards at all times, and consequently are always able to fill orders for from two to five car loads, and ship within three days of receipt of order.

Like all the quarries, Messrs. Sickels & Co. have found it necessary to enlarge their mill, which they will do at once.

In the few years this firm have been at work they have sold tile from Boston to California, and references to many large contracts could be made.

They can refer with pride to the marble in the Peacock annex of the Boston Oyster House of Chicago, one of the handsomest interiors in the United States. To the 50,000 feet in the Equitable building of Atlanta, and many others.

They are now engaged in the manufacture of wainscoting for Linz Brothers' building at Sherman, Texas. This is being made of Etowah marble, with Creole pilasters, caps and base, and is as handsome as could be possibly, made of any material. They invite inspection of their material and work, and requests for samples from reliable builders and dealers will be met promptly. Mail communication to George B. Sickels & Co., Tate, Georgia.

SOUTHERN MARBLE COMPANY, MARBLE HILL, GEORGIA.

The property of this company is situated four miles from Tate Station and has more natural advantages than any in the district. The company owns 2,000 acres of marble lands in fee simple that yield a larger amount of pure white crystalline stone than any quarry in the State, and it is an undenied and undeniable fact that the Southern's product is the *whitest* extant. For this reason its product has been more sought after than that of any other quarry. The great demand for white marble both for monumental and building work has kept this company busy to fill orders. They are now opening one of the largest quarries in the district, which, from both surface indications and the cores taken out to the depth of over one hundred feet, bids fair to produce a pure white crystalline marble in unlimited quantities; the chemical analyses and general appearance of this stone are about the same as that of the Kennesaw, and with the exception of it having less color it is about the same marble.

This property was originally opened by Miles & Horne, contractors for the State capitol of Georgia, and all the marble used in that building was obtained from it; since that time immense quantities of fine building stone have been shipped from it to nearly all the large cities of the north and east.

Mr. O. W. Norcross, of Worcester, Mass., the senior partner of the largest firm of contractors and builders in this country, is president of the company; Mr. Robt. P. Beecher, of Atlanta, is managing director, with Mr. J. C. Gaines, a veteran Vermont marble man, in charge of the quarries and mills.

The marble of this company, besides underlying a valley from one-half to three-fourths of a mile in width, outcrops on the mountain sides in some places one hundred feet in thickness, making the expense of "stripping" the refuse from the top of the stone almost nothing. The mill is reached from the quarries by an inclined railway. It is in the cost of running this mill that the Southern Marble Company claim the greatest advantage over the other producers.

The valley in which the mill is placed is watered by numerous creeks that have their source in the surrounding mountains, and with considerable foresight and expense, the company, by skillful engineering, has combined the waters of several of these streams, and with a system of flumes and storage dams have at their service a power that is sufficient to run their large mills and machine shop night and day without expense. The fall of water from where it is piped on the side of the mountain is 220 feet. An 18-inch pipe is used at the start, which is reduced gradually to fourteen inches at the mill. Leaving the pipe through a nozzle only two inches in diameter, it strikes a "Pelton undershot wheel" and develops seventy horse power. This little wheel, only four feet in diameter, is such a simple looking affair that the development of so much power seems marvelous. The actual saving to the company in fuel and wages made by this system is over four hundred dollars a month, which in itself would be a comfortable dividend to its stockholders.

This saving, in connection with the fine quality of stone of both colored and white varieties, the small cost of quarrying in comparison to many quarries, enables the Southern Marble Company to place their product on the market

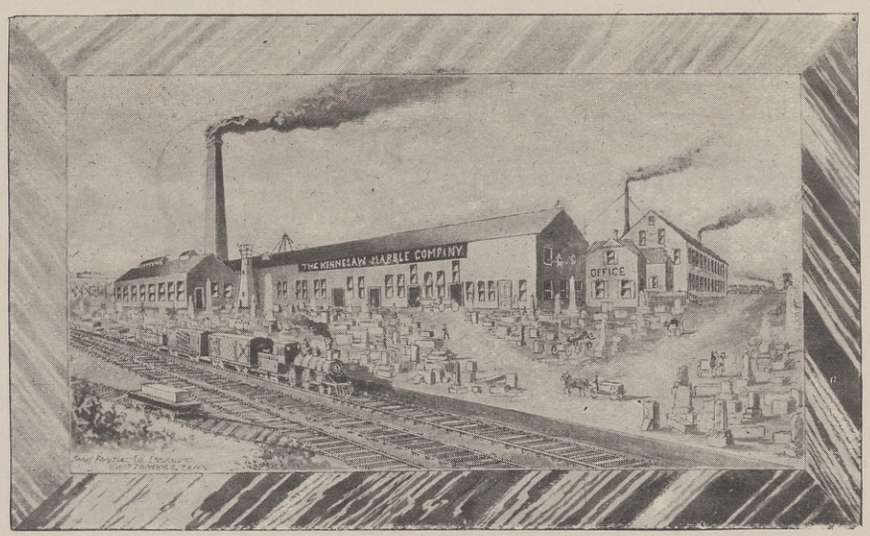
at a cost that is surprising to many who have an idea that marble is too expensive to build with. This company has always made a specialty of their building stock, and are able to figure successfully at any point in the United States on contracts of any magnitude. Their marbles, like all Georgia marble, are superior to all other building stones, and in either interior or exterior work are as fine as the finest. They will make contracts to deliver their marble either in rough blocks or in dimension stone ready to go in the building. Samples of the stone will be sent and estimates made on work by applying to Mr. R. P. Beecher, 197 Jackson street, Atlanta, Ga., or at the mills at Marble Hill, Ga.

KENNESAW MARBLE COMPANY, MARIETTA, GEORGIA.

This company was organized August 15th, 1891, with Mr. B. R. Legg as president, and Mr. Geo. F. Newell, secretary, treasurer and general manager.

Their mills are located at the junction of the Marietta and North Georgia and the Western and Atlantic Railroads, and are by far the largest and most expensively equipped in the South.

The mill proper, in which are twelve gangs of saws (one of which being 12x20 feet, is the largest in the United States), is 450 feet in length by 80 feet in width, in which are employed more than 150 hands. Every labor saving device known to the trade is here employed, including three fine rubbing beds, two polishing beds, four countersinking machines, for cutting plumbers' slabs, two of which are the largest size made, costing $15,000 each. A number of lathes for turning vases, columns, etc.



The power is furnished by a 250 horse power "Brown" engine, which is supplied with steam by a fine battery of boilers. A splendid incandescent electric light plant furnishes light for the plant, which has for nearly always since its organization been compelled to run night and day in order to keep up with orders. In addition to the mill building there is a machine shop 40x80 feet, two stories in height, which is equipped with all classes of lathes, drills and tools necessary for the manufacture of new work or the repair of anything that may become necessary.

Adjoining the machine shop is the blacksmith shop, in which the tools for cutting and carving are sharpened and tempered, and so great is the reputation of the men employed in this shop for their skill in tempering tools used in the stonecutters' trade that tools are sent here from all over the South to be put in shape.

In addition to the mill there is a large shipping house and a handsome office building separated from the mill by the yards on which the stock of marble, which is an immense one, is kept.

The principal material used in polishing is sand, and in owning large beds of an exceedingly fine quality of this article the company is also very fortunate.

The product of this firm ranges from all kinds of interior finishing, plumbers' slabs, furniture tops, mantels, etc., to the highest grade of monumental work.

In monumental work the Kennesaw Marble Company easily take precedence over the other mills in the higher classes of the work. Their carvers, who were imported especially for this firm, are not excelled by any in the world, and the designs made by them rank as works of art.

Their 1893 catalogue, containing over 100 new designs, is a splendid piece of work, and will be mailed free on application to responsible dealers.

This firm, in addition to its work in Georgia marble, imports direct large quartities of Italian marble, which they use in their monumental work.

Shipments of both interior finish and monumental work are made to all parts of the United States, and references could be made to thousands of contracts that have been executed by this firm. The latest being the new city hall at Richmond, Va, and the custom house at Chattanooga, Tenn. They are now engaged in making the wainscoting for one of the corridors of the new Congressional library in Washington, D. C. This work is being done in "Creole," and it will be by all odds the most beautiful piece of work in the building.

The company wishes architects, builders and dealers in plumbers' supplies anywhere in the United States to get their prices and estimates on material and work in their line before placing contracts.

There is no firm in this country who are better equipped for their work, or more reliable in their dealings than the Kennesaw Marble Company. Mr. Legg, the president, is a well-known citizen of Marietta, and Colonel Newell, the secretary, treasurer and general manager, is well known all over the country for his geniality and splendid business qualifications, and all business relations with them are certain to be satisfactorily conducted.

PIEDMONT MARBLE COMPANY OF GEORGIA, MARBLE HILL, GEORGIA.

This company has a magnificent property adjoining the Kennesaw quarries of the Georgia Marble Company. They are equipped with the best machinery for quarrying and milling obtainable, their mill especially being a model of beauty and utility complete with all the latest economic devices for preparing their marble for the market, and with the excellent quarries to back it up cannot be excelled.

The property is under the personal management of Mr. J. P. Harrison, one of the pioneers of the Georgia Marble interests, a clever courteous gentleman, to whom we are indebted for many courtesies, in the way of hospitality and valuable information regarding the deposits which we could not have obtained from any other source.

EAST TENNESSEE STONE AND MARBLE COMPANY, KNOXVILLE, TENN.

It is useless to write of the beauties of "Tennessee" marble. The fame of this stone has penetrated to all parts of the world and for interior finish, decorating, water closets, basins, etc., it now commands the highest prices known.

In color the Tennessee marbles are variable. The first brought into notice was a highly fossiliferous dark chocolate stone variegated with white To many persons this is still the only "Tennessee marble." Beautiful as are many of these varieties, with the chocolate or even red groundmass, often variegated with large white fossils, they are by no means the only, nor at present the most sought after, marbles of the region. Just now the demand is more for a uniformly warm, bright stone that may be used for interior decoration where the chocolate variety is too dark or too somber. Such stone is found in the granular grey and pink beds immediately underlying the fossiliferous variety. These are the beds that are now receiving the greatest amount of attention, and which may well claim equality with any stone now on the markets. Slabs ten by four feet, or six feet square,are readily obtained free from all flaws and blemishes, giving over every inch of surface a finish like enamel and requiring no filling whatever. It may truthfully be claimed that, with the possible exception of the white and blue-gray marbles of Vermont, there are upon our markets, from whatever source, no stones which are in this respect the equal of the pink and gray varieties of Tennessee.

THE CONCORD QUARRIES.

of the East Tennessee Stone and Marble Company, six in number, are most favorably situated on the East Tennessee, Virginia and Georgia Railroad, thirteen miles from Knoxville, and yield many varieties of light pink, rose pink, flowered pink and dark chocolate marbles. Owing to the favorable location of their mills at the intersection of the East Tennessee, Virginia and Georgia and Knoxville,Cumberland Gap and Louisville Railroads, at Knoxville, they are enabled to furnish every kind of "Tennessee" marble in consequence of the varieties yielded by these quarries at a considerable advantage over other companies. This firm has made it a rule to handle nothing but "Tennessee" marbie, and has directed all its energies to the pushing of this product. They have cheap freight rates and in all classes of work are enabled to compete anywhere.

This mill is equipped with the latest machinery and is running night and day to fill orders. They make all kinds of interior and outside work, furniture tops, plumbers' slabs, tiling, mantels and building stone.

An additional advantage enjoyed by this firm is the fact that their quarries are underlaid by a very fine quality of blue limestone that is fast becoming popular as a building stone. This stone is to be had in unlimited quantities, is of fine composition, easy to work and stands exposure equal to marble.

In the organization of the company Mr. J. E. Hart is president, Mr. R. F. Roberts, of the Southern Car Works, vice-president, and Mr. Chas. M. Funck secretary.

On account of the immense business done by them in he West, it became necessary to establish an office in Chicago, which is located at 82 Adams street, where a competent manager looks after their interests. The following list of large buildings, though but a small portion of their work, will enable one to get an idea of the magnitude of the business done by this firm:

Vendome Club, cost	$300,000
Renfrost Hotel, cost	350,000
Mecca Hotel, cost	100,000
Imperial Hotel, cost	150,000
Dexter Building, cost	150,000
Columbian Hotels, cost	300,000
Anheuser-Busch Brewing Association, cost	150,000
St. Nicholas Hotel, cost	300,000

Four Seasons Hotel, Cumberland Gap, Tenn., cost $500,000 and the United States public buildings at Chattanooga, Tenn., and Birmingham, Ala.

Intending builders should write the East Tennessee Stone and Marble Works for samples and prices before letting contracts.

HENDRICKS' *Architects' and Builders' Guide and Contractors Directory of America*, for builders, contractors, manufacturers, and dealers in all kind of building supplies, edition of 1893-4, is before us. This is a complete directory of all the construction industries of the country, containing over 150,000 names, addresses and business classifications, comprising builders and contractors of material and construction in the building and kindred industries. With full lists of the manufacturers of and dealers in everything employed in the manufacture of material and apparatus used in these industries—from the raw material to the manufactured article, and from the producer to the consumer—in fact, everything connected with the building industries, for the years 1893-4. Price five dollars. Published annually by Samuel E. Hendricks & Company, 44 and 46 Broadway, New York.

This directory was first published in 1871 and reached success at one bound. In the first edition there was a list of 4,600 addresses of architects given for the United States. The 1892 edition contained the addresses of 5,300, architects in the United States, Cuba, Mexico and Canada. The earlier edition contained 140,000 names; the present one 170,000, divided among the various building trades. There are 45,000 carpenters, 5,000 masons, 5,000 contractors and masons, 9,000 men who handle bricks and a part of cornice and skylight makers, electric men, painters, plumbers, etc., etc., and those are added to every edition. There is also a complete list of marble, granite and stone workers and quarries of the United States; it also tells where 4,000 civil engineers, 2,290 electric lighting men and 2,000 manufacturers and constructors of heating apparatus may be found. There are eighty separate headings under which every conceivable building material and tool, and their manufacturers are placed. The work seems to be as complete as human skill can make it, and the publishers have left no stone unturned to get within its covers everything necessary to make a thorough and reliable book.

In order to keep the work abreast with the times its promoters offer ten cents for the name and address of every *bona fide* architect not found in this list, and they also offer to furnish the address of any firm dealing in or manufacturing any building specialty that is not mentioned in this directory, free of cost to those desiring same. The work is well gotten up and should be on the desk of every architect in the country, and will be found useful to many others as well.

IN view of the already important position which cypress has already assumed among the lumber products of the South, says the St. Louis *Lumberman*, it is essential that the problem of drying it should be carefully studied. If dry kilns cannot deal with it satisfactorily, the plan of careful air drying will have to be adopted, even if it involves a longer holding of the stock in pile. The latter course, if found to be necessary, will involve a little extra expense for interest and carrying charges, but it will pay in the end if it has the effect of putting the stock into more satisfactory condition for the user.

THE ATLANTA LUMBER COMPANY.

On the front cover of this issue of THE ARCHITECT will be found an advertisement of the Atlanta Lumber Company, of which Mr. D. C. Bacon is president and Mr. M. F. Amorous is secretary and general manager. This firm, in addition to being one of the largest producers of "yellow pine" lumber in the South, have large planing mills on Glenn street in Atlanta, from which they turn out all classes of dimension stuff, also stairs, newels, posts, sash, doors and blinds. They make a specialty of fine carved doors of hardwood and pine, and are the only firm in the South producing "Moorish Fretwork," of which they are making a number of beautiful designs. They will make prices on any class of material wanted, and wish to make estimates on specifications anywhere. Architects and contractors cannot do better than get their figures on material before placing contracts.

SOUTHERN PINE.

Every year some of the heresies about southern timber are exploded. The government has made some valuable and costly tests, some of which, we think, afford more abstract information than practical utility. For a number of years past the *Southern Lumberman* has held to the theory that not one lumber inspector in a thousand can tell whether yellow pine lumber is made from virgin trees or from trees that have been "boxed" for turpentine. The "Smart Alecks" on the bear side of the yellow pine trade got a bad black eye when the official tests showed more strength—tensile, crushing, and lateral—in boxed, or bled trees, than the virgin trees, full of gum and rosin, showed up. The tests also show that the tensile strength of southern pine is equal to 10,000 pounds per square inch of cross section. What has that fact to do with the safety of buildings or the beauty of finish? Who ever saw a 2x4-inch by 16-foot yellow pine skantling pulled in two by a straight end-wise pull? We are satisfied that 5,000 pounds to the square inch of cross section would not pull a straight grained yellow pine scantling in two. But, suppose it would, that does not enter into the question of utility for building purposes. What we want is a wood that will stand a lateral strain and a crushing weight endwise—as in columns, etc.—and the official tests, so far, show that yellow pine is the wood. In this connection we would ask the architects a question that we have answered oftener than six times: Suppose we want a girder 16 by 20 inches by 30 feet long. Would it be better to use a solid stick or make it up with 2 by 20 inches by 20 feet sleepers, or floor beams, bolted or nailed firmly together? We would like to have the opinions of the experts on this subject.—*Southern Lumberman.*

A new invention is known as the telotype, or electrical typewriter. This instrument is manipulated much in the same manner as a typewriter. The transmitter, as well as the receiver, makes a copy of the message, thus the liability of mistakes is largely decreased. The instruments work in unison, and it is impossible to send a message from one machine, unless the other is at the same time properly receiving. The record is in plainly printed characters on the strip of moving paper. It is not necessary to call up a person at the receiving end of the line; the message is printed without any personal attention and can be read at any time by the one to whom it is addressed.

WHAT AN EDITOR READS.

A novelist and editor whose name is a household word in America and Europe, recently remarked, as a friend found him amid a pile of newspapers, "The only periodical I read through is *The Youth's Companion*—and I read that through every week." "For your children, I suppose," said his visitor. "No, for myself," was the reply. "It is a wonderful paper."

The announcements of *The Youth's Companion* for 1893 make this story easily credible. Seldom if ever has it presented so varied a programme of articles and stories, or so striking a list of eminent contributors. It never ceases to be a young people's paper; but it long since lifted itself to be also a most versatile, instructive and fascinating paper for all the family. One of the marked features this coming year is the appearance of the seven successful stories for which the famous prizes of $6,500 were awarded. No less than 2,963 stories competed for these prizes. The regular "everyday" stories of *The Companion* will be contributed by over one hundred authors, all of them popular, and some of them the best known story writers in America. $1.75 a year. THE YOUTH'S COMPANION, Boston.

THE September *Atlantic Monthly* contains an article which will be of special interest for a considerable number of readers, on "Edwin Booth," by Mr. Henry A. Clapp, the eminent Boston critic, whose appreciation of Mr. Booth is equal to his skill and literary art in adequately describing him as an actor. A second article of special value just now is one on "Wildcat Banking in the Teens," in which the historian, J. Bach McMaster, gives much information with regard to the old State banks, which some people fear are to be restored. Bradford Torrey contributes an article in his particular line of outdoor interest on "The St. Augustine Road." Charles Egbert Craddock continues with even increased vigor the serial story "His Vanished Star." Charles Stewart Davison has an article of very great interest on Swiss travel, "A Slip on the Ortler." Agnes Repplier writers in her incisive and engaging way on "A Kitten." "A Russian Summer Resort" furnishes a theme of excellent variety for Miss Isabel F. Hapgood. Miss Preston and Miss Dodge continue their translations and notes on "Petrarch's Correspondence." Sir Edward Strachey, who has furnished several attractive articles lately, contributes a paper on "Love and Marriage." Mr. E. V. Smalley writes of the "Isolation of Life on Prairie Farms." Fanny D. Bergen contributes a very pleasant outdoor paper called "Nibblings and Browsings." President Walker, of the Massachusetts Institute of Technology, writes a very strong paper on "The Technical School and the University," taking decided exception to some views advanced by Professor Shaler in the August number. Aline Gorren treats of the "Moral Revival in France." Notices of New Books and the Contributors' Club complete a very good number.

ELLWOOD CITY, PA., August 24, 1893.

To Our Southern Customers:

On August 31st our Atlanta branch will be discontinued, and all business heretofore handled through it will be conducted by the home office at Ellwood City, where all correspondence, in addition to the remittances and settlements, should be addressed. Yours truly,

HARTMAN MFG. CO. OF ELLWOOD CITY.

THE cost to consumers of incandescent lights in Louisville, Ky., has been raised from one-half to three-quarters of a cent per hour per light.

Does any one know of a material to put on walls, of an impervious character, similar in quality to what is put on bath tubs so as to make them perfectly washable?

New building laws modelled on that of New York, or substantially similar, have been recently projected in every part of the country, and the general interest shown in the subject is a decided encouragement to advocates of improvements in building.

Plumbers in New York are required to hold a certificate certifying to their proficiency in knowledge of their trade, which certificate is issued on the authority of a Board of Examiners, and which must be registered in a book kept for the purpose by the Board of Health of the city. A similar law ought to be enforced in *every* city. An incompetent plumber is as full of danger as a cholera microbe.

The Common Council, of Petersburg, Virginia, passed an ordinance imposing a tax of $1.50 each upon the poles of the telegraph companies in that city. The license tax, which has heretofore been $200, is not required. Every pole has to be listed, tagged and numbered under the ordinance.

The Diamond Blue Granite Company has been organized in Augusta, Ga., with Mr. Charles Estes as president, Mr. E. S. Johnson as secretary, and Mr. J. O. Mathewson as treasurer. The company has bought and will work a valuable granite quarry in Oglethorpe county. The quarry is reputed to be a very rich one.

The Chicago & Bedford Stone Co. (Bedford, Ind.) are running their quarry with electricity as a motive power. This is, we believe, the first quarry in the world to use electricity exclusively for all its machinery. Derricks, channellers, traveller, and electric lights are all run from one generator. The new six-gang mill is run by an endless belt direct from the engine. The experiment is being watched with the greatest interest by all the other quarries, and if successful, which it no doubt will be, the old style will be a thing of the past.

It has just been discovered at Huntsville, Ala., that a stone quarried on Monte Sano for 40 years is susceptible of a very high polish and is exceedingly valuable. It is the variety of limestone known as Knox Dolomite. The *Mercury* quotes a local marble yard man, Mr. Baker, who avers that its hardness will prevent its being worked in competition with the white and softer stone, also abundant here. He says this discovery will develop a new field, and that instead of importing the Italian and New England stones, we shall be exporting the finest stone to his knowledge, and he has familiarized himself with the most famous quarries.

More than fourteen miles of streets in Steubenville, O., have been paved with vitrified brick. From experience the fire-brick paved streets have not only been handsome and satisfactory, but economical. Brick, in place of stone, is being used on streets now more or less all over the country. Cincinnati, Chattanooga, Macon, Augusta and other southern and western cities are already using the vitrified brick with great success, and the demand for that sort of pavement is so large that the manufacturers are millions of bricks behind in their orders. The brick is made of a low grade of fireclay, is almost as hard as flint, and is free from moisture.

The "Gigantic" of the White Star Steamship line now building is expected to be not only the largest but the fastest steamship afloat. Her dimensions are 700 feet length, 68 feet beam and 45,000 horse-power. She will, therefore, be 8 feet longer than the Great Eastern, but fifteen feet less in breadth. The horse power of the Great Eastern's engines, however, was less than 8,000. While the Teutonic, Majestic, New York and Paris have accomplished an average rate of 20 knots across the Atlantic, the Campania and the Lucania are expected to do 23; but at one bound the Gigantic is to run at a speed of 27 knots an hour on the ocean, so that the voyage from Queenstown to Sandy Hook will be reduced to about 100 hours, or just over four days.

A correspondent of the Savannah *News* recently had an interesting interview with Hon. L. P. Mandeville in regard to the first railroad ever built and operated south of the Potomac. This road ran from Augusta, Ga., to Charleston, S. C. It was constructed about 1835.

Mr. Mandeville's father was often a passenger on the above railroad. In those days the shape of passenger cars was like a barrel. The speed of the train was not over ten miles per hour, and when the train made as much as a mile in five minutes it was spoken of with wonder by all the passengers, who would sit with their watches in their hands to ascertain the time between mile posts. The engines were small and the fuel used was rich pine knots, and when the journey was ended the passengers looked like they were blacked, owing to the black smoke and soot.

An interesting experiment was recently concluded in Galveston, Texas, in the boring of an artesian well over 3,000 feet in depth. The water supply of the city is furnished by thirteen artesian wells, varying in depth from 845 to 1,350 feet, but the water is totally unfit for drinking and domestic use The city concluded to invest $75,000 in order to secure a supply of pure water. According to the *Manufacturers' Gazette* the well was started with a 22 inch casing. Inside this casing a 15-inch pipe was sunk to the depth of 870 feet, and inside this a 12-inch pipe was telescoped to a depth of 1,500 feet. Then a 9-inch pipe was telescoped to a depth of 2,363. A 6-inch pipe was then inserted, and a depth of 3,070 feet 9 inches was reached. No water was found nor was any rock penetrated. The contractors have complied with their contract, which was to bore to the depth of 3,000 feet, were paid $76,000 and further work abandoned. The well is the deepest on the seacoast in the United States, and a description of the different strata pierced by the boring is interesting. From the surface to a depth of 46 feet there was a stratum of gray sand, thence to a depth of 64 feet was a layer of red clay and shells, thence to a depth of 100 feet was a stratum of blue clay, seashells and fragments of rotten wood. From this to 315 feet sands and seashells were encountered, and from that depth to the 815-foot level sand and clay were discovered. From the 815-foot level to the depth of 1,288 feet sand, clay, seashel's and decayed wood were found, and from that depth to the 3,070-foot level varying strata of sand, clay and large logs were encountered. At the very bottom of the hole a bed of seashells was struck. The contractors expended $63,000 before they completed the work.

Pitch pine beams will shrink in thickness from $18\frac{3}{8}$ to $18\frac{1}{4}$: spruce from $8\frac{1}{2}$ to $8\frac{1}{4}$; white pine, from 12 inches to $11\frac{7}{8}$; yellow pine, a trifle less. Cedar beams will shrink from a width of 14 inches to $13\frac{1}{4}$; elm from $11\frac{3}{4}$ to $10\frac{3}{4}$; and oak from 12 to $11\frac{3}{8}$.

SOUTHERN ARCHITECT.
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We shall be pleased to receive from architects, engineers, builders, and others articles treating on matters of interest to architects and the building trades.

THE ILLUSTRATIONS

In order to make this journal a true representative of Southern architecture, we will be glad to receive from architects and draughtsmen designs of buildings for illustration in these pages.

Residence for J. W. Pope, West End, Ga.—C. Walter Smith, architect, Atlanta, Ga.

Residence for J. J. Sweeney, Owensboro, Ky.—Drach & Thomas, architects, Louisville, Ky.

Residence for E. Y. Hill, Washington, Ga.—E. G. Lind, architect, Atlanta, Ga.

Marble residence for E. F. Gould, Atlanta, Ga.—W. W. Goodrich, architect, Atlanta, Ga. Marble from Blue Ridge Marble Co., Nelson, Ga.

A NOVEL RAILWAY.

A REMARKABLE railway has just been opened for traffic at Marseilles. The shrine of Notre Dame de la Garde, which has for hundreds of years been the resort of pilgrims, is situated at the top of a steep hill rising about 500 feet above the sea level. Formerly it was difficult of access, the journey taking several hours; but now the devotee rides to the top in a few seconds in a luxuriously cushioned car on an incline railway which is worked by an ingenious system, the invention of M. Maslin. The track has a double line of rails, one for the ascent and the other for the descent. Two cars so built that the floors are always level are connected by a strong double rope passing over a pulley wheel at the summit of the hill. These cars are evenly balanced so that a slight increase in the weight of the one which is at the top of the line causes it to descend and thus draw up the other from the bottom. The alteration of the weight is effected by means of water tanks placed in the bottom of each car. The driver of the car at the top when he wishes to descend admits water to these tanks in sufficient quantity, and the person in charge of the lower vehicle allows his tank to run empty. The necessary change of gravity is thus secured and the two cars are set in motion, the one running easily and smoothly upward while the other moves down the incline at an equal rate. The downward progress is regulated by powerful brakes of a special pattern, by means of which the car can be stopped dead if required. The working expenses are of course very low, the most important item being the wages of two men in charge of the cars. The connecting cable is double, and each part is strong enough to bear the weight of both cars when loaded up to the maximum.

SMOKELESS COMBUSTION OF COAL.

ACCORDING to the Berlin correspondent of the *Standard*, the problem of the smokeless combustion of coal seems at last to be solved by a newly patented process which is exciting immense sensation in Germany. The patent has been taken out by a company, which has already made contracts with a number of large commercial and industrial concerns—among others with the North German Lloyd, the Hamburg-American Packet Company, Schichau, and the Vulcan Works at Stettin—for the introduction of its new system of firing.

In the construction of their new firing apparatus, the the patentees have departed from all the methods hitherto employed. The coal is no longer burned in lumps, but is reduced to powder by means of the ordinary centrifugal mills. The new system, which is called "automatic and smokeless coal-dust firing," is extremely simple. At the place where hitherto the coal was introduced into the fire-grate, that is to say at the furnace door, there is a movable pear-shaped apparatus, consisting principally of a fire chamber lined with fire-brick. One aperture of this hollow pear opens in the direction of the axis of the boiler into the mouth of the hitherto employed furnace, from which the fire grates, fire bridges, etc., have been removed. The opposite aperture of the hollow pear is intended to admit a current of air. By means of an ingenious automatic contrivance coal-dust supplied through a funnel placed above the current of air is continually conveyed into the current of air, and thence into the fire chamber, where it is immediately brought into combustion by means of the small fire which is placed there. When this has once taken place the coal-dust conveyed by the current of air continues to burn in one regular, intense flame. The current of air which brings the coal-dust into the apparatus is regulated so as to merely convey the dust thither, whereas the further supply of air necessary for combustion is sent into the zone of combustion at right angles and in radiating jets. By this arrangement the coal-dust and the air in the zone of combustion are intimately and thoroughly mixed, whilst the speed of the current which introduces the coal-dust is diminished.

It will thus be seen that the combustion of the coal which this method produces is extremely thorough, for each particle of fuel floats in the air and is brought into contact with the oxygen necessary for its combustion, so that it is totally consumed the moment it enters the sphere of combustion. The proof of its being totally consumed is seen in the fact that not even a trace of smoke is perceptible, With the pressure of a finger the supply of coal-dust and of draught can be perfectly regulated, and thereby an equable generation of heat secured.

Among the further advantages of the new system of firing may be mentioned the diminishing wear and tear of steam boilers, the absence of fire grates and fire bridges, the ability to start or stop the fire instantaneously, the absence of heaps of cinders and ashes, and the avoided necessity for high chimneys. It is further claimed that this method of firing is suitable not only for steam boilers, but also for all kinds of heating, welding, smelting, and burning processes; that it can be used in all sorts of manufactures, and that by it not only ordinary coal, but also brown coal, charcoal, turf powder, etc., may be burned.

INCONGRUITIES OF MODERN ARCHITECTURE.

THERE are no incongruities in the designs of modern architects, no fallacious fancies. In writing about modern architects I mean those only who are genuine members of the profession; "Educated for the Profession." I do not include any one in the noble profession of architecture who is an architect and builder—or one who furnishes designs from books and periodicals.

That there are incongruities in the designs and in the buildings of the so-called "architects and builders" goes without question.

Shameful examples are on every hand of the "architect and builder's" botch work.

Every city is cursed with it, glaring at the observer at every turn. Any one can detect the carpenter or mason architect. The carpenter architect puts on his facades all the turned work, all the scroll work, all the ornamental work, so-called, that he can possibly get on, *i. e.*, gingerbread work. He will put on domes in unheard of places, towers that look like pigeon houses or children's playhouses perched upon a roof, straddle of a ridge, or perched in a valley, and in out of the way places.

Any ornamentation that his untutored mind imagines is to him a work of art, and readily finds a resting place on his buildings. An utter lack of harmony, of symmetry and of sympathy is in all his work from cellar to attic, while the real archietct is blamed for the unprofessional hideousness of the wood butcher.

The mason architect runs riot on arches that will not carry the load and the thrust flattens them so that they fall by their own weight; arches that gravitate to the ground.

Then there is the civil engineer who sets himself up as an architect without any architectural study whatever. His designs and buildings look like railroad roundhouses or car shops, massive as the pyramids.

I admit the foundation of architecture, "the science of construction," is engineering, but I do not admit that the ornamental, the harmony of detail, the grouping of mass, the blending of the line between earth and sky is engineering. "It is the music of the soul," that infinite inspiration of the imagination, that looks in and through all that is beautiful and weaves the warp and woof of the soul's fancy into a creation; that compels all to know that a master brain has left the imprints of a genius, of a glorious creation, that is a monument for all time to come. To inspiration this creation is simplicity itself, quiet dignity in material, color, form and construction. "A babe can comprehend it." The simple vine, the color of the lily, the structural construction of canes, the grouping of mass, where weight is required to be sustained, these are the interesting points of the study of the architect.

He does not look after false effects to incorporate them into his building. He avoids them, he shuns them. His whole ambition is to so blend his material that the effect shall be an architectural symphony at once attractive but not false, in the which the object is subservient to the client's demand and the cash account used to the best advantage, so that there shall be no waste.

Clients are solely to blame for all the incongruities of modern architecture, in nearly every instance.

Mr. Newrich or Mrs. Struckile wants a home. It must excel in sublimity the palaces of the world; it must be the most picturesque and distinguished home in the city; the most exquisite charm of the avenue. Mr. T. Square is called upon for designs. He is recognized as an expert and a gentleman of large experience, thoroughly up in his profession. His charges are the regular institute ones, "which all gentlemen should adhere to" without exception.

The newly rich client says: I want so and so—it is my taste; I want my plan like this; at which Mr. T. Square, with his keen discernment of men and things from long practice with an extensive clientele, and with an eye to the etiquette of his most noble calling, says, such and such things won't work out, won't harmonize, are not in good taste, are of bad form, and won't make a pleasing whole, and will be exceedingly incongruous. And he shows the client the utter lack of sense in the client's demands and wishes, "of course in a gentlemanly way."

"But, Mr. T. Square, it is my money that pays for what I want, and if you won't work up my ideas and build as I want, I can get some one that will."

Poor Mr. T. Square; his professional standing conflicts with his bread and butter; he hates to create a botch, yet his family must have bread; either lose the job, or do work that his very sensitive soul shrinks from touching because he knows that he is and will be held responsible for an incongruous blemish on his architectural escutcheon.

His ability is unquestioned, his record is proof against all villification, but if he erects the building he will be held responsible for an architectural monstrosity, an incongruous mass. Alas! others will do it if he won't, and he quietly puts his views in the wastebasket and is dictated to by Mr. Newrich, and the consequences are another incongruous architectural absurdity that the architect is not responsible for, and should not be blamed for.

W. W. GOODRICH.

ANCIENT EGYPT AT CHICAGO.

ONE of the most interesting sights at the wonderful World's Fair especially to students of ancient architecture, and to decorative artists, is the reproduction of the Temple of Luxor at Thebes. The original temple was built by Amenhotep III., of the eighteenth dynasty, 1400 years before the time of Christ. The erection of the replica is in charge of the well known Egyptologist, Professor Diemetri Mosconas. One of the obelisks which stands before the temple at Thebes is exactly reproduced; the other bears an inscription in golden hieroglyphs prepared by Professor Mosconas in commemoration of the discovery and progress of America, the deeds of her sons and the beauty of her daughters.

On the walls of the temple are painted representations of the wars of Rameses, while over the entrance the artists depict, in the quaint, one-sided manner peculiar to Egyptian art 3000 years ago, mighty kings and princes of the earth offering sacrifices and pouring out libations before the gods, and above all, the glorious flying sun with wings outspread, the emblem of power.

Between the figures of the great King Rameses, looking with steadfast gaze into the life beyond, and under the flying sun, the visitor passes into the dimly lighted precincts of the inner temple. In a vista of columns,

decorated with deities and sacred emblems, lie ten huge sarcophagi containing the last that was mortal of ten great kings, the Pharaohs of history. There is Ahmos I., who delivered Egypt from the Hyksos, the shepherd kings; Thothmes I. and Thothmes II.; Seti I., whose daughter went down to the banks of the Nile and there found a child in an ark of bulrushes; Rameses I., surnamed the great, who was educated with Moses, and had a son named Menephtah, the Pharaoh of the Exodus; Rameses III., and Pinozer, the priest of the twenty-second dynasty, whose daughter married King Solomon. These and other famous mummies lie in state in their funeral beds in the Temple of Luxor for the curious and learned to behold.

Behind them at the far end of the temple sit on a raised daïs a solemn circle of the more modern Egyptians, with musical instruments in their hands, from which sound forth a strange and impressive medley of sacred music, as it is known to the descendants of the Pharaohs. At stated intervals they will vary the ritual with the wild dervish dances of the east. In everything an attempt has been made to conform to the usages of the Ancient Egyptian priests. Part of the ceremony consists in burning incense to the trinity, the three figures of the gods Osiris, Isis and Horos, which together represent the sun. In the center of the daïs a gilded statue of Serapis, the sacred bull, is placed and over all are the hieroglyphic inscriptions.

The inside walls of the temple are hung with canvas decorated with historical and symbolical paintings—a king receiving gifts from all nations; a series representing the judgment of the soul and its delivery and eternal life and future happiness; or the condemnation of the soul and its return to the earth in the form of an animal to pass through a cycle of 3,000 years before it is tried once more. On the ceiling are the signs of divinities and the names of all the dynasties of the kings from Menei, of B. C. 5000, to Nectembus, of B. C. 690.

This temple that is to whisper to western ears tales of the Nile, the hot sands of Egypt and her dead rulers was constructed, with its accessories, in the land that saw the birth of Egyptian architecture, and was shipped to this country and put together on the framework prepared for its reception. Professor Mosconas was aided in his task by the artists Santi Russo, William Weistener and Phillipo Giorgadis, who executed the decorations.

The first contract for colored Colorado marbles for interior purposes was recently taken by a Denver concern and the work is now under way. The praises of the marble of that State have long since been sung, and loudly too, by the press, but it was not until within a comparatively short time that actual manufacturing was commenced. The securing of this first contract for colored marble and onyx in competition with foreign marble, was very encouraging to the enterprising manufacturers.

A North Carolina man sold a single tree the other day for $500, and the purchaser said that he expected to realize at least $1,500 for it when it was worked up. The tree measured three and a half feet through at the stump, and was a beautiful curly walnut, curled from root to the topmost twig. There is a great deal of walnut in that State, and it is very valuable, single trees often selling at from $100 to $300.

John Kirby, on behalf of Texas Pine Timber Company, a New England syndicate, recently effected the largest timber sale ever recorded in the South. The sale is of standing timber and the amount involved is $750,000.

Work has begun upon a bridge connecting New York and Brooklyn which, when completed, will make the Brooklyn bridge seem small by comparison. Its feeders will stretch out to great distances upon the east side of New York, and its span over the river will be much longer than that of the Brooklyn bridge. It will cost $25 000,000, and the contracts provide that it must be finished during the present century.

Before this is well under way another structure, 140 feet above the water, with a span even longer than the second of these bridges, is to be constructed.

When all the bridges which are in contemplation, or are in process of construction now, and which will connect New York with the mainland, have been completed, they will represent an investment of nearly $150,000,000.

The ground-plans for the new City Hall for New York include the removal of both the old City Hall and the later courthouse. Designs to be submitted should show about 70,000 square feet of available space on each floor, and there will not be more than five stories in any part of the structure. Five equal premiums of $2,000 each are to be awarded to the authors of the five best designs. And if his professional standing warrants it, the anthor of the first prize is to be made supervising architect, with a commission amounting to 5 per cent. on the first million expended in total cost of work; 4 per cent. on the second, and three per cent. on the remainder. If his standing is not sufficient, the Building Commission may appoint an assistant architect, and the fee shall be divided.

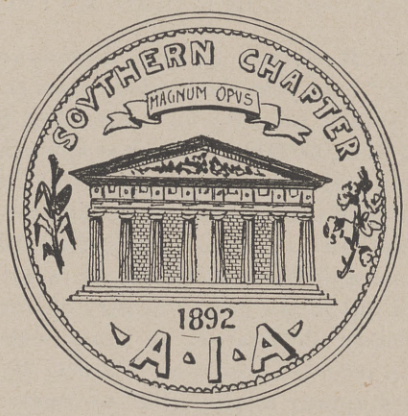
In the erection of buildings where low cost is a necessity, says the *Brickmaker*, timber is often employed to the exclusion of brick, simply because to use the latter, and at the same time keep the cost within the prescribed limits, would mean using brick of very inferior quality, and these would not last much longer than timber. There is a way of using good brick, and yet of keeping the cost low, and that is by employing hollow bonds.

The bonds can only be used in one-brick walls. There are two methods of laying them. The first is to lay all the brick on edge, laying first a header and then a stretcher, and so on throughout the course. The course above is laid exactly in the same way, with the headers in the center of the stretchers below them; the ends of the courses being closed up with closers of the necessary length. The second method of forming hollow bond is first to lay a course of headers, and then a course of stretchers on edge. This is followed throughout the wall, there being headers flat and stretchers on edge alternately.

Both systems of laying brick produce a fairly strong wall that will safely carry all ordinary weights. For fence walls they may be used with advantage, and for a number of other purposes they may be safely employed.

Hollow bonds are not recommended to take the place of solid walls, excepting where it is necessary to keep the cost low, and where it would be necessary to use an inferior brick if the walls were built solid. Hollow walls erected of good brick are much superior to solid walls constructed of poor brick.

The *Canadian Architect* sensibly suggests that in building brick houses in positions where they are not protected by surrounding property, not to forget that hollow walls will add greatly to the convenience of the occupiers. They will render the house cooler in summer and warmer in the winter, and will assist in materially keeping the house dry. The cost of hollow walls is only very little higher than that of walls built solid.



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OFFICERS FOR 1893–4.

D. H. Burnham, President.....Chicago, Ill.
Alfred Stone, Secretary.....Chicago, Ill.
Samuel A. Treat, Treasurer.....Chicago, Ill.

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George B. Post, First Vice-President.....New York, N. Y.
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ANNUAL CONVENTION AMERICAN INSTITUTE OF ARCHITECTS.

THE WORLD'S CONGRESS OF ARCHITECTS.

The twenty-seventh annual convention of the American Institute of Architects assembled in the Art Building of the World's Fair, in Chicago, Monday, July 31st, and closed its session on the following day, merging itself with the World's Congress of Architects which was formally opened Tuesday at 2 P. M. The attendance of members of the Institute was not as large as expected, and we regret to say that but few of the southern members were present.

President Kendall called the convention to order, and delivered his annual address. It was an able address, mainly discussing the recent law passed by Congress to regulate the selection of designs for government buildings by limited competition. Mr. Kendall spoke of the efforts which the Executive Committee of the Institute had made to have the law amended so as to provide for the payment of at least the expense of making competitive plans and for such professional advice as the Secretary of the Treasury may require in preparing instructions, and in selecting the best submitted plan. It is probable that this essential amendment will be adopted at the next session of Congress.

President Kendall spoke also interestingly of the purposes of the Municipal Art Society of New York, and the competitions it offers, and advocated the organization of similar societies everywhere. His comments on "travelling scholarships" and their present results were not favorable.

The report of the Board of Directors deplored the fact that so little interest was shown by architects in the work of the Institute. The increase in membership during the year was small, and no new chapters were organized. A history of the Institute is to be prepared by Ex-Secretary A. J. Bloor.

The number of chapters is 23; number of fellows, 475; honorary members, 52; corresponding members, 55; balance in treasury, $2,300.

But few of the standing committees made reports, and those that were made offered little of practical interest. A badge designed by Mr. Rowland Hunt was adopted by the convention.

On the following morning after recess nominations for officers were considered; and the following were elected to serve during the current year:

President, D. H. Burnham, Chicago, Ill.; First Vice-President, Geo. B. Post, New York City; Second Vice-President, Levi T. Scofield, Cleveland, Ohio; Treasurer, S. A. Treat, Chicago, Ill.; Secretary, Alfred Stone, Providence, R. I. Directors for three years, Cass Gilbert, St. Paul, Minn.; Thomas Hastings, New York City; A. Page Brown, San Francisco, Cal.; C. F. Schweinfurth, Cleveland, Ohio; G. A. Frederick, Baltimore, Md.; Henry Van Brunt, Kansas City, Mo.; Jeremiah O'Rouke, Washington, D. C., Edward H. Kendall, New York City.

On motion, New York was selected as the next place of meeting, subject, however, to the will of the Board of Directors. After completion of some routine details, the convention adjourned *sine die*, it having been determined that the papers which had been prepared by members for the programme of the institute should be read during the World's Congress of Architects, which convened immediately upon the adjournment of this convention.

THE WORLD'S CONGRESS OF ARCHITECTS.

The World's Congress of Architects assembled Tuesday, August 1st, at 2 P. M., and was formally opened by Mr. D. H. Burnham, chairman of the Congress, and remained in session the balance of the week. About two hundred persons were present in the hall. Mr. Burnham's address was very interesting and instructive, and was listened to with close attention. He entered laboriously into the causes which led to the organization and consummation of the Columbian Exposition, detailing the nature of the work done, the tremendous obstacles that were encountered and overcome, and the magnificent results that had been achieved and made manifest in this, the greatest and most wonderful exposition in the history of the world. In conclusion Mr. Burnham eloquently said:

I cannot, in this paper, describe the works or tell you the amounts of material which have gone into construction. This must be done in an official report, which will take many months to prepare.

I can, however, tell you how, during the storms of summer, the frosts of winter, all day, all night, week in and week out, for two years, the little band of American boys ran the race for victory with Father Time, and won it. Without looking for or expecting compensation at all equal to the services they have rendered, without jealousy, with ready willingness, these men have been ever at the front, emulating each other in the amount and quality of the services rendered.

Though I cannot now pick individuals to be praised, I can congratulate all on the glory they have won through constancy and self-sacrifice such as no other country ever gained from her sons in time of peace. They have shown what, to me, is the greatest heroism—that of forbearance and constant helpfulness. I am most proud of having been associated with them.

President Kendall, of the American Institute of Architects then took the chair and presided during the rest of the session, which closed Saturday, August 5th. The attendance of foreign architects was small, nor was the attendance of our American architects at daily sessions of the Congress what it should have been, in view of the notable occasion, and the scientific and artistic value and interest of the papers read by their distinguished authors.

The papers read Tuesday were: "The Organization of the World's Columbian Exposition." D. H. Burnham, Chicago. "The General Schemes and Plans of the World's Columbian Exposition." Frederick Law Olmsted. "The Construction of Buildings, Docks, Piers, Bridges, etc." E. C. Shankland, Chief Engineer World's Columbian Exposition.

Wednesday: "Conditions of Architecture in Japan." Josiah Conder, F. R. I. B. A., Tokio, Japan. (Read by Tatsuzo Soné, Member of the Society of Japanese Architects.) "Public Competitions." J. Gaudet, First Vice-President of the Central Society of Architects of France, Paris. "On the Use, for Transportation, of the Lagoons, of Lake Michigan, of the Intramural Railway, of the Alley Railway, of the Great Trunk Lines, of the Terminal Facilities, of the Chair System, etc., of the World's Columbian Exposition." W. H. Holcomb, Chief of Transportation World's Columbian Exposition. "The Mechanical Power Plant of the World's Columbian Exposition." Charles F. Foster. "The Electrical Plant, etc., of the World's Columbian Exposition." R. H. Pierce, Chief Electrical Engineer World's Columbian Exposition. "Acoustics in Relation to Architecture." Alex. F. Oakey, San Francisco, Cal. "Comparison of Paris and Columbian Expositions." Bannister F. Fletcher, Honorable Secretary Architectural Association of Great Britain, London.

Thursday: "Architecture in Apartment Buildings." F. Adolphe Bocage, Member of the Central Society of Architects of France, Paris. "Sculpture in its Relation to Architecture." William Emerson, Honorable Secretary R. I. B. A., London. "Economic Conditions of Architecture in America." Barr Ferree, New York. "Some Considerations Affecting the Development of Characteristic Style in the United States." Henry Van Brunt, F. A. I. A., Kansas City. "Ethics in Architecture." A. J. Bloor, F. A. I. A., New York. "A Review of Recent Plumbing Practiced in the United States." Glenn Brown, F. A. I. A., Washington, D. C.

Friday: "Government Practice." Jeremiah O'Rouke, F. A. I. A., Washington, D. C., Supervising Architect, U. S. Treasury. "The Use of Color in Architecture." H. Langford Warren, F. A. I. A., Boston, Mass. "Foundations of Buildings." William R. Hutton, F. A. I. A. "Fireproof Construction and the Practice of American Architects." P. B. Wight, F. A. I. A., Chicago "Statutory Regulations." William Worth Carlin, F. A. I A., Buffalo, N. Y. "The Aëration of Cities and their Buildings." Everett T. Potter, F. A. I. A., New York. "Architectural Engineering." Thomas C. Clarke, F. A. I. A. "A Review of Chicago Architecture." Frederick Baumann, F. A. I A., Chicago

Saturday: Polychromatic Treatment of Architecture." Louis H. Sullivan, F. A. I. A., Chicago. "Library Buildings." J. L. Smithmeyer, F. A. I. A., Washington, D. C. "The Influence of Building Laws upon Architectural Development." Clarence H. Blackall, F. A. I. A., Boston. "Association for Mutual Defence." T. M. Clark, F. A. I. A., Boston. "Cohesive Construction, Past, Present and Future." R. Guastavino, Chicago. "Superintendence in Architecture." R. W. Gibson, F. A. I. A., New York. "Engineering in Architecture." Louis de Coppet Berg, F. A. I. A., New York.

Four of the papers were from England, two from France, and one from Japan. A few were prepared especially for this Congress by American writers. The great majority of the papers, however, were prepared for the Convention of the Architect's Institute of America, but were held over and read before the Congress, as a matter of courtesy, but most of all to fill out a programme which, without these papers, would have been very meager.

All of these papers will be published in the *World's Fair Auxiliary*, and will prove a very valuable addition to the library of every intelligent architect and engineer.

In the audiences present at the daily sessions the large proportion of ladies was a noticeable feature.

The members of the American Institute of Architects and the visiting architects from abroad had a most enjoyable time socially during the week, the local committees doing all in their power to make the meeting as interesting and pleasant as possible.

During the sessions of the Congress a series of congresses on the subjects of art, ceramics, painting, sculpture and decoration were in operation, which were incidentally visited by the architects, and which afforded a most useful and instructive recreation from the severer studies and scholarly disquisitions prepared for the programme of the World's Congress.

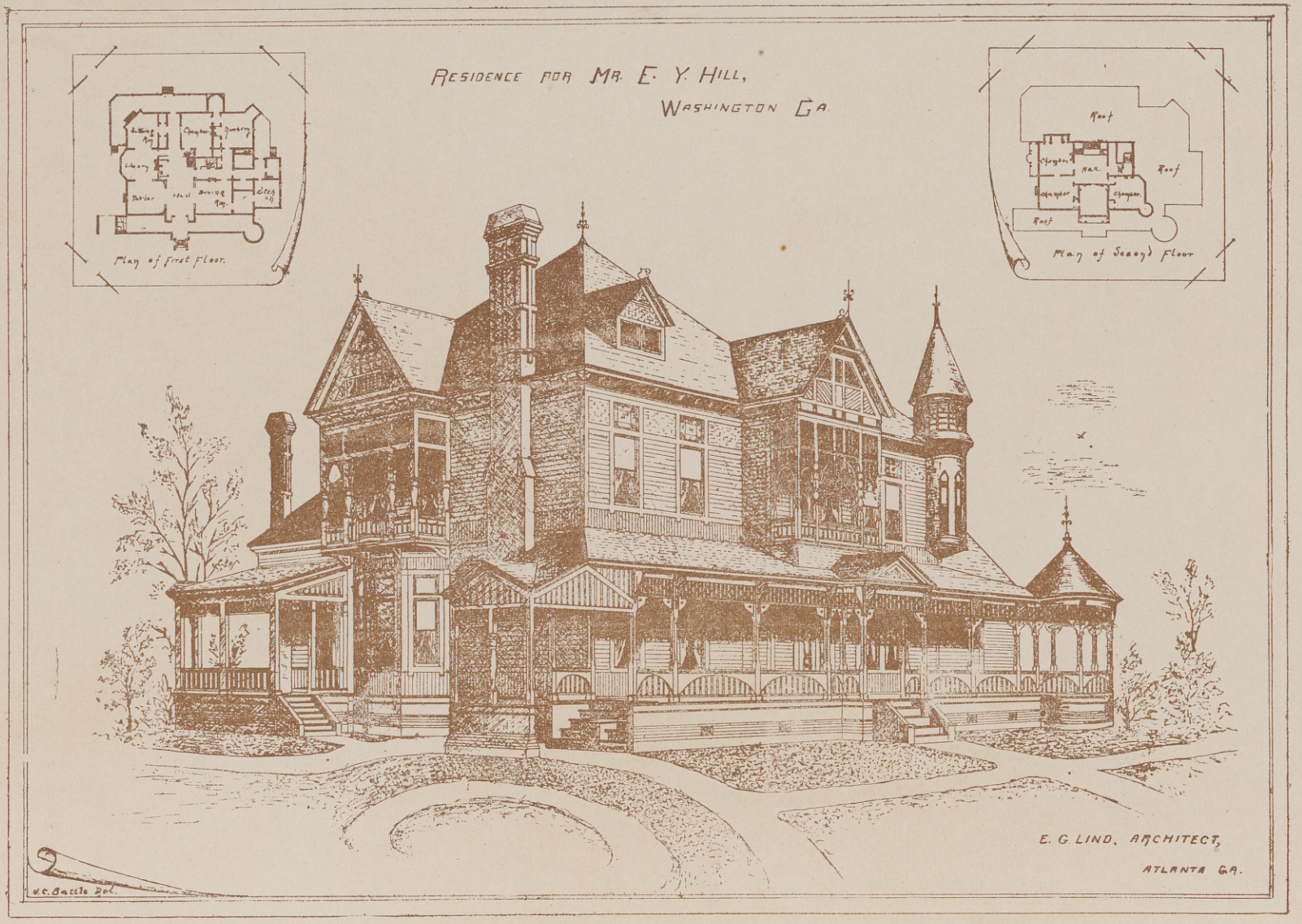
SLAG AS A BUILDING MATERIAL.

HARVEY B. CHESS, in the *Engineering Magazine*, says: "Last year the United States converted into ashes and smoke property for which the insurance interest paid $142,000,000." We may appreciate what this draft on our national resources means by reflecting that the full value of the pig iron production for the same period was less than the sum named by $20,000,000. Treasure equal to one and one-half times the wealth gained by energy and toil in the great industry of iron production was completely obliterated. A prominent underwriter says that in recorded insurance history, 40 per cent. of all the fires appear attributable to easily preventable causes. Then neither from an economic nor from a practical point of view is the general fact stated creditable to our national intelligence. How shall we build safer, and come within the unavoidable commercial limitations imposed? Edward Atkinson, in a review of the fire-resisting shortcomings of granite and other stone, as also of iron and steel, inquires: "May we not now be about to enter upon the Age of Clay, having passed through the several phases of timber, lightwood, iron, granite and steel?" By implication the word clay is used as the type of plastic earthy materials in general, of which clay is certainly the most notable in its applications to building purposes. Clay has the property that heat concretes it and hardens it, instead of disintegrating it, and the Japanese have taken advantage of this property, and their kura or safe deposits for valuables are made of clay.

From another source it is learned that compressed paper, similar to that used in car wheels, is to be molded into doors and window frames, and that a malleable glass, which has even been suggested for railway ties, is to be used for joists and stringers. This malleable glass has been put to the most severe tests possible and the *Scientific American* says: "a spike was driven into it without fracture." The late Vernon Smith, C. E., was of the opinion that before many years the slag from the furnaces would be run into molds of various shapes and used for the floors and inside sheeting of buildings. Be that as it may, a radical change is at hand in the system of architecture now in vogue, and it may be as well to agree with Dana, who says "that while many things are improbable, we must not consider anything as impossible nowadays."

THE highest point attained by a railroad in the United States is in the Rocky mountains, 9,027 feet above the sea. Trains on the Calloa-Oroya line in Peru are now ascending to a height as far above this great elevation as the total height of Mount Washington. In other words, when a train on the Oroya line enters the Galera tunnel to cross from the western to the eastern slope of the Cordilleras, it is more than a mile higher above the sea than the loftiest bit of a railroad track in this country. Some stretches of track in Mexico are also higher than any railroad in the United States. At present the Galera tunnel is the highest elevation attained by any railroad in the world.

WM. DURKIN, Philadelphia, has patented a shield for buildings. The purpose of this invention is to prevent dampness rising above the first floor, and to keep out vermin. It consists of metal shields with side flanges arranged above and below the foundations, one flange extending beyond the outer face of the wall and the other beyond its inner face to an engagement with the joists. The shield may also be applied to all piers, arches and center walls of any structure.


Residence for Mr. E. Y. Hill,
Washington Ga.
Plan of first floor.
Plan of Second Floor
Roof
Roof
Roof
E. G. LIND, ARCHITECT,
ATLANTA GA.

RESIDENCE FOR
MR. J.J. SWEENEY. OWENSBORO KY.
DRACH and THOMAS ARCH'TS LOUISVILLE KY.

J.M. GRADY. CONTRACTOR.

W.C. WULFF. 93.

MARBLE RESIDENCE OF E. F. GOULD, ATLANTA, GA.

Marble from Blue Ridge Marble Co., Nelson, Ga.


Atlanta Eng. Co.
J.E. Pratt, del.
Residence for J.W. Pope Esq. West End, Ga.
C. Walter Smith, Archt.
Atlanta, Ga.

BALTIMORE has appropriated $100,000 to put her police and fire-alarm telegraph underground.

ILLUMINATED walking sticks are among the latest applications of electricity. A small incandescent lamp is concealed in the head of a cane and can be ignited by a spring.

THE employment of electric motors in factories where long lines of shafting are necessary in using steam power, is becoming more general. It is claimed that a saving of from 16 to 75 per cent. of the power transmitted is thus made. Such economy is an important feature in a large establishment and is likely to stimulate investigation and the extension of the use of the electric motor.

ACTING in accordance with the modern practice of burying electric wires, the committee on Mercantile Affairs of Boston, Mass., has practically agreed to report a bill to bury telegraph, telephone, electric light and all other wires, with the exception of trolley-wires. A board of electrical wire commissioners is to be established. The companies are given until the year 1900 in which to put their wires underground.

THERE are at present 1,850 cities and towns in the United States equipped with electric lights. It is interesting to note that Pennsylvania takes the lead with 150 towns, New York and Illinois following with 147 and 133 respectively, and that in the first State there are no less than thirty-two new lighting corporations, which have not yet commenced business. There are over 500 railways operated by electricity in the country, and over 200 more holding franchises allowing the use of electric power.

NIKOLA TESLA is carrying on a series of experiments which he believes will result in revolutionizing present systems of electric lighting. If the hopes of M. Tesla ever come to fruition the argand burner, the Rochester lamp and the electrolier will be relegated to the oblivion in which the rushlight and whale-oil brazier lie buried. The electric light of the future, according to this eminent scientific authority, will be a diffuse white illumination, which will seek out every corner and crevice, in all respects like the beautiful light of day.

IN compliance with a resolution of the Senate, the United States Consuls have been directed by the State Department to prepare reports on the use of electricity as a power in the propulsion of farm machinery and implements and in the propagation of plants in their respective districts. The papers received in pursuance to these instructions are going through the press and will soon be issued by the department. They show that at only a few places have even experiments in these directions been made.

AN American has devised a method of signalling by incandescent lights, by which the whole letter is shown at once, in place of installments as usual with the Morse code. The apparatus consists of a narrow box, open on one side, containing a row of 106 incandescent lamps. Two of these lamps represent a dot and ten a dash. The signals, it is said, have been successfully read at a distance of ten miles at night, and four miles in daylight, but the plant seems somewhat cumbrous.

THE idea of a lighted pathway across the Atlantic seems to be looming up as a possibility. Some time ago it was suggested that such a scheme was practicable, and would tend in many ways to increase the safety of ocean liners and other ships sailing between Europe and America. The question has been revived, and it is now proposed to light the Atlantic route from Ireland to Newfoundland. The plan is to put 10 powerful floating lights, 200 miles apart, and connect them by electric cables.

LAST December the Toronto Incandescent Electric Light Company reduced their price to customers from one cent per hour to eight-tenths of a cent per hour for 16 c. p. lamps. This step, the company state, resulted in almost doubling the volume of their business. Thus encouraged they have announced recently their decision to further reduce the price to six-tenths of a cent per lamp per hour. At this price incandescent electric lighting should displace gas in business establishments at least. It is said to be the intention of the Toronto gas company to meet this cut in rates for electric lighting by a corresponding reduction in the price of gas.

A RECENT act of the Connecticut legislature provides that whenever any railroad company shall have been chartered by the General Assembly for the purpose of operating street railways in any city, town or borough, it shall cause a plan to be made showing the highway or highways, street or streets through which it proposes to lay its tracks, to be presented to the mayor and common council of such city, the selectmen of such town and the warden and burgesses of such borough. The authorities of the municipalities have exclusive direction and control over the placing, erection, construction and maintenance of any tracks, wires, conductors, fixtures and apparatus, including the relocating and removal of the railway track for the purpose of public improvement.

AN electric journal asks whether some one cannot discover a way to prevent the slipping of street car wheels and thus remove a factor of danger in the operation of street cars, especially in winter. The cold and snowy rains are responsible for many of the collisions and other casualties which occur during the winter season. In Scranton, Pa., last winter, there was a sort of epidemic of collisions for a few days, chargeable entirely to this cause. The motormen claim that the custom of sprinkling salt on the rails to melt the snow and ice thereon is a good one to that extent, but a bad one in that when the salt becomes crushed and pulverized it makes the rails as slippery as before. In the meantime there is a chance of a fortune for the inventor who has the luck to hit on the right remedy.

THE readers of THE SOUTHERN ARCHITECT will do well to confer with the General Electric Company, whose Southern offices are located on the sixth floor of the Equitable building, Atlanta, Ga., for any information desired regarding either Edison or Thomson-Houston Electric Apparatus, or for proposals to wire public or private buildings for electric lights.

In The Atlantic Monthly Ellen Olney Kirk has a worthy sketch under the caption of "Strategic Movement." "His Vanished Star" by Charles Egbert Craddock, wends a satisfactory way. One reads of "A Boston School Girl in 1771" when one turns to Alice Morse Earle's paper, though it savors of Brown's Majorie Fleming. "Ben," by A. M. Ewell, is a good bit of work in a character way.

The Blue and Grey is an interesting summer number. There are two articles by Birmingham men—"The Battle of Port Royal" by Robert Chisholm and "The Story of a Flag" by Frank P. O'Brien. Both are noteworthy sketches being personal experiences well related. There are also good bits of fiction by Emma Wilmot, H. H. Hoker and Louis Goddes, and poems by Rosetta Sutton, Eva Best and others. Taken altogether it is a creditable publication.

The complete novel in *Godey's*, September, "Sis's Daughter" (Frederick B. Mott), is an improbable Western story, remarkably well illustrated, fairly well handled but not much above mediocrity. "The Woman Question in Japan" (Helen E. Gregory Flecher) will be read with interest by our own women but will not enhance their estimation of the Japanese. "Mr. Magog's Wooing" is a very bright little sketch (Mary Kyle Dallas). *Godey's* September Fashions, illustrated in half-tone and color, comprise all the very latest on this all important topic. The two colored plates of celebrated belles are well selected, particularly artistic and exquisitely rendered.

Demorest's Family Magazine for September is an "Exposition Number." The farewell message of the Infanta addressed to the Magazine is a very graceful adieu and the photographs which accompany it are good. The instantaneous interior views of some of the main buildings of The Fair emphasize paucity of attendance. A vista of the Foresty Building, Mine's Building, Machinery Hall, Horticultural Building and others disclose but a very small handful of spectators. Polly King's on "Modern French Painters," though necessarily superficial, is well worth reading. The Story of the Millennium (continued) is ingenious, but farfetched, even more than its title might indicate. The best thing in the magazine is "The Parliament of Religions," (William Pipe) a most interesting subject, ably treated and comprehensively illustrated. Of course the chief feature, from a feminine standpoint, is the September Mirror of Fashion.

Fetter's Southern Magazine for September contains most attractive and timely reading. "The Duty of Congress to the Silver Question" is ably presented by the Hon. Rozel Weissenger. "Fields of Gold" are laid at the door of the reader by Elizabeth Holloway, and Frank Bicknell tells of the thrilling experience of a bank cashier who found himself "ten thousand short." Redd Rowell paints the portrait of "Lieutenant-Colonel Mintcastle" and his ante-bellum contemporaries with the faithfulness of one "to the manner born." Francis Lynde shows his ability as a story teller and his close observation of the hill country folk of Alabama in "Bud Hester's Legacy." Madison Cawein contributes a stirring poem quite in a new vein—the war lyric, "Mosby at Hamilton"; Edgar Fawcett writes of "Clouded Nights," and Minnie Machen Sayre brings a prose poem called "The Flute Player," beautifully illustrated by Vanderpoel. Most notable is the article on "American Architecture—Its Past and Promise," by Ione Estes Dodd, finely illustrated by W. J. Dodd, the well-known architect. C. Grunwalld, Jr., has illustrated the story, "Lieutenant-Colonel Mintcastle," in a manner which promises great things for this young artist in the future. The editorial departments are strong and timely.

Popular Science Monthly, September, devotes its first place to the great topic of the day, the silver question. Under the title "Why Silver Ceases to be Money," Prof. F. W. Taussig, of Harvard University, shows that the high price of silver hitherto has depended largely upon legislation, and that certain growing tendencies have caused its recent great fall. He points out also the prospects for the future use of the white metal as money.

Prof. Frederick Starr, on "Anthropology at the World's Fair," tell what collections, photographs, models, dwellings, groups of people, etc., are to be found among the exhibits of the great exhibition. Pictures of Eskimos, Kwakiools, together with houses and ruins, illustrate the account.

"Folklore Study in America" is the subject of an article by Lee J. Vance. Mr. Vance tells what organizations have been formed for work in this fascinating field of research, and illustrates his account with portraits of many prominent members of the affiliated association. Among others our own Joel Chandler Harris and the late Col. Charles C. Jones, Jr.

"The Pilgrim Path of Cholera," Ernest Hart, F. R. C. S., shows that the hordes of pilgrims gathered at Mecca, Kalighat, and other sacred places, bathe in and otherwise pollute and at the same time drink the waters, then scatter to their homes, conveying the disease broadcast to the shores of the Mediterranean and across to southern Europe. The indescribable scenes on the banks of the sacrad waters are shown from a number of instantaneous photographs.

"Scientific Cooking" is the subject of an essay by Miss M. A. Boland, Instructor in Cooking in the Johns Hopkins Training School for Nurses. It is "a plea for education in household affairs," pointing out the dangers of improperly prepared food, and the need of systematic instruction in cooking.

The complete novel in the September number of Lippincott's is "A Bachelor's Bride," by Mrs. H. Lovett Cameron. It tells of an unconventional and ill-starred marriage and its tragic consequences.

The seventh in the series of Lippincott's Notable Stories is "The Cross-Road Ghost," by Matt Crim. It is illustrated, as are two other brief tales, "Ishmael," by Richard Malcolm Johnston, and "The Carthusian," from the French of Amédée Pigeon.

Captain Charles King, in "Uncle Sam at the Fair," describes the Government Exhibit at Chicago, and tells how that part of it which relates to the army is thronged by visitors, while those which display the arts of peace are comparatively neglected.

"In the Plaza de Toros," by Marrion Wilcox, is an illustrated article describing an Easter bull-fight at Seville, "the cradle of the sport." The writer, like a good American, observed the spectacle closely, but with little admiration.

Mrs. Elizabeth Wormeley Latimer gives "A Girl's Recollections of Dickens" on his first visit to America in 1841.

A short study of "Forest Fires," by Felix L. Oswald, is accompanied by his portrait. Judson Daland, M. D., writes of "Hypnotism; its Use and Abuse." Commander C. H. Rockwell, of the United States Navy, narrates "A Sea-Episode" on a fever-stricken ship.

Under the heading "Don't," F. M. B. offers some advice to young contributors. M. Crofton, under "Men of the Day," discusses Kossuth, James Whitcomb Riley, and the Earl of Aberdeen.

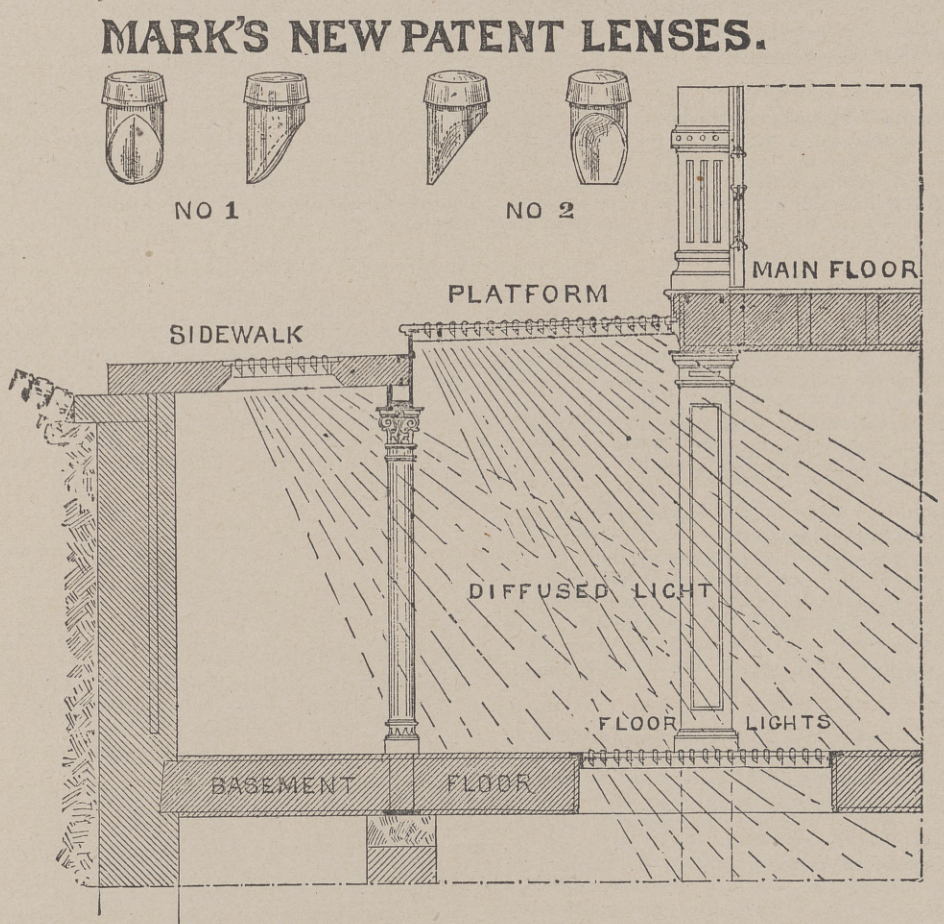
The poetry of the number is by Zitella Cocke, Margaret B. Harvey, Edgar Fawcett and James K. Philips.

A new submarine cable, 2,163 miles in length, has been laid and is now open for service between Brazil and the African coast. This adds another link to the electric chain which binds together the principal nations of the world.

MARK'S NEW PATENT LENSES.

The business of Jacob Mark, 7 Worth street, New York City, manufacturer of all kinds of vault lights for areas, sidewalks, roofs, floors and skylights, is one of the largest of its kind in the United States. Established in 1873, it has grown steadily year by year, the enterprise and inventive genius of the founder giving it continued impetus and greater scope, and bringing it to the support of a large and ever increasing patronage. Mr. Mark has recently made some notable improvement in lenses for sidewalks, areas, floors, roofs and skylights. These goods, though but a comparatively short time upon the market, are meeting with much favor and are destined to become extremely popular. They are shown in Figs. 1 and 2, and have bi-convex and concave surfaces in a diagonal position with relation to the axis of the lenses, whereby they are enabled to refract and reflect. Fig. 3 shows very clearly the effect of the use of these new style lenses and the direction given to the rays of light passing through them.

The advantages possessed by them over other lenses generally used are apparent. They economize space with a greatly improved light, and, as they distribute the light *horizontally* and *diagonally* throughout the apartment, permit in many cases the use of room which would otherwise be useless, and where land is expensive this is a desideratum especially looked for by architects and owners. The greatest difficulty in other long tail lenses, having any angle other than a right angle, or having a flange or burr in any way projecting under the bearing upon which the top of the lenses are set, or having any flange, burr, edge or groove around the pendant, is that they catch the condensation that takes



place on the under side of the plate or tile, around the narrow sections of the castings, between the lenses, which, mixing with the dust that gathers and settles around and upon grooved, flanged and obtuse-angled lenses, instead of freely dropping off, becomes thick and glutinous, filling the grooves and covering the glass so that in a short time the light is entirely obscured.

Besides this, glasses of the kind mentioned are not easily cleaned. The pendant of Mark's Patent Lenses, being *perpendicular*, with a diagonal surface, and setting at right angles with the plate, are free from this great gathering of dirt, and are very easily cleaned when this is desired.

Jacob Mark, 7 Worth street, New York City, does a big business in improved vault lights for areas, sidewalks, floors, roofs and skylights. His work may be seen in the Philadelphia and Reading depot at Philadelphia, and hotels Savoy, Netherland, Waldorf, Imperial and Marlborough, New York City; also, in the Holland House and the new power house of the Broadway Cable road, at Houston street and Broadway, New York. Mr. Mark furnished two large concrete skylights for the power house. They are considered the largest ever constructed.

The Detroit Graphite Manufacturing Company, of Detroit, Michigan, report a very largely increased business recently. Among other large jobs where their paint is used is the M. C. R. R. Co., who are now reroofing their freight sheds, covering several acres with iron, and painting with No. 30 paint of this concern's manufacture. They are also receiving considerable demand for Graphite paints from Europe, after parties there had sent for samples and compared with other goods.

At the Columbia Exposition the Cortright Metal Roofing Co., of Philadelphia, exhibit the new shingle, "Victoria," which they claim is the latest and best out. Their metal slates are warranted to make a rain and snow-proof roof, handsome in appearance, fireproof, durable, easily and rapidly laid and suitable for all buildings having a pitched roof.

The Aldine Manufacturing Company, of Grand Rapids, Michigan, makers of the well known Aldine Patent Fireplace, in a letter under date of August 10th, say, "Although times and most kinds of business are reported dull, we are having a large demand for our artistic wood mantels and the celebrated *Aldine Firelace*. We are glad to report A No. 1 results from advertising done through THE SOUTHERN ARCHITECT.

Dexter Bros., of 55 and 57 Broad street, Boston, make an attractive show of their English Shingle Stain, at the World's Fair. The stain is made of the very best English ground colors, and contains no benzine, water or creosote, and will not freeze. The manufacturers claim superiority of color, which will not wash off and will retain its brightness. The stain has been thoroughly tested by many of the leading architects in this country during the past six or seven years. A package of stained boards will be sent by mail to any address upon application. These small sample boards give but an imperfect idea, however, of the beauty of the stain, as the effect of stained shingles can only be seen in a mass on the house.

A dainty, artistic case, embossed blue lettering on a satin gloss straw tint of exquisite finish, carrying with it the impression of being the outside shell of a *de luxe* edition of some rare little work, really represents the cover of a souvenir edition of the Herendeen Manufacturing Company's new catalogue– a truthful description, pictorial and letter press—of the "Faultless Furman" Hot Water and Steam Boiler. Scattered through the book are over a hundred half-tone cuts of houses and buildings throughout the country which are heated by the Furman Boiler. The book is larger than anything previously issued by this firm; all the engravings of boilers are new and bring out in detail the latest improvements.

The Capitol Heater Company, of Detroit, have made application to change the name of their corporation, and they will in future be known as the United States Heater Company, of the same city. They have acquired the business in Bolton hot water heaters so successfully prosecuted during the past few years by the Detroit Heating and Lighting Company. This company at present controls the original Bolton heater, as well as the Capitol hot water heater, and will in due time have a complete line of steam boilers. The officers of the United States Heater Company, Messrs. Henderson and Smith, are well and favorably known by reason of their long association with the Detroit Heating and Lighting Company, and it is generally admitted that much to their enthusiastic efforts is due the very prominent position which the Bolton heater holds to-day in the eyes of the trade.

The stone for the new courthouse at Fayetteville, N. C., will be furnished from the well known quarries of the Carolina Brown Stone Co., of Raleigh and Sanford, N. C. This firm also furnish stone for the new K. of P. building at same place.

The Cutler Manufacturing Company, Rochester, New York, sole makers of U. S. Mail Chutes, have, by request of the Hon. Director-General, placed four mail chutes in use in the Administration Building, at World's Fair, in addition to the regular exhibit at Section E, Column 108 U, in the Liberal Arts Building; also, by request of the Post-office Department of the United States, a special exhibit in the Post-office Section of the Government Building.

The Willer Manufacturing Company, of Milwaukee, Wiss., have issued an advertising sheet showing a general view of the Marion High School Building, at Marion, Ind., which is furnished throughout with the Willer sliding blinds. Below the picture of the building are photographic copies of letters received from the president of the School Board, at Marion, Ind., and also from the contractors and architects of the building.

Among the Southern work now being executed by the Roanoke Roofing and Metal Cornice Works, of Roanoke, Va., are the following

Pepper-Buxton—Business Block, at Winston, N. C., copper and galvanized iron trimmings, tin roof, slate tower and skylights; Bladen County Courthouse, Elizabethtown, N. C., slate roof, terra cotta tower, galvanized iron trimmings; Day Business Block, Roanoke, Va., galvanized iron trimmings; business house for Mr. C. Markley, Roanoke, Va., galvanized iron trimmings.

A suggestion comes from the *Manufacturer's Record* advocating a uniform size for trade catalogues issued by the various building supply houses, machinery and similar manufacturers.

It is a good one and we should much like to see it followed out, but we doubt whether it will ever take practical shape. Manufacturers have their own ideas on the subject and the firm who issues a neat little 4x6 is probably firmly convinced that as a descriptive list of their particular goods, it is far more effective than either folio, quarto or blanket.

Home Warming and Ventilation is a neat little pamphlet containing a collection of articles from Nath'l C. Fowler, Jr.; William J. Baldwin, M. E.; Anson W. Burchard, M. E.; Richard Swallwell; John Hopson, Jr.; Allen Forman; John S. Billings, M.D., LL.D.; J. Jenkins; "A. N. Bell; J. W. C.;" "American Architect;" Loring & Phipps; William Eassie, C. E.; Albert H. Buck, M. D.; W. P. Trowbridge; Boston Journal of Commerce; Jos. A. Woodhull; Francis A. Herendeen, authorities who are disconnected with business, thoroughly competent by study and experience to write upon these important subjects, and whose judgment is not biased by mercenary motive, and who have no interest in any particular heating apparatus or boiler manufacturing firm. It is issued by the Herendeen Manufacturing Co., of Geneva, N. Y.

Hodge Brothers, of 15 Chardon street, Boston, Mass., have just put on the market a new gasket especially adapted for steam fitters' use, although it is also adapted for all joints. It is a combination gasket, made of alternate rings (on both sides) of a soft and pliable metal and rubber for ordinary work, for acids, alkalis, oils, salt, varnish and chemical rings of asbestos are used, for high-pressure work rings of soft copper wire are used adapting these gaskets for all kind of joints. They are made any size and shape desired. There is no waste in using them. They can be used over and over repeatedly. They do not corrode, rot, burn or blow out, and work up into all the uneven parts of the surface. For man and hand-holes they make a tight and lasting joint, for flange pipes they are absolutely tight and non corrosive. For iron unions they make as tight and lasting a joint as if a brass fitting was used, but at less than one third the cost. Every gasket is guaranteed. Send for circulars and prices to the manufacturer.

It may be of interest to our readers to learn that Messrs. Rinald Bros., Philadelphia, the well-known manufacturers of Bessemer Paint and Porcelain Enamel Paint, have lately acquired the exclusive right of manufacturing in this country, a material which has made quite a reputation for itself throughout Germany. This material, which is known by the name of Ferronate, is a preparation which, when applied to unpainted or polished iron or steel, will effectually protect the metal against rust. It is perfectly transparent, so that its presence cannot be noticed. It is not a grease, and therefore is not subject to decomposition; in other words, it will not get "rancid," and will not soil articles coming in contact therewith. Ferronate is perfectly free from acids or anything injurious to the metal, and is applied in one thin coat with a brush. It dries perfectly hard within a few minutes, and is easily removed by a stout rubbing with a rag or waste. As it is quite inexpensive, we believe it will be quickly adapted by builders, to whom the rusting of metal stored on the premises for some time before being used has always been a source of great annoyance.

The tendency of modern architects and builders is to do away with outside blinds, which up to a few years ago were thought to be indispensable to the comfort of a dwelling, but the great improvements made in the manufacture and operation of inside blinds are found to serve a much better purpose, besides adding much to the beauty and finish of an apartment. Some years ago it was thought that a good house could not be finished without inside blinds, and only elaborate details were necessary to operate them. Outside walls were increased in thickness, boxes formed for receiving the blinds, paneled backs, elbows, soffits and aprons were some of the expensive items that put the use of inside blinds beyond the reach of the ordinary builder; hence in modern houses, architects and builders gradually ceased their use on the score of cost as well as the loss of space and difficulty of operation.

By the use of a sliding inside blind, such as manufactured by Geo. Poppert, of Milwaukee, Wis., all of the objectionable features and expensive items of cost are done away with and at the same time the same effect of elegance of finish and convenience of application is maintained.

This class of inside blinds can be made of any wood to match the finish of the apartment however ornate and elaborate. They are made very light, and are arranged to run on metal strips which can be adjusted and not bind in the frame, and as metal does not swell or shrink like wood, they will not stick, a feature that will not fail to be appreciated. These blinds are balanced and stay wherever they may be placed by means of lead weights and not by means of coiled springs, which Mr. Poppert claims work uneven and are less liable to get out of order. The weights run in grooves at the back of frame, taking up so little room that they would not be noticed, no box being required. The cords run over glass cylinders instead of pulleys which sometimes rattle. By this means they are made to run fully as easy and the friction reduced to a minimum, with the advantage of making no noise whatever.

Mr. Poppert has a handsome exhibit in the Manufacturers' Building at the World's Fair, which the public is cordially invited to call and inspect.

CHANGE OF ADDRESS.

Our works have been removed from Beaver Falls, Pa., and we will hereafter be known as the Hartman Manufacturing Company of Ellwood City. Ellwood City, Lawrence county, Pa. Eastern Sales Agency: 277 Broadway, New York. Western Sales Agency: 508 State Street, Chicago. Southern Agency: 73 Forsyth street, Atlanta, Ga.

HARTMAN MFG. CO.

TO THOSE VISITING THE WORLD'S FAIR.

We cordially invite you to inspect the Battery of 4 No. 8 Furman Steam Boilers which were selected by the exposition officials, and are now in use heating the large greenhouse at the World's Fair. These greenhouses are located directly west of the Horticultural Building.

We also would be greatly pleased to have you call at our Chicago office, 801-804 Unity Building, 79 Dearborn street, where our managers, Mr. A. G. King and Mr. F. W. Herendeen will be glad to show you the Sample Furman Boilers on exhibition and give you all the information possible regarding our boilers and Hot-Water and Steam Heating. Respectfully yours,

THE HERENDEEN MANUFACTURING CO.

GEORGIA SLATE.

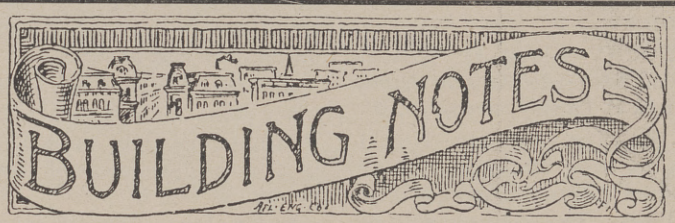
Messrs. W. W. Jones & Co., of Rockmart, Georgia, are now putting on the market, at the lowest prices known to the trade, the finest quality of slate ever produced in the United States. The slate is a dark blue, and its chemical composition is such that instead of disintegrating on exposure it hardens. The slate quarried two years ago, after being exposed to the rains and heat, is much harder than that quarried recently.

The quarry Messrs. Jones & Co. are working is the best yet opened, and the superior quality of its product is fast becoming popular. They have facilities for turning out from 150 to 200 squares per month, and have about 200 squares assorted sizes on the yards at the present time.

Two railroads give them excellent shipping facilities and enable them to compete with other quarries at any point and to undersell all in the South.

In order to demonstrate its superiority to the architects and dealers Messrs. Jones & Co., will send free to all who enclose their business cards samples and prices of their slate.

Address, W. W. JONES & CO.,
Rockmart, Ga.



BUSINESS BLOCKS.

Atlanta, Ga.—Messrs. F. J. Cooledge & Bro. will build a five story business block on Forsyth street. Plans have been made and accepted.

Atlanta, Ga.—Boston capitalists will commence the erection of an eight story business block on the corner of Broad and Marietta streets. The building will be of latest modern design, and will cost $100,000.

Memphis, Tenn.—The contracts have already been let for the erection of a four story building on lots 346 and 348. The architects, Jones, Hain & Kirby, say this building is to be strictly first class in every particular and is to cost $25,000. The front will be built of Missouri blue sandstone, with large plate glass windows. The ceilings are to be very high, those on the first floor being eighteen feet and the others fifteen and fourteen feet. It was the object of those who planned this building to give as much light as possible. Electric lights and gas will be put in through all the floors.

It will also be equipped with elevators, closets in basement and second story, with provisions for them on every floor if necessary. The whole structure is to be finished in ash. The building, consisting of two stores 23 x 113, is to be completed by September 1, this year.

Mrs. Hamilton has now under construction a very fine four-story and basement building on the lots Nos. 33 and 35 Union street, which is also to cost $25,000. It consists of one store 25 x 201 feet, built extra strong, having the same capacity to hold heavy goods as the Main street structure. It is also equipped with elevators, electric lights and all modern improvements, being, it is said, one of the finest wholesale buildings in the city.

Guthrie, O. T.—Way Bros. will build three brick and stone stores, at a cost of $18,000.

Wingfield Smith will build a block of stores, at a cost of $15,000.

Orlando, O. T.—A bank building, at a cost of $8,000, will be erected here soon. Names of parties unknown.

Savannah, Ga—A. S. Eichberg has made plans for a brick business block for McKenna & Welsh, to cost $8,000.

Paducah, Ky.—Brinton B. Davis has made plans for a building for the German-American National Bank, to cost $15,000.

Bonham, Texas.—Sparger & Peters have made plans for a warehouse for W. A. Nunnelee & Co.; cost $5,000.

Greenville, Texas.—Sparger & Peters have made plans for a brick store for R. W. Campbell; cost $4,500.

Birmingham, Ala.—J. W. McClain has made plans for a four story brick and stone store, 50 x 182 feet, to cost $20,000.

Atlanta, Ga.—Golucke & Stewart have made plans for a brick and stone building for A. J. Stone, to cost $12,000.

Jacksonville, Fla.—Golucke & Stewart, Atlanta, have made plans for an eight story office building for Lake Shore Land Company, to be built of Georgia marble, granite and buff brick, and to cost $40,000.

Greenwood, Miss.—J. F. Barnes is building a brick store for R. T. Jones, to cost $2,100.

Atlanta, Ga.—Moses Lipes has contracted to build a store building for M. C. Kiser, at a cost of $3,000. Bruce & Morgan, architects.

Fort Smith, Ark.—J. A. Hoffman reports three story brick store for Gen. R. S. Gattin, to cost $3,300.

Toledo, Ohio.—Bacon & Huber have made plans for block of stores and flats for Hon. I. P. Pugsley, to cost $6,000. R. C. Hattersley has the contract.

Cleveland, Ohio.—S. R. Badgley has made plans for store and office block for F. A. Arter, to cost $10,000.

St. Louis, Mo.—Beinke & Weiss have made plans for a hotel for the Central Wesleyan college.

Atlanta, Ga.—Mr. G. V. Gress will put in new front to his stores on Whitehall street at a cost of $7,000.

Atlanta, Ga.—Bruce & Morgan are preparing plans for a new front to the building occupied by Eiseman Bros. on Whitehall street.

Princeton, Ky.—D. A. McKinnon of Paducah, Ky., has made plans for a hotel for J. P. Smith to be built of brick and stone at a cost of $12,000. Will want elevator, steam heat, electric bells and furniture.

Madisonville, Ky.—D. A. McKinnon, of Paducah, Ky., has made plans for a block of stores to be built of brick and stone for Holeman & Dempsey, to cost $7,000.

Clarksville, Texas.—O. H. P. Rudisill & Son, of Houston, Texas, have made plans for a bank building for the First National Bank to be built of brick and stone at a cost of $10,000. R. W. Albright has the contract.

Houston, Texas.—O. P. H. Rudisill & Son have made plans for a block of stores for D. Burrisk to be built of wood at a cost of $6,000.

St. Louis, Mo.—J. W. Burkley has let contract to Nicholson Bros. for a three story business block to cost $10,000.

The Collier Estate has let contract for their seven story building to Givans & Stimhoff at a cost of $150,000.

W. C. Eckhoff will build a three story furniture factory, corner 21st and Palm streets, at a cost of $8,000.

Baltimore, Md.—The Builders' Exchange will remodel the building at the corner of Lexington and Charles streets.

The present Lexington street front will be partly used. In addition to the present front the house joining on the east will be torn down and replaced by a new building. The Lexington street front will be of stone.

An entire story will be added to th building, making it five stories in height. Its dimensions when complete will be 85x75.

The building will be heated by steam

with a steam heating and power plant in the cellar.

All the material used in the first floor will be fireproof.

The entrance hallway will be finished in marble. An iron stairway will go up the elevator shaft.

The improvements will cost about $90,000.

Baldwin & Pennington are the architects. They prepared the plans for remodelling. The builders are S. H. and F. J. Adams.

Knoxville, Tenn.—Extensive improvements will be made on the Hotel Hattie at an early day. A story and a half will be added to the present building, a new wing eighty-five feet in depth will be built. The proprietors, Messrs. Flanders & McNulty, desire to purchase electric light machinery, a cold storage plant, steam passenger elevator, engine and boilers, ventilating apparatus, ranges, water closets, bath tubs, tiling and steel ceiling.

Houston, Texas.—Geo. E. Dickey has made plans for a brick and stone office building for T. H. Scanlan, to cost $18-000; C. H. & J. Stadler are the contractors.

Also plans for a brick and stone business block for Sweeney & Jamison, to cost $15,000; Renfroe & Mahoney, builders.

H. C. Holland has made plans for a business block for Ed. Kiam, to be built of stone and iron, and cost $40,000.

F. S. Storer has made plans for an office building for J. T. Mason, to be built of stone and iron, at a cost of $50,000; Renfroe & Mahoney, contractors.

Roswell, New Mexico.—B. F. Daniel has made plans for business block to be built of stone, for Walters & Co.; cost, $2,600; Daniel & McDonald are the contractors.

Also, business house of stone for Richey & Etons, to cost $2,750.

Whiteville, N. C.—J. F. Post, Wilmington, N. C., has made plans for a brick store for J. D. Maulsby, to cost $4,500.

Columbus, Ga.—A. Webb has contracted to build a brick business house for C. Solomon, on Broad street, to cost $3,500.

Leipsic, Ohio.—Bacon & Huber, of Toledo, have made plans for brick store for J. H. Edwards, to cost $4,000.

Henderson, Ky.—P. B. Trible & Son have made plans for six storehouses for N. Backer, to cost $13,000.

Also plans for store and office building for Mining & Manufacturing Company, to cost $2,500.

Florence, S. C.—Chas. C. Wilson, Roanoke, Va., has made plans for a store building for E. P. Pawley, to cost $5,000.

Atlanta, Ga.—The Evening Herald will erect a ten-story building for their own use corner Edgewood avenue and Exchange Place. The building will be of fireproof material and will cost $40,-000. Plans not yet made.

CHURCHES.

Gainesville, Fla.—W. T. Cotter has made plans for a church for the Baptists, to be built of brick and stone; cost $8,000.

Kingfisher, O. T.—The Presbyterians will build a brick and stone church, to cost $8,000. Plans have not been accepted.

Paducah, Ky.—B. B. Davis has made plans for a frame church for the Baptists; cost $2,600.

Frame church for the Presbyterians; cost $2,100.

The Methodists at this place contemplate building an edifice to cost $40,000. Plans have not been adopted yet.

Eustis, Fla.—Bruce & Morgan, Atlanta, Ga., have made plans for a frame church for the Christians, to cost $2,500.

Gadsden, Ala.—The Southern Manufacturing Company report a stone and brick church for the Baptists, to cost $15,000. A. D. Simpson is the architect, and Chadwick & Simpson, builders.

Gouverneur, N. Y.—S. R. Badgley, Cleveland, Ohio, has made plans for a marble church for Baptists, to cost $20,000.

Paducah, Ky.—D. A. McKinnon has made plans for a church edifice for the Methodists to be built of stone ashlar at a cost of $40,000. Will want steam heat, stained glass and interior finish in addition.

Plehweville, Texas.—B. D. Price, Philadelphia, Pa., has made plans for a frame church for the Methodists to cost $3,200. O. Mebus has the contract, Weinor, Texas.

O. H. P. Rudisill & Son, Houston, have made plans for a frame church for the A. M. E. congregation to cost $3,000.

Houston, Texas.—O. H. P. Rudisill & Son have made plans for a frame church for the Christian congregation to cost $2,000.

Also a frame church for the Baptists at the same place to cost $2,000.

New Orleans, La.—C. O. Freret has the contract for building the two story chapel for the Convent of Perpetual Adoration at a cost of $8,835.

Houston, Texas.—Geo. E. Dickey, has made plans for a church edifice for the Presbyterions, to be built of stone, at a cost of $50,000; none of the contracts yet let.

Selma, Ala—Park & Hunt, Chattanooga, have secured the contract for the erection of the Presbyterian church, at a cost of $30,000

Woodstock, Ohio.—Messrs. Crapsey & Brown have made plans for a church edifice for the Universalists, to cost $8,000.

Henderson, Ky.—P. B. Trible & Son have made plans for a Baptist church, to cost $2,500.

Sebree, Ky.—P. B. Trible & Son, Henderson, Ky., have made plans for a church for Baptists, to cost $2,500.

MILLS AND FACTORIES

Savannah, Ga.—The Southern Land Company will build a cotton mill of 30,000 spindles.

PUBLIC BUILDINGS.

Gainesville, Fla.—W. T. Cotter has made plans for the National Odd Fellows Sanitarium, to be built of brick and stone, at a cost of $15,000.

Edmond, O. T.—This place will build a brick school building, at a cost of $5,000. Plans have not been accepted yet.

Stillwater, O. T.—H. M. Hadley, Topeka, Kan., is the architect for the A. & M. College, to be built of brick and stone, at this place. H. Ryan has the contract.

Henderson, Ky.—Messrs. Crapsey & Brown have made plans for a brick school house, to cost $15,000.

Silverton, O.—A. R. James, Cincinnati, O., has made plans for a school house, to be built of brick, at a cost of $4,800.

Braidentown, Fla.—H. Wadham has the contract for building the court house here, at a cost of $3,500.

St. Louis, Mo—The Board of Public Schools has awarded the contract for three school buildings to H. B. Baecker, Wm. Damon and M. Britt, at a cost of $64,000.

J. H. Bright has the contract for basement of the convent of the Sisters of the Good Shepherd, at $43,000.

Paris, Texas.—W. G. Barry has made plans for three school houses, to be built of brick and stone, at a cost of $15,000. Will want blackboards, seats and other school furniture.

Hickory, N. C.—Elliott & Elliott have secured the contract for building the court house at this point; cost $20,000.

Friars Point, Miss.—W. S. Hull has made plans for a press brick and stone court house for Coahoma county, to cost $20,000.

Clarksdale, Miss—L. T. Noyes has made plans for jail for this county, to cost $10,000.

East Toledo, Ohio.—Bacon & Huber, Toledo, have made plans for Home for the Aged for the Little Sisters of the Poor, to be built of brick at a cost of $15,000.

St. Louis, Mo.—Chas E. Illsley reports Orphans' Home for Christian Beneficial Association. A. A. Bartholomew, builder, at a cost of $15,000.

St. Louis, Mo.—The Board of Public Schools has let contract for a brick school building, corner Maple and Goodfellow avenues, at a cost of $15,000.

Pratt City, Ala.—J. W. McLain, Birmingham, has made plans for an eight room school building to cost $5,000. The Board of Education can give information as to the letting of contract.

Gainesville, Ga.—A. W. Candler has secured the contract for the college to be built by A. W. Vanhoose at a cost of $25,000. W. W. Goodrich, Atlanta, is the architect.

Roswell, New Mexico.—B. F. Daniel has made plans for a schoolhouse for the Board of Education, to cost $2,000.

Bridgepo t, Ohio.—M. F. Gussey has made plans for a public hall for the Union Hall Association, to be built of brick at a cost of $15,000.

Morlington, Va.—The Manley Manufacturing Company, of Dalton, Ga., have secured the contract for building the courthouse and jail at this point at a cost of $30,000.

Montezuma, Ga.—A new courthouse and jail will more than likely be built here at an early day.

Wilming on, N. C.—St. James church is building a gymnasium at a cost of $1,700.

St. Louis, Mo.—The Board of Education has let the contract for a two story school building on Twenty-fifth street to B. Stark, at $16,225.

Also, two story school building corner Eleventh and Adelaide streets, to same party, at $12,000.

East Toledo, Ohio.—Bacon & Huber have made plans for a Home for the Aged for the Little Sisters of the Poor. Arnsman Brothers are the contractors, at $16,000.

Henderson, Ky.—Crapsey & Brown have made plans for a schoolhouse for the Board of Education, to cost $15,000.

Memphis, Tenn.—The committee appointed by the County Court has let the contract for repairs to the courthouse for $11,975, to Joseph Haynes.

Isabella, Ga—The county courthouse burned here on the 9th instant, will be rebuilt at once.

Homerville, Ga.—The contract for building a brick jail for this county was let to-day to the Manley Manufacturing Company, of Dalton, Ga., for $4,999. Work will begin in a few days. The County Commissioners anticipate building a fine courthouse at some early day.

Milledgeville, Ga.—The committee appointed at the last session of the legislature to confer with the Trustees of the State Lunatic Asylum regarding some plan for relieving the overcrowded condition of that institution, met at the asylum on last Monday. It was decided that the legislature be recommended to appropriate $120,000 to the erection of new buildings. A $100,000 addition is recommended to be built to the $20,000 smallpox building erected some years ago, and devoted to the use of negro lunatics. The building now occupied by negroes will be fitted up for the use of whites at a cost $20,000. These new buildings will make room for about 600 more patients than can now be accommodated at the asylum.

Atlanta, Ga.—The long talked of auditorium for Atlanta is now said to be an assured fact. The Gate City Guard will build it, and its cost will be between $70,000 and $90,000. The location has not yet been definitely decided upon, but the chances are that the present site of the cyclorama will be the one selected. The old armory will be sold and the proceeds, together with the subscriptions from the members, will be used in the erection of a magnificent building, to be used as an auditorium and armory.

Jasper, Fla.—At a recent election bonds were authorized to be issued to raise funds to put an addition to the Normal College.

Elberton, Ga., will vote on the 23d instant on the question of the issuance of bonds for the erection of the new courthouse.

RESIDENCES.

Memphis, Tenn.—Mrs. Stony Shepherd is constructing a new frame dwelling on Cossitt avenue, to cost $5,000. It is a modern home in every sense of the word, having electric lights and bells, speaking tubes and hardwood floors, outside chimneys, and the whole to be finished in the best quartered oak.

D. E. A. Neely is building a residence at the corner of Orleans and St. Paul streets, of the most modern kind, having a roof of green Vermont slate, and sides of weatherboards and shingles to match.

A. L. Adelotte is also building a fine ten-room residence on Walker avenue, having slate roof and all the modern innovations.

Waterford, Ky.—J. C. Batcheldor has made plans for frame residence for D. B. Day, to cost $3,000.

Valley Hill, Ky.—J. C. Batcheldor has made plans for a residence for Palmer Goalley, to cost $1,800.

Booker, Ky.—J. C. Batcheldor has made plans for a residence for James Suttles, to cost $1,600.

Cincinnati, O.—Nash & Plympton have made plans for a residence for Calvin Neare, at Avondale, to be built of stone and half timber; cost $7,500.

Residence for John Schneider at Wal-

nut Hills, to be built of concrete and plaster; cost $7,000.

Nash & Plympton have made plans for a residence for D. M. Hay at Avondale, to cost $8,000.

Richmond, Va.—C. Ruehrmund has made plans for a frame residence for Ch. Metzger; cost $3,500; Wm. Timmerman, builder.

Stillwater, O. T.—Mr. Abercrombie will build a brick residence, at a cost of $5,000.

Fordyce, Ark.—E. Cook has made plans for a residence for J. D. Clary; cost $2,000.

Wilmington, N. C.—J. F. Post has made plans for frame dwelling for E. Sprout, at a cost of $3,500.

Residence for Mrs. Larkin, at a cost of $2,500.

Paducah, Ky.—Brinton B. Davis has made plans for a frame residence for F. L. Scott, at a cost of $6,000.

Murray, Ky.—Brinton B. Davis, Paducah, Ky., has made plans for a frame residence for B. B. Linn; cost $2,000.

Residence for R. Downs; cost $2,500.

Benton, Ky.—Brinton B. Davis has made plans for a frame residence for J. F. Fruos; cost $1,600.

Bonham, Texas.—Sparger & Peters have made plans for residence for Chas. Holsell; cost $3,600.

Residence for J. B. Abernathy; cost $1,500.

Galveston, Texas.—C. W. Bulger has made plans for residence for John Hanna, of brick, to cost $4,000.

Residence for Judge Ficket, frame; cost $3,000.

Tyler, Texas.—L. W. Wells, civil engineer and architect, reports:

Residence for Guy Sandage; cost $4,000.

Residence for S. A. Lindsay; cost $1,500.

Residence for J. M. Logan; cost $3,500.

Residence for C. L. Cospany; cost $3,000.

Residence for A. M. Duke; cost $5,500.

Residence for G. C. Wimberly; cost $6,500.

Residence for J. E. Martino; cost $4,000.

Residence for H. B. Oden; cost $2,000.

St. Louis, Mo.—C. E. Illsley, Equitable Building, reports:

Residence for Jas. Green; cost $20,000.

Residence for J. E. Luebden; cost $7,000.

Residence for G. Hamfleman; cost $4,000.

Birmingham, Ala.—D. A. Helmich has made plans for residence for Caldwell Bradshaw, to cost $5,000.

W. B. Copeland is building a $3,000 residence on the South Highlands.

J. W. McLain has made plans for a brick and store residence, to cost $10,000. Owner's name not given. No part of contract let as yet.

Greensboro, Ala.—W. S. Davis, contractor, will build a residence for Dr. Ward, to cost $3,000.

Jacksonville, Fla.—Golucke & Stewart, Atlanta, have made plans for a residence for W. A. Walker, to be built of brick and wood; cost $20,000.

Charleston, S. C.—Golucke & Stewart, Atlanta, Ga., have made plans for a frame residence for O. E. Massey, to cost $9,000.

Charlotte, N. C.—Golucke & Stewart, Atlanta, Ga., have made plans for a brick and stone residence for J. A. Thrope, to cost $16,000.

New Orleans, La.—Albert G. Laddell is erecting a $4,000 residence on Hampton street.

Richard H. Crawford will build a $4,000 residence corner Clinton and Hillary streets.

Marietta, Ga.—Hayden & Wheeler, Atlanta, Ga., have made plans sor a frame residence for J. H. Rogers, to cost $2,500.

Waco, Texas.—W. W. Larmour has made plans for a residence for Louis Gobert; P. A. Harris, builder, to cost $2,000.

Residence for C. Dean; Powers & Garrett, builders; cost $3,000.

Residence for Mrs. S. F. Varis; C. Schneider, builder; cost $1,800.

Residence for Harry Lewine; J. E. Mander, builder; cost $4,000.

Residence for F. M. Gardner; Powers & Garrett, builders, cost $9,000.

Residence for E. A. Sturgis; cost $11,000.

Round house for Waco and Northern Railroad, cost $2,500.

Fort Smith, Ark.—J. A. Hoffman reports residence for D. J. Young; cost $3,000.

Cincinnati, Ohio.—G. W. Drach has made plans for residence for John Jones, Clifton, to cost $15,000.

Fremont, Ohio.—Bacon & Huber have made plans for frame residence for Simon Dryfuss, to cost $6,000.

Greenville, Miss.—J. F. Barnes is building a brick and iron stable for H. E. Witherbe, at a cost of $1,000.

Also three cottages for Greog & Carreno, to cost $2,000.

St Louis, Mo.—Beinke & Weiss have made plans for a block of flats for Chas. Rippe, corner Eads and Nebraska avenue.

St. Louis, Mo.—Chas. E. Illsley, Equitable, reports the following permits:

Two story brick dwelling for Elna French, $5,000.

Two story brick dwelling for Henry Hill, $7,000.

Two story brick dwelling for A. T. Hollister, $3,500.

Two story brick dwelling for A. Gronemeier, $7,400.

Three story brick dwelling for Mrs. A. Sanders, $4,500.

Two story brick dwelling for Wm. Koenig, $8000.

Two story brick dwelling for A. C. Dallas, $8,000.

Two story brick dwelling for Jos. Lagler, $3,000.

Two story brick dwelling for F. Hartman, $5,500.

Two story brick stable for E. N. Powell, $22,000.

Columbus, Ga.—W. Riley Brown will build a handsome residence on First avenue, near Tenth street.

Paducah, Ky.—D. A. McKinnon has made plans for a frame residence for Mr. Atkerson; Cole & Cooper, builders; cost $3,000.

Plehweville, Texas.—R. Grosse has made plans for a frame residence for Jas. Brandenberger to cost $1,200.

Houston, Texas.—O. H. P. Rudisill & Son have made plans for frame residences for C. C. Barefield, cost $3,500.

E. Rigby, cost $4,009.

Chas. Heyer, cost $2,000.

W. B. Griffin, cost $4,000.

St. Louis, Mo.—Chas. E. Illsley reports the following permits:

E. Scown, two story brick dwelling, cost $5,000.

J. B. M. Kehlor, addition to brick dwelling, cost $5,000.

Wm. Mauerhoff, three story brick dwelling, cost $5,000.

Mrs. Staley, three story brick dwelling, cost $4,250.

J. Gross, two story brick dwelling, cost $6,000.

C. A. Puellis, two story brick dwelling, cost $8,000.

Kirkwood, Ga.—W. W. Goodrich, Atlanta, has made plans for a frame residence for Gen. John B. Gordon to cost $10,000.

Shreveport, La.—N. S. Allen has made plans for a cottage for John B. Morris to cost $3,000.

Cottage for Arthur L. Kahn at a cost of $2,500.

Albany, Ga.—J. B. Leonard has made plans for a frame residence for R. L. Jones to cost $1,600. Cruger & Pace have the contract.

Bruce & Morgan, Atlanta, have made plans for cottage for R. L. Jones to cost $1,800. Cruger & Pace have this contract also.

Union Springs, Ala.—J. B. Leonard, Albany, Ga., has made plans for frame residence for F. Anderson to cost $1,575.

Arlington, Texas.—The North Texas Architectural Co. have made plans for frame residence for Thomas Spencer to cost $3,000.

Richmond, Va.—P. J. White has made plans for a mess hall for the Soldiers' Home to cost $5,000.

St. Louis.—Chas. E. Illsley, Equitable Building, reports the following permits:

Three story brick dwelling for James Bauer; cost $10,000.

Three two and a half story brick dwellings for Mrs. Ann Schroeder; cost $4,500.

Three story brick dwelling for C. Umbach; cost $8,000.

Six one story dwellings for W. D. Brothers; cast $7,200.

Two story dwelling for Mary Ring; cost $3,500.

Two and one-half story brick dwelling for S. W. Horstman; cost $3,900.

Selma, Ala.—J. Fryberger has made plans for cottage for A. W. Cawthon; cost $3,000.

Also two cottages for Purviance estate; cost $3,000.

J. M. Baker is building a one story frame cottage on Lapsley street, at a cost of $1,700.

Henderson, Ky.—P. B. Trible & Son have made plans for a residence for Shelby Rudy, to cost $5,500.

Residence for Hanley Spalding, to cost $1,000.

Residence for Geo. W. Weed, to cost $2,500.

Hospital for Dr. J. H. Fletcher, to cost $5,000.

Roanoke, Va.—Chas. C. Wilson has made plans for a residence for Dr. J. Kinney, to cost $2,500.

WATERWORKS.

Hawkinsville, Ga.—The election that was to have been held to determine whether or not the city should establish a system of waterworks was indefinitely postponed. The principal cause of opposition by the citizens was that $10,000 could not give the city such a system as the size of the place demanded.

WAREHOUSE AND ELEVATOR.

New Orleans, La.—The Yazoo & Mississippi Valley Railroad Company have taken out a permit to build a grain elevator, at a cost of $54,800.

Toledano & Ruesch have the contract for a new roof for Hotel Fletcher, at a cost of $48,500.

RECENT PATENTS.

REPORTED BY E. C. WEAVER.

500,559. Weather Strip. McDuffee Bradford, Decatur, Texas. Filed July 19, 1892. Serial No. 440,517. Issued July 4, 1893.

500,587. Metallic Setting for Stained-Glass Windows. George B. Lee, Providence, R. I. Filed February 9, 1893. Serial No. 461,609. Issued July 4, 1893.

500,595. Metallic Ceiling. Charles C. Moore, Columbus, Ohio. Filed Februlo, 1893. Serial No. 461,834. Issued July 4, 1893.

500,616. Device for Attaching Water Conductors to Buildings. Oschar Ros-

enquest, Pittsbnrg, Pa. Filed June 28, 1892. Serial No. 438,343. Issued July 4, 1893.

500,687. Fireplace-Frame. Henry G. Dawson, Chicago, Ill. Filed October 22, 1892. Serial No. 449,545. Issued July 4, 1893.

500,756. Sash-Balance. Robert R. Cowl, South Melborune, Victoria. Filed January 28, 1893. Serial No. 459,935. Issued July 4, 1893.

500,759. Weather Strip. Henry C. Fuller, Bentonville, Arkansas, assignor of one-half to Thomas A. Watson, same place. Filed October 17, 1891. Serial No. 409,086. Issued July 4, 1893.

500,760. Sash-cord Fastener. Lincoln Gerhardt, Washington, D. C., assignor of one-half to Harvey B. Varns, same place. Filed April 3, 1893. Serial No. 468, 855. Issued July 4, 1893.

500,876. Safety Device for Elevators. Norman V. Fitts, Worcester, Mass. Filed September 30, 1891. Serial No. 407,338. Issued July 4, 1893.

500,880. Ventilator for Apartments. John Fransmen, New York, N. Y. Filed June 22, 1892. Serial No. 437,628. Issued July 4, 1893.

500,885. Weather Strip. Alison T. Green and Julius Wesselowski, Jewell, Kan. Filed July 18, 1892. Serial No. 440,381. Issued July 4, 1893.

500,963. Grain-door. John Sheridan, Quincy, Ill. Filed August 30, 1892. Serial No. 444,566. Issued July 4, 1893.

500,972. Work-guide for Saws. Valentine Stein, New York, N. Y. Filed March 25,1893. Serial No. 467,615. Issued July 4, 1893.

500,977. Keyhole-guide. Charles Taylor, Eccles, England. Filed February 17, 1893. Serial No. 462,748. Issued July 4, 1893.

501,029. Facing for Walls. David F. Saum, Washington, D. C., assignor of one-half to Jacob C. Donalson, same place. Filed April 18, 1893. Serial No. 470,865. Issued July 4, 1893.

LIQUID MICA.

The Arabol Manufacturing Company, 13 Gold street, New York, manufacturers of the above materiel, call our attention to an article by Fr. Nauert, a practical decorator, in the Munich (Bavaria) "Decorations-Maler," on Liquid Mica, a material which is extensively used by wall paper manufacturers, but which so far was entirely neglected by painters and decorators. Mr. Nauert writes:

"I made my first trials with the Liquid Mica and the effects obained came up to my expectations. Mica is white, more or less transparent, and has a gloss similar to silver. It does not cover sufficiently and needs a ground. Therefore if a silver gloss is wanted the ground has to be laid in with a clear white distemper color. After the distemper color is dry have it glazed over with the Liquid Mica, reduced by 50 per cent. water or more, using a soft camel's hair brush. If one coat does not answer, it can be done over. When the coat of Mica is dry, ornaments may be put on. If it appears too light a netting may be stenciled on.

"If other than white silver grounds are wanted, add distemper colors in small quantities to the Liquid Mica as furnished

by the manufacturers; mix well on the pallet and when mixed reduce by water ready for the brush. Then give one or two coatings to the ground. If the Liquid Mica is used colored the ground should be colored to match. A frieze ground done in olive and painted over with uncolored Liquid Mica made a nice gray colored, glossy surface. Another frieze ground done in wine-red was glazed in Mica colored with chrome-orange, and the result was a fine red gloss. On the red ground I stenciled some larger pieces for the ornament with Mica, to which I had added some light green, and then put on the ornament in distemper colors.

"The effects I obtained in this way are very pretty. Care should be taken not to add too much coloring to the Mica, as an excess of coloring might reduce the gloss. If you follow my directions in regard to the coloring of the ground, etc, the Mica itself requires very little color. Take brilliant colors in preference (pure aniline dyes are not desireable, as they fade too quick and some of them do not take well to the Mica).

"I positivley found this: Decorators can use Mica to as good effect as the wall paper manufacturers, and I only wonder that so few of my neighbors are up to it. The labor it takes to cover a ground with Mica is trifling, provided the right tools (soft brushes, etc.) are used and the man knows his trade. I used it for stencil work and lines. It looks exceedingly pretty on rough surfaces. I shall make further trials for wall and stuff patterns and report in time. This I can say now: For friezes, especially on ceilings, the Mica is an excellent material, and I recommend it to the close attention of the trade."

AMERICAN ARCHITECTURE—ITS PAST AND PROMISE.

The whole world of architects is struggling in the maze of tradition and complex modern demand, though it must be admitted that our land is marred by more and worse abortions than other modern countries; for the same Yankee instinct which begets the money for gigantic structures is nothing loth to extend its inventive aberrations into the architectural field.

It is from such ignorant practitioners, as well as from the more thoughtful but servile copyist, that we hope to be delivered by the new impulse the World's Fair buildings have given us, through the medium of genius allied to scholarly attainment. At last it is believed this handful who are working in the right direction may prevail, and mark an era in the evolution of our architecture which cannot be an invention or creation of one or several, but necessarily a slow growth of accumulative effort and study. All writers on the subject agree that, in this eclectic age, the best hope for modern styles is that each nation should develop from the historic style most in accord with its spirit and nature as evidenced by that period in its history when its architecture seems instinct with life and meaning. Whether, at our present stage of development, it is fair to determine any such point in America is a question, yet the present work of our best exponents would seem to be in harmony with the classic form of our only historic monuments, the old colonial structures, suggesting the pleasing probability of our being called upon to link the sentiment of the past with the glories of the future.—*Ione Estes Dodd in September Fetter's Southern.*

M. B. SWEZEY'S IMPROVED DUMB WAITER.

One of the convenient articles for every modern house is a dumb waiter, for the conveyance of articles from one story to another. While there are several inventions on the market, the improved dumb waiter manufactured by Mr. Swezey, at 120 Twentieth street, Chicago, is the best. It is recommended by leading architects, builders and house owners generally.

The sides and shelves of car are butternut and the back of pine, well coated with shellac. It has three shelves. The guides are made of hard maple, well filled with lard oil and screwed to sheathing. The hoisting rope is a one-half inch, running over double pulleys at top and bottom, with a balance weight and good rubber bumpers at top and bottom.

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The shaft can be made any size to suit the place. It should be sheathed on the inside straight and plumb from top to bottom. The box for weight should be 4x4 inches, running the height of shaft. It can be placed where most convenient, outside of sheathing. It is best to place it as near the center of the back as possible, or if that is not convenient, the weight can come down in the corner of shaft, where it can be seen at any time and easily reached. The door or opening to shaft should be two feet six inches above the floor. Dimensions of door, three feet six inches high, and two inches narrower than the inside of shaft.

This dumb waiter is highly recommended. Send for catalogue.

Reports from Athens, under date of June 1, state that excavators at Delphi have unearthed a colossal marble statue of Apollo. The statue, which is of the best antique school, is in excellent condition, except that the nose is broken.

A NEW illustrated catalogue has just been issued by the Jarden Brick Company, Philadelphia, from which a general idea can be formed of the immense resources of its brick manufacturing plant as well as the many varieties of brick embraced in its productions. The catalogue itself is a beautiful specimen of the art in printing, but without the truly artistic combinations expressed by the brick products of this concern it would differ in no way from average printing. These catalogues will be sent free to applicants.

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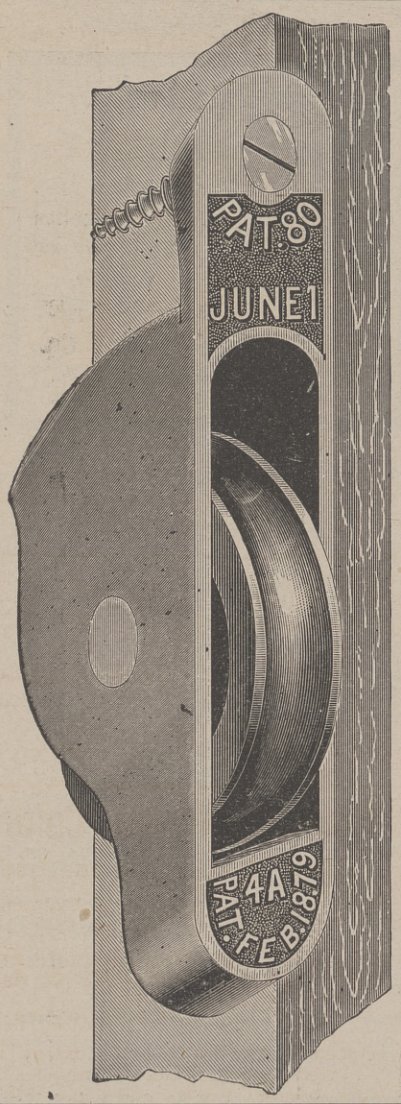

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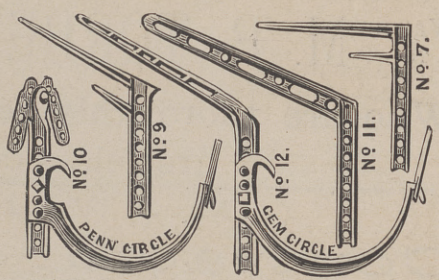

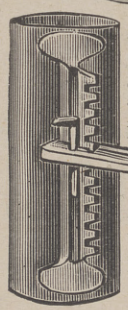

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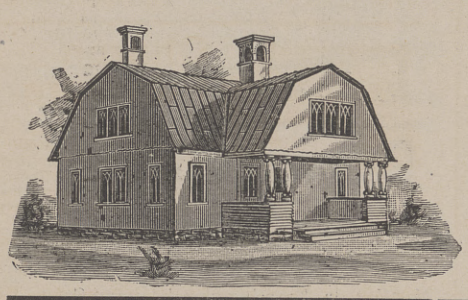

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E. T. Barnum.
Ludlow-Saylor Wire Co.
T. H. Brooks & Co.

ARCH. TERRA COTTA.
Stephens, Armstrong & Conkling.

ART GLASS.
G. C. Riordan.
A. H. Wallis.
Decorative Art Glass Co.

ARTISTS' SUPPLIES.
F. Weber & Co.

ASBETOS PAPERS.
Atlanta Roofing Co.

BALCONY RAILINGS.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow Saylor Wire Co.

BANK, OFFICE AND COUNTER RAILINGS.
Atlanta Wire and Iron Works.
J. E. Bolles & Co.
E. T. Barnum.
Cincinnati Manufacturing Co.
Dow Wire Works.
Ludlow Saylor Wire Co.

BANK, BAR AND STORE FIXTURES.
Atlanta Mfg. Co.

BEADINGS (Carved Classic).
Jas. N. Stout.

BENT GLASS.
Oriel Glass Bending Co.
M. A. Smith.

BICYCLES.
Overman Wheel Co.

BILLIARD AND POOL TABLES.
Brunswick Balke Collender Co.

BLACKBOARDS.
E. J. Johnson & Co.

BLINDS (Inside Sliding Folding and Venetian).
Willer Manufacturing Co.

BLINDS (Sliding and Patent).
Geo. Poppert.

BLINDS (Venetian).
C. R. Snyder.

BLUE PRINT PAPER.
L. M. Prince.

BOILERS.
Nason Mfg. Co.

BRASS GOODS.
Cincinnati Mfg. Co.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

BRASS AND IRON GOODS.
Cincinnati Mfg. Co.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

BRICK.
W. C. Bush & Co.

BRICK (Plain and Model, Red Buff, Gray, Brown, Black, Mottled and and Granite.
Hydraulic Press Brick Co.

BRICK (St. Louis Hydraulic Press).
C. R. Snyder.

BRICK CONTRACTOR.
John C. Blackburn.

BUILDERS.
Atlanta Building Co.

BUILDERS' MATERIAL.
Redfield Co.

BUILDING TRIMMINGS.
Roanoke Roofing and Metal Cornice Co.

BUILDING AND SHEATHING PAPERS.
Atlanta Roofing Co.

CABINET WORK.
Atlanta Mfg. Co.

CEMENT.
Lawrence Cement Co.
Thorn & Hunkins Co.
N. U. Walker Clay Mfg. Co.
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BRICK CONTRACTOR.
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Dayton American Register Co.

CHIMNEY TOPS.
N. U. Walker Clay Mfg. Co.

CHURCH BELLS.
Kaye & Co.

CHURCH AND SCHOOL FURNITURE.
A. H. Wallis.
Fischer-Leaf Co.
Louisville C. and S. Furn. Co.
Cincinnati C. and S. Furn. Co.
J. & R. Lamb.

CHURCH LIGHTING.
Globe Light and Heat Co.

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Van Wagoner & Williams Co.

COTTON YARNS.
Samson Cordage Works.

COPPER AND GALVANIZED IRON BUILDING TRIMMINGS.
J. S. Thorn Co.
Roanoke Roofing and Metal Cornice Co.

CORDAGE.
Samson Cordage Works.

CORNICES (Metal).
Roanoke Roof and Metal Co.

COPPER CORNICES.
Roanoke Roof and Metal Co.
I. N. Phillips.

CRESTING.
Pacific Iron Works.
Dow Wire Works.

CRIMPED CORRUGATED IRON WORK AND METAL BUILDINGS.
J. S. Thorn Co.

DECORATIVE WOOD WORK.
Koppe Bros & Steinechen.
C. S. Ransom & Co.
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Portland Screen Co.

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Lane Bros.

DOOR SPRINGS.
Van Wagoner & Williams & Co.

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F. Weber & Co.
L. M. Prince.

DRESSED MARBLE.
Geo. B. Sickles & Co.

DRESSED BUILDING STONE.
J. Hoadley & Son.

DUMB WAITER
F. S. Hutchinson & Co.
Sulzer Vogt Machine Co.

ELECTRICIANS.
J. W. Braid.
Gohagan & Duggers.

ELECTRICAL SUPPLIES.
J. W. Braid.
Gohagan & Duggers.
Gate City Electric Sup. and Const. Co.
Georgia Electric Light Co.

ELEVATORS.
E. W. Moon.
Columbia Elevator and Electric Co.
Hale Elevator Co.
Geo. W. Scott & Son.
M. J. O'Donnell & Co.
Sulzer-Vogt Machine Co.
Jas. H. Curran.
Atlanta Elevator Works.
Otis Bros & Co.
Warner Evevator Co.
Morse, Williams & Co.
Jas. Boyd.
Kimball Bros.
Maynard, J. Q.

ELEVATOR ENCLOSURES.
Cincinnati Mfg. Co.
Dow Wire Works.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow Saylor Wire Co.
Atlanta Wire and Iron Works.

FENCE, WIRE.
Cincinnati Mfg. Co.
J. E. Bolles & Co
E. T. Barnum.
Ludlow-Saylor Wire Co.
Hartman Mfg. Co.
Atlanta Wire and Iron Works.

FENCING, IRON AND STEEL.
Atlanta Roofing Co.
J. E. Bolles & Co.
E. T. Barnum.
Hartman Manufacturing Co.
Ludlow-Saylor Wire Co.
Dow Wire Works.

FIRE CLAY AND BRICK.
N. U. Walker Clay Mfg. Co.
C. R. Snyder.

FIRE PLACE SUPPLIES.
Jardin Brick Co.

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Fisher Leaf Co.

FIRE BRICK AND TILE.
N. U. Walker Clay Mfg. Co.
H. Stevens Sons.

FIRE ESCAPES,
J. E. Bolles & Co.
E. T. Barnum.
Ludlow Saylor Wire Co.

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Parker-Russell Mining and Mfg Co.

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N. U. Walker Clay Mfg. Co.

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Willer Manufacturing Co.

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Koppe Bros. & Steinechen.

GALVANIZED IRON CORNICES.
Roanoke Roofing and Metal Co.
I. N. Phillips.

GAS FIXTURES.
Hunnicutt & Bellingrath.

GAS MACHINES.
Tirrill's Gas Mach. Co.

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Potts Bros.
Sutphen & Myer.
M. A. Smith.
G. C. Riordan.
E. F. Kerwin.
L. Grosse Art Glass Co.
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Bissell & Co.
Edwin A. Jackson & Bros.
Hunnicutt & Bellingrath.

GRATE SETTER.
John C. Blackburn.

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Blake & Williams.
Nason Mfg. Co.
Pease, J. F., Furnace Co.
Herendeen Mfg. Co.

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Willer Manufacturing Co.

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A. H. Wallis.

INTERIOR HARDWOOD.
Willer Manufacturing Co.

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Atlanta Manufacturing Co.

IRON BALCONIES AND RAILINGS.
Pacific Iron Works.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

IRON COLUMNS.
Cahill Iron Works.
Barnum, E. T.

IRON WORK (Architectural and Ornamental).
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

LAUNDRY TUBS.
C. F. Richardson.

LAWN VASES.
N. U. Walker Clay Mfg. Co.
Barnum, E. T.

LIGHTING APPARATUS.
Hickey, A. C.
Globe Light and Heat Co.

LIME.
C. R. Snyder.
N. U. Walker Clay Co.
Thorn & Hunkins Co.

LUMBER.
Atlanta Lumber Co.

MANTELS.
Jardin Brick Co.
Atlanta Manufacturing Co.
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East Tennesse Marble and Stone Co.
Kennesaw Marble Co.
Georgia Marble Co.
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Buckeye Marble and Stone Co.
G. B. Sickles & Co.

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Hayward & Hutchinson.
Schoone, Chas. I.

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F. Weber & Co.

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Wm. Reith.

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J. E. Bolles & Co.
Central Expanded Metal Co

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H. Stevens Sons.

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United States Mineral Wool Co.

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Sam'l H. French & Co.

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Lamb, J & R.
C. I. Schoone.

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Cincinnati Mfg. Co.
J. E. Bolles & Co.
E. T. Barnum.
Atlanta Wire and Iron Works.
Ludlow-Saylor Wire Co.

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George Merz Sons.

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Sam'l H. French & Co.
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S. P. Wetherill Co.
Rinald Bros.
Seim, Henry & Co.
Southern Paint and Roofing Co.

PAINT (Fire proof).
Atlanta Roofing Co.

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Alfred H. Prall.
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W. C. Bush & Co.

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J. A. Graham & Son.

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C. R. Snyder.

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Thos. Gibson Co.
Vandiver, M. C.

PLUMBERS' SUPPLIES.
The Thos Gibson Co.

PLUMBING GOODS.
Hunnicutt & Bellingrath.
F. E. Cudell.
Haines, Jones & Cadbury.
Kilbourne Jacobs Mfg. Co.

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T. H. Brooks & Co.

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I. P. Frink.
Bailey Reflector Co.

ROOF CRESTING.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

ROOFING MATERIALS.
Hunnicutt & Bellingrath.
N. & G. Taylor.
Granite Roofing Co.
Thorn Shingle and Ornament Co.

ROOFING PLATE (Tin).
Merchant & Co.
N. & G. Taylor.
Thorn Shingle and Ornament Co.
Southern Paint and Roofing Co.

ROOFING (Slate).
W. R. Jones & Co.
Pritchard, R. B. (Red).
I. N. Phillips.
Peters, E. D. & Co.
Slatington Bangor Slate Syndicate.
E. J. Johnson & Co.
Jas. D. Emack.
David McKenna.

ROOFING SLATE.
E. J. Johnson & Co.
W. W. Jones & Co.

ROOFING (Iron).
Roanoke Roofing and Metal Cornice Co.
Atlanta Roofing Co.
Porter Iron Rofing and Corrugating Co.
N. A. Haldeman & Co.

ROOFING TILE.
Scott White.
Burns, Russell & Co.

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N. U. Walker Clay Mfg. Co.

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Brunswick Balke Collender Co.

SASH CORD.
Samson Cordage Works.

SASH PULLEYS.
C. Sidney Norris.

SASH BALANCES.
Gardner Sash Balance Co.

SCREEN DOORS AND WINDOWS.
Willer Manufacturing Co.

SEWER AND RAILROAD PIPE.
H. Stevens Sons.

SEWER PIPE.
N. U Walker Clay Mfg. Co.

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Thorn Shingle and Ornament Co.
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I. N. Phillips.

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W. W. Jones & Co.

SLATE ROOFERS.
W. R. Jones & Co.

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Willer Manufacturing Co.
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Reister & Frohe.
G. C. Riordan.
Wm. Reith.
Gate City Art Glass Co.
Southern Art Glass Co.
J. & R. Lamb.

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Dexter Bros.

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Hartman Mfg. Co.

STONE.
Buckeye Marble and Stone Co.
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Barnum, E. T.

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Nason Mfg. Co.

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Atlanta Mantel Co.
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Jacob Mark.

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I. N. Phillips.

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Hartman Mfg. Co.

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Cutler Mfg. Co.

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Willer Manufacturing Co.

VENETIAN RED.
S. P. Wetherill Co.

VENTILATOR CORD.
Samson Cordage Works.

VENTILATING GRATE.
J. E. Bolles & Co.
Edward A. Jackson & Bros.

VAULT AND SIDEWALK LIGHTS.
J. E. Bolles & Co.
Ludlow-Saylor Wire Co.
E. T. Barnum.
J. C. French & Sons.
Jacob Mark.
T. H. Brooks & Co.

WAINSCOTING.
Fischer Leaf Co.
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Peck-Smead Co.

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Barnum, E. T.
Ludlow-Saylor Wire Co.
T. W. Jones.

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I. N. Phillips.

WINDOW GUARDS.
Cincinnati Mfg. Co.
Dow Wire Works.
J. E. Bolles & Co.
Ludlow-Saylor Wire Co.
Atlanta Wire Works.
Louisville Wire Works.
E. T. Barnum.

WINDOW LINES.
Samson Cordage Works.

WINDOW SCREENS AND SCREEN DOORS.
Willer Manufacturing Co.

WINDOW SHUTTERS AND AWNINGS.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow-Saylor Wire Co.

WIRE WORKS.
Barnum, E. T.
J. E. Bolles & Co.
Cincinnati Mfg. Co.
Atlanta Wire Works.
Louisville Wire Works.

WIRE CLOTH.
Barnum, E. T.
Cincinnati Mfg. Co.
Clinton Wire Cloth Company.

WIRE MATS.
Hartman Mfg. Co.

WIRE AND BRASS.
Cincinnati Mfg. Co.
J. E. Bolles & Co.
E. T. Barnum.
Ludlow Saylor Wire Co.
Clinton Wire Cloth Co.

WIRE WORK AND WEATHER VANES.
J. E. Bolles & Co.
Ludlow-Saylor Wire Co.
E. T. Barnum.

WOOD MANTELS.
Atlanta Mantel Co.

WOOD WORK (Interior Hardwood).
Willer Manufacturing Co.

WOOD WORK (Ornamental and Decorative)
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