

# THE SOUTHERN ARCHITECT.

ARCHITECTS' BUILDERS' AND HARDWARE JOURNAL

VOL. IV. No. 12.

ATLANTA, GA., OCTOBER, 1893.

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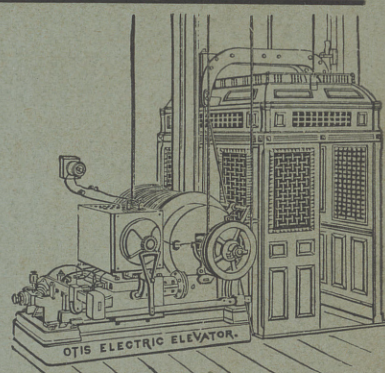
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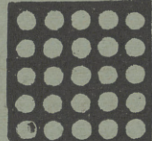
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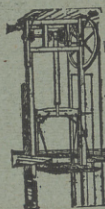
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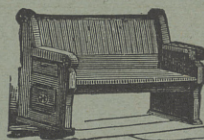
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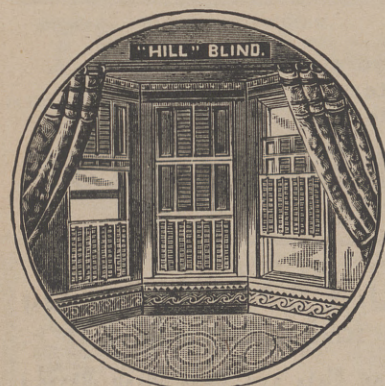
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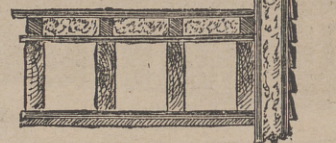
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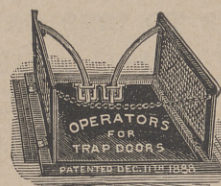
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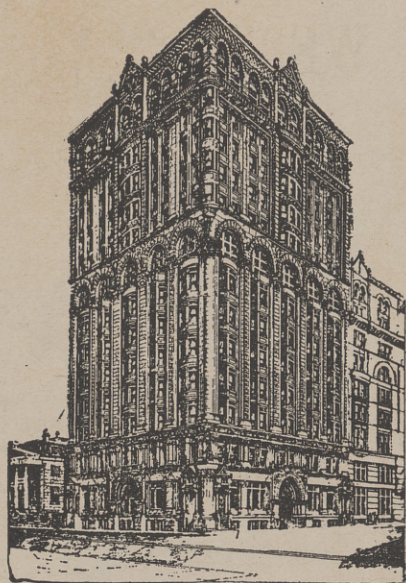
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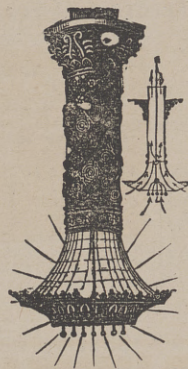
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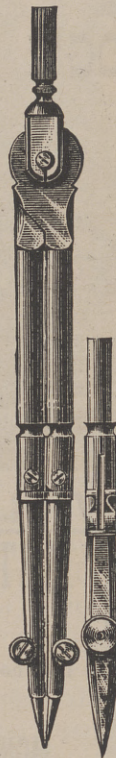
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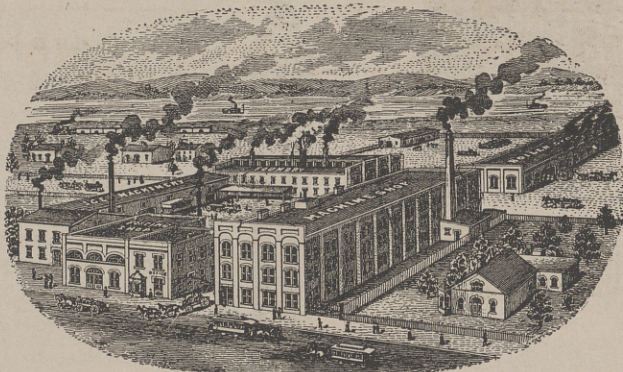


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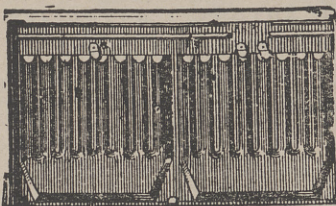


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# THE SOUTHERN ARCHITECT.

## ARCHITECTS' BUILDERS' AND HARDWARE JOURNAL.

VOL. IV.

ATLANTA, GEORGIA, OCTOBER, 1893.

No. 12.

THE papers read recently at Chicago, in the World's Congress of Architects, are of general interest, many of them being by authors of international reputation, and all of them on subjects of great importance to the profession. Numbers of these excellent productions, however, are quite lengthy and full of technicalities and minute scientific demonstrations, more suitable for use in text-books and formal treatises. To condense these, to extract from them their practical essence and fit them for the necessarily limited space in our columns, we have determined to reproduce their leading thoughts and deductions in the form of a clear synopsis. We think that their most valuable essence will then be preserved and our readers be benefited by their perusal. An interesting synopsis of a number of these international papers will be found in this number of THE SOUTHERN ARCHITECT, and a selection of others will be given in succeeding issues of our journal.

A COMMUNICATION on the merits of Southern yellow pine, from the pen of Mr. M. F. Amorous, General Manager of the Atlanta Lumber Company, will be found to be a valuable article to architects and builders, and maintains successfully the undeniably superior qualities of our yellow pine over all other pines in the important essential of combustibility.

The communication is in reply to an article in one of our exchanges, in which the writer takes occasion to speak slightly of Southern yellow pine, charging that it is easier to burn than white pine, and that, therefore, the latter is to be recommended in preference to the former, for use in the construction of buildings. All experienced builders know the statement to be erroneous, and this fact is very clearly demonstrated by Mr. Amorous. The fact that so well known an expert as Mr. Edward Atkinson, and all fire insurance experts, recommend Georgia yellow pine as the best wood to be used in the construction of buildings is authority that cannot be successfully challenged, and the experience of all who are entitled to speak upon the subject, from practical knowledge, relieves the subject of all doubt, and proves the attack upon our yellow pine unwarrantable and presumably the effect of either ignorance or vindictive rivalry. We thank Mr. Amorous for his timely letter.

ELSEWHERE in this issue of THE SOUTHERN ARCHITECT we reproduce an article on "Immigration to the South," taken from a recent number of the *Southern Lumberman*. In our opinion it very aptly describes the situation. We have in our immediate vicinity evidences of the utter failure of booming tactics. Many promising young towns which started out under a high pressure of emigration—including Northern and foreign as well as from among our own people have been comparatively wrecked. The emigrant expected or was led to ex-

pect too much; the glittering prospects held out failed to materialize, and discontent resulted. Many of this class went away and worked much harm among those who might otherwise have come here of their own accord and been content to grow moderately with their surroundings and gradually acquire a competence, as all intelligent and industrious settlers in this Southern country—be they mechanics, farmers, merchants or professional men—have done and will do. Bonuses, exemption from taxes, guarantees of taking locally a certain percentage of the stock of a company proposing to locate, are all bait which the citizen who really has the interest of his people at heart will fight shy of. Manufacturing institutions, farmers or any class who locate among us purely because we give them a bonus—no matter in what shape—are not the class of citizens we want. One of the best examples we can give on the subject is gathered right here in Atlanta, and the situation is explained in the following extract, which we make from a letter recently sent to a firm who had inquired how much bonus Atlanta would raise for them to locate their plant in that city: "With regard to the scheme outlined by you, Atlanta has never yet felt the need of using extraordinary effort to secure capitalists to invest or business or manufacturing firms to locate here. In this regard she has been peculiarly conservative, and as a consequence we have, I think I can safely say, the least discontented set of business men and manufacturers extant. To the best of my knowledge Atlanta has never yet offered extra or special inducements, nor has she ever donated even a site for a proposed enterprise, and yet we have increased our population by over a hundred per cent. during the past ten years, and our mercantile business has increased in like ratio, while the number, scope and product of our various manufactories have very greatly exceeded these figures. Not a week passes without some new enterprise being established (not 'projected') here, and all are peculiarly prosperous. Atlanta's growth since 1865 has been uniform and steady, and at the same time without the slightest indications toward 'booming.'"

It frequently happens that by showing too much eagerness to gain recruits you will scare off volunteers. But little judgment is shown in selecting the classes to which to present claims for prospective settlement. If there are already six broom factories, and they are enabled to amply supply all the demands in that line, it will work a detriment to your own broom makers as well as to the incomer to induce him to start up another. Effort should be devoted to securing such enterprises as would be likely to succeed. If your location is eligible for starting a tannery, a corset factory or a machine shop, lend your energies to secure some one who will represent these particular branches.

It is well to have your city or section well written up. Have attractive and truthful descriptive matter always in readiness to send to all *bona fide* inquirers, but do not follow the green goods man's methods and flood the country with your literature.



### THE SITUATION AND THE BUILDING INDUSTRY.

No industry is more susceptible to the influence of fluctuations in finance than the building industry and the general depression which we have been feeling, and from which all branches of trade have suffered, has manifested itself with peculiar force in the building interest. There is a great diversity of opinion as to the real causes of this financial flurry and the protracted business depression consequent upon it. Panics come periodically, and no country is exempt from them. Frequently they are unaccountable, and the result of imagination, and their causes and effects are charged to conditions that really have no existence, or their effects are magnified and exaggerated by ignorant fear, or are the result of combinations of political wire-pullers and of men who make it their business to cause excitement in order to profit by the fears and misfortunes of the people.

Be the causes of our business and financial troubles what they may—and no one can deny that they have brought great distress upon the country, and have been the means of precipitating a crisis almost without precedent in the financial and industrial history of the country—the fact remains, as our well-informed contemporary, the *Chicago Builder and Trader*, aptly puts it, that the situation is by no means as hopeless as the present ruling prices of commodities and the dull trade would seem to indicate. There are over 65,000,000 of people in this country who must be housed, fed and clothed, and many of them are in positions to indulge in luxuries. Some of them may be temporarily thrown out of employment, but the result of that will be that stocks on hand will the more speedily be reduced to quantities that will affect prices and bring about the employment of those who are idle. A great deal of encouragement is to be derived from the fact that staple products are now going out of the country in large quantities and have already brought about a return movement of the gold which Europe has acquired from us during the last two years. It is almost a certainty that the partial failure of the crops in Europe, the low prices of breadstuffs here, and the plethora of unemployed capital abroad will soon result in a trade balance favorable to the United States.

A favorable realization has ceased to be a probability; it is already a fact, for which we cannot be too thankful. Some of the factors operating in the interests of better times and actively at work producing them are already stated by the *Northwestern Lumberman*, as follows: "The vacation season is over; the fall is at hand. There must be a preparation for winter. Frosty nights have a remarkably stimulating influence on business. The people will not sit down and let the period of vigorous activity pass, and plunge into the inclement season like a multitude of dolts. That is not the way of the American people. As soon as Congress shall settle the silver question, one way or the other, the business men of the country will put the wheels of progress again in motion. Inaction has been prolonged, and the new start will be more impulsive on that account. Production has been greatly restricted by the depression of industries, and a relieved money market will stimulate the movement of goods and commodities."

No section of the country is responding as readily and successfully to the inevitable healthy reaction now manifesting itself as the South. The record she has made for herself during these trying times is brilliant and unparalleled. She has proven herself to be sound to the core. Her staying qualities, her mastery over the situation, her conservative and manly spirit, her courage and faith, the strength and inexhaustibility of her resources,

have excited the admiration of the entire country, and her reward for all of this is as sure as it will be deserved.

None of her interests will show the beneficent effects of the reaction now setting in better than her building industry. Capital from the South will pour in with a volume heretofore unprecedented, because capital naturally seeks the safest place, and the most inviting and prosperous field. Our own people feel the thrill of enthusiastic enterprise, and will redouble their energies and increase their means for securing material prosperity. These energies find their most profitable sphere in building operations, the improvement of cities, towns and villages, the creation of new industrial enterprises and the extension of those already existing. This means work for the architect, the contractor and builder, the mechanic, the day-laborer—it means a prosperity for all the building trades. It means a new and a glorious era for the South and her indomitable people!

### OUR SOUTHERN STAPLE.

THE New York *Sun* of recent date has an admirable editorial on the cotton interest of the South and the prosperous future before the Cotton States. The article has special value at this time, in view of the fact that the successful escape from the financial complications which have distressed the country during the summer will be largely due to the relief afforded by this year's notable cotton crop, the proceeds of which will restore the normal status of the American money market and relieve the distress from which every industry and vocation in this country has been seriously suffering for months. The article referred to is full of valuable statistical information and official data showing the extraordinary importance of the Southern cotton crop and the constantly increasing power of this indispensable product.

The United States now furnishes seventy-five per cent. of the commercial supply, and the demand for American cotton is still increasing at the rate of four per cent. per annum, although there has been no expansion of the cotton acreage recently.

Our country has little to fear from the competition of the few foreign countries in which cotton is raised. In most of them the conditions are not very favorable for the successful raising of large crops, and in some of them its culture has decreased in quantity and quality, and others have abandoned the cultivation of cotton as an export staple altogether.

The consumption of American cotton has continued to increase as rapidly since 1889-90 as in the preceding ten years, and the world's annual requirements of the product of Southern fields now equal 2,000,000 tons, or 8,000,000 commercial bales per annum, and with average yields is the equivalent to 22,000,000 acres, being much more than we have ever had under the staple, and some 5,000,000 in excess of the area now employed.

The glut in the world's markets following the phenomenal crops of 1890 and 1891 has disappeared, and supply and demand have assumed more natural proportions, giving the cotton producers of the South the assurance of a better market for the immediate future. A survey of the field, based upon authentic data, manifests the suggestive facts that during the ten years ending with 1890, the area under cotton increased 4,200,000 acres. More than 1,000,000 acres being wheat land converted to this culture, it is seen that the new land devoted to cotton growing was but little in excess of 3,000,000 acres, or about 300,000 acres per annum. The mills of the United States now work up yearly twenty pounds



of cotton for each unit of the domestic population, and the annual addition thereto of 1,500,000 necessitates an annual addition to the area under cotton—to meet only the added domestic requirements—of more than 170,000 acres. This is very much more than the net annual increase of the last thirteen years, while in the last three years the area has diminished more than 3,000,000 acres, that much of the cotton acreage having, since 1891, been diverted to corn growing. And still the corn area of the nation as a whole has, since 1889, shrunk more than 5,000,000 acres, and the cotton area is, with average acreage yields, also deficient 5,000,000 acres.

If the populations of European lineage continue to increase as during the last thirteen years, and continue to consume cotton at the same rate per capita; and if we furnish no more than seventy-two per cent. of the commercial supply, it will be necessary to restore at once to the cotton fields the 3,000,000 acres diverted to corn culture; to convert 2,000,000 acres more of Southern grain fields into cotton bearing lands, and to add yearly more than 300,000 new acres to the area under cotton.

THE South this year, as it did twenty years ago under almost similar circumstances, will come to the rescue of the country, and restore its financially diseased body to its usual healthy and prosperous condition. The South will do this most desirable thing through the means of her magnificent cotton crop. This has been the sheet anchor of our hope throughout all the gloom and danger of the unprecedented financial and commercial storm which has swept the country from the Atlantic to the Pacific, from Canada to the Gulf, like a hurricane. However, the worst is over; the light of a brighter day is breaking; the clouds are rolling away; confidence is being restored; a healthier pulse beats in the veins of commerce; the debris of the storm is being cleared away, and the general revival of business, which is already being felt in all parts of the country—most notably so in the great business centers—will soon see us all “happy on the way” to the heights of success and prosperity. The way to our Land of Promise again lies through the cotton fields of the South. The snowy fleece will unlock the treasures of the world, and a flood of gold amounting to over two hundred millions of dollars will soon begin to flow into our country and fill every channel of trade and industry with its tremendous power and vitalizing energy.

Let us give thanks to God for the harvests, and let the country praise the South and her golden staple.

OVER two hundred millions of Europe's accumulated gold shipped back to us in exchange for the six or seven millions of bales of cotton raised by the South will easily restore the balance of trade, relieve the financial stringency which has so seriously oppressed us, and set going to their utmost capacity every mill, factory and workshop in the country.

It will take fifty millions of dollars to move this year's cotton crop, but, in spite of all drawbacks, the depression in trade and industrial circles, the closeness of the money-market, this necessary sum, enormous as it is, will be forthcoming as needed, nay, is now ready to do the work.

Much of the financial flurry which has recently afflicted the country is traceable to political and to Wall street chicanery, and to doubts and fear which really had no reasonable and substantial basis. But confidence and a better feeling in all quarters is being rapidly restored, and the largest factor in this renaissance, is the fact that our food crops are plentiful, and that the cotton crop of the South alone, will restore the equilibrium of the country, and close the mouths of rampant “calamity howlers.”

THE architects of the South do not take the interest they should in the literature of their noble profession. We rarely see articles from their pens in the columns of journals devoted to architecture and the building interests, and their contributions to the literature of the day, in the form of text-books or essays pertaining to the practical as well as the esthetical elements of the profession, are conspicuous by their absence. This is to be regretted. There are many members of the profession who are not only well equipped in the principles and the practice of the profession, but who are also gifted with literary talent of a high order, and scholarly attainments second to none of their professional brethren in the North or in Europe. Upon these rests the responsibility of placing the South upon the high plane its importance and the prosperity of its architectural interests entitle it to; to these gentlemen we look for valuable contributions to the permanent text literature of the profession, and to articles which shall compete, in interest and literary value, with those with which the Northern press is so liberally supplied. We trust our suggestion will meet with the approbation of the profession in the South.

## TWO VIEWS—WHICH?

ON the one hand it is claimed by the fire extinguishing experts that English and in fact European apparatus for fire extinguishment are obsolete and old fashioned as compared with the modern inventions and general excellence of our American outfits and brigades, as evidenced by the recent walk-over which our crack Kansas City team had in competition with the teams of the United Kingdom at the competitive fire drill in England. On the other, it is learned that over there they do not bother so much about putting out fires, for they do not have many, and each is generally isolated, and even if it burns itself out in the building where it started, there is not much danger of its spreading to great proportions. Hence they can afford to be satisfied with rather inferior machines and much smaller fire departments, sustained at a very much less annual cost than ours. Here we do the reverse. We spend enormous sums annually for insurance and in keeping up finely disciplined fire departments, equipped with all the very latest improved engines and apparatus. Now which is the best and most economical in the long run? We take desperate chances on fires and their extinguishment and save money in construction. It is not merely the frame structures that are dangerous, as the Boston, Chicago, Milwaukee and other great conflagrations easily show. A large part of our brick buildings are “Jerry built,” and are mere shells concealing a mass of timber adjusted to create a most satisfactory bonfire. Of the two systems we must admit that we rather incline to the English, and it is only a matter of time how soon this view will be generally recognized. In fact, for the past two decades we have partially learned the lesson, and as the various modern stone, brick and tile structures are brought to the front, there is cheaper and better material, more scientific construction and more honest building resulting in greatly lessening the percentage of fire traps over the entire country.

THE ARCHITECT ventures to suggest to the President and Directors of the Augusta Exposition, the importance of inviting the architects of the country to exhibit at the Exposition specimens of their models and plans of buildings of every description. It will be an attractive and useful department, and increase the interest in the Exposition.





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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.



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 B. Feldman.*—Simons & Holmes, architects, Charleston, S. C.

*Sketch of church for West End, Ga.*—C. Walter Smith, architect, Atlanta, Ga.

*Residence for P. A. Waring.*—A. S. Eichberg, architect, Savannah, Ga.

*Design for South Carolina Industrial and Winthrop Normal College.*—Bruce & Morgan, architects, Atlanta, Ga.

### IMMIGRATION TO THE SOUTH.

WE have before us an article entirely after our own heart, and it comes to us from one of our most valued exchanges, the *Southern Lumberman*, and we take pleasure in giving the readers of THE SOUTHERN ARCHITECT the benefit of it.

"A number of our Southern exchanges are again agitating the subject of 'the best methods of attracting immigration to the Southern States.' But this is no new thing. They have been agitating that question ever since the Civil War. One of them informs its readers that 'the crying need of the South is immigration,' in order 'to get cash for the sale of surplus land with which to farm under a more rational plan.' These various methods of encouraging the tide of immigration to flow this way are advocated. One thinks it could be accomplished by abundantly advertising the Southern resources; another that hosteleries for the temporary accommodation of the immigrant at a nominal price should be provided. But, as we said above, all these schemes and all this agitation have been advanced time and again and

continuously, ever since the war between the States. Yet, we very much question if it has had much influence on the immigration tide southward. Those newcomers from other sections and other lands who have settled among us have been induced to come largely from other considerations. We incline to the opinion that not many people are induced to move into a country new to them simply upon the invitation of the original settlers or the native population. Immigrants, as a rule, move into new sections more where they are *not* invited and where they are *not* wanted than into those sections which appear too eager to have them move in. The exodus from the East to the Pacific coast in 1849 was not because of invitations from native Californians or because California needed immigrants, but because gold was discovered there, and it was believed by the immigrant to be to his interest to emigrate to California. So of the gold hunting expedition to Australia and the vast emigration to Africa in quest of gold and diamonds.

"We sincerely believe that if the Southern States cared less for an increase of population by immigration—indulged less urgent, persuasive and plaintive appeals to the immigrant to come—that it would get more immigration. But of this we are very certain, if the native population of the Southern States encourage and build up manufacturing enterprises and small industries, and offer employment at living wages to desirable workers from the Northern States or from Canada, they will have no trouble in getting as many as they can find work for. There are skilled laborers and steady workers of a desirable class in the more crowded quarters of the globe who would readily move into the South, if guaranteed a job and the means of supporting their families when they get there. Immigrants with a little capital to buy homes and build factories are not so easy to be secured. Yet these may be induced to come by the offer of low-price lands and liberal transportation facilities, and these would come South of their own accord more freely if appeals to them to come were less urgent and eager. The fervor of the invitation is so overdone that they are suspicious. If the South was a little less anxious now, and making less noise about immigration, the desirable immigrant might suspect that the South was having a good thing in the possession of its lands, and was keeping shady about it to prevent being overcrowded.

"But, we repeat that we are coming to believe that the best argument to induce immigration and to attract immigrants is a discreet reticence on the subject of immigration. Possibly, if we let up a while on the monotonous refrain of 'the South's crying need,' the devoutly wished for immigrant may suspect that we don't want him, and shrewdly surmise that the reason we don't want him is because we have too good a thing in the possession of our rich landed inheritance, and don't care to let it be noised about too much; and the moment the desirable immigrant suspects that he will begin to crowd us, as we crowded the native Californian in 1849, and as the "Heathen Chinee" have been crowding them from another direction since."

### ÉCOLE DES BEAUX ARTS.

At a reception tendered by the San Francisco Chapter of the American Institute of Architects to M. Goustiaux, who was delegated by the city of Paris as its representative at the World's Columbian Exposition, he described the requirements and examinations necessary to enter the *École des Beaux Arts* and the difficulties to be overcome by the students before graduating, when they are entitled to a diploma, issued by the government, and the option of entering the public service.









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Sketch of Church for West End, Ga.





VOL. IV. THE SOUTHERN ARCHITECT. No. 12.

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Residence for B. Feldman, Charleston, S. C.









*W. S. Kiehnberg,  
Architect.*

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*Residence of Mr. P. A. Waring,  
Savannah, Ga.*







The requirements are severe, and a bright young man is doing well if he secures his diploma at the end of six or seven years. About twelve each year reach their goal, seldom at less than thirty years of age. Should they choose to enter the public service, they first take the position of *conducteur* of work, are afterwards promoted to that of *sub-inspecteur*, then to be *inspecteur*, and finally, at the age of forty to forty-five, to the position of architect, and are then given charge of such repair work as may have to be done.

For important works there is a corps of ten to fifteen architects under the direction of the *Inspecteur General* of Paris.

In competitions for public improvements the committee of awards is composed of a certain number chosen by the competitors themselves, a representation from the *Société Centrale* (the principal architectural association of France) and a special commission of prominent architects. The method employed to arrive at a decision is first to reject all designs that do not conform to the programme, then to reject those that are seriously defective in any important particular, and continue this process of elimination till the number of designs that remain are reduced to the number of prizes offered—and these are then classified in their order of merit; and to the credit of the committee, M. Goustiaux states that their decision is almost universally acknowledged among the competitors as being just.

In regard to architectural societies there are three—the most important being the *Société Centrale*, with branches in other departments of the country. This society is very exclusive and very difficult to enter. No contractor, nor any one who has ever been a contractor, is eligible; a certain standard of work must have been executed by the applicant. The customs of the profession as determined by this society are taken as precedents by the courts, and judges frequently refer to the society for information as to the customs, and govern their decisions according thereto; the schedule of material and prices fixed by this society are authoritative.

There is a smaller society consisting of *architects diplomé*, and a third society to which architects and builders are admitted indiscriminately.

Important public works over 500,000 francs in value are usually decided by competition, the competition being confined to Frenchmen.

#### 1894—ANTWERP.

Long before we get through with the greatest show the world has ever seen, now being held in Chicago, we are called upon to chronicle the advent, in 1894, of the Antwerp International Exhibition, which is to be held in Antwerp, Belgium, beginning May 5, and continuing six months. It is under the high patronage of his Majesty the King of the Belgians, and the honorary president is his Royal Highness, the Count of Flanders.

The main building of this exhibition will cover about 120,000 square yards of ground, and will be constructed of iron and steel, roofed with zinc.

In the Halls of Machinery and Electricity a charge will be made for space at the rate of sixty francs per square meter, this charge being reduced one half in the case of machines supplied with power and working at least five hours daily. Among other things the Exhibition will boast a literal castle in the air. A company has been formed to carry out the plan of M. Tobianski, an ingenious engineer, who has designed a sort of raft, having an area of about one hundred and eighty square feet, and made of bamboo canes and steel and aluminum piping. Upon this is built a most luxuriously fitted-up restaurant. The raft is held floating in the air five hundred feet above the ground by a number of balloons,

and an arrangement of an anchoring by means of cables will (so says M. Tobianski) prevent the restaurant from rocking even in the strongest wind. Two small captive balloons, each holding from eight to ten persons, will serve like lifts to keep up communication between the aerial restaurant and the earth. There is a regular system for supplying gas to the balloons, and at night the exhibition will be lit up by an immense electric light projected from the raft. The whole thing can be lowered to the ground within ten minutes by steam windlasses specially constructed.

HERETOFORE eight World's Fairs have been held, but the one going on now promises to surpass all in magnitude, number of exhibitors, and marvels of man's handiwork. The first international exposition was held in London in 1851, and was patronized by 17,000 exhibitors, 6,039,195 visitors, and occupied an area of twenty-one acres. This was followed by another in Paris in 1855, and again in London in 1862, both of about the same proportion as the first. In 1867 Paris held a fair that accommodated over 50,000 exhibitors, and passed more than 10,000,000 visitors through its gates; it covered an area of thirty-seven acres. None of the three great expositions held afterwards in 1873, 1876 and 1878, in Vienna, Philadelphia and Paris, respectively, reached far beyond the Paris Exposition of 1867 except in area. The fairs of 1876 and 1878 occupied each an area of sixty acres, and upwards of 16,000,000 visitors attended the Centennial Exposition. The records of the last World's Fair held in Paris in 1889 show that it was patronized by 55,000 exhibitors, 28,149,353 visitors, and extended over an area of 200 acres. Hereafter World's Fair lists will include "1893—Chicago—100,000 exhibitors—40,000,000 visitors; area in acres, 240."

And along with the notification of "Antwerp 1894," comes the rather depressing news that all those models of architecture at Jackson Park, Chicago, are to be offered for sale to the highest bidder as soon as possible after the first day of November.

Various estimates have been made on the amount that will probably be received from the salvage of the great exposition. The first estimate was \$3,000,000, but this figure is considered to be away above any sum that will be realized. A million dollars is now conceded to be a more reliable estimate of the salvage receipts. Strange as it may seem, the most expensive buildings will probably make the poorest showing at the sale. Manufactures Hall, for instance, cost about \$1,600,000, the great steel arches alone representing an outlay of nearly \$500,000. Engineers say that if the Exposition company finds a man who will take these arches down and remove them from the ground it will be in great luck. The magnitude of the undertaking will be realized when it is stated that each arch contains twenty carloads of steel, all the pieces being firmly riveted together. The salvage in Administration Building will also be very small. Mines Building, on the contrary, is regarded as a more favorable prospect. The steel arches are much lighter than those of almost any other on the ground, and could be readily taken down and set up again for a large workshop or factory. They would also be available for a depot of moderate size.

One phase in this connection is thus referred to by the *Stove-Hardware Reporter*: "The amount of builders' hardware that has gone into the construction of the White City is nothing less than tremendous. The best of everything was used and the cost of this one item alone will run up into the millions. This was probably a wise expenditure, considering that the Fair is a national exhibition, but what is to become of all the fittings after the gates are closed? The buildings will have to be torn down and some disposition must be made of the hardware. It can't be passed off as junk, since most of it will be as good as new, and it can't be sold to the trade for the trade doesn't care to buy in that way. It may go back to the manufacturers, be brightened up and sold over again, but still this is hardly probable for a good many reasons. They might pass off as relics, and I don't know but this is the best way out of the difficulty."





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Robert Stead, Washington, D. C.

## For two years.

Theophilus P. Chandler, Jr., Phila., Pa.  
George W. Rapp, Cincinnati, Ohio.  
William G. Preston, Boston, Mass.  
\*W. W. Clay, Chicago, Ill.

Joseph P. Baumann, Knoxville, Tenn.  
A. F. Rossenheim, St. Louis, Mo.  
R. W. Gibson, New York, N. Y.  
C. H. Johnson, St. Paul, Minn.

## For one year.

\*Richard M. Hunt, New York, N. Y.  
E. M. Wheelwright, Boston, Mass.  
\*James W. McLaughlin, Cincinnati, O.  
William S. Eames, St. Louis, Mo.

C. F. McKinn, New York, N. Y.  
William Worth Carlin, Buffalo, N. Y.  
S. S. Beman, Chicago, Ill.  
William C. Smith, Nashville, Tenn.

\*These, with President, Secretary and Treasurer *ex officio*, form Executive Committee.

## STANDING COMMITTEES FOR 1894.

*Committee on Foreign Correspondence.*—Richard M. Hunt, Chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKinn, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

*Committee on Education.*—Henry Van Brunt, Chairman, Kansas City, Mo.;

Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

*Committee on Uniform Contract.*—Samuel A. Treat, Chairman, Chicago, Ill.;

William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

*Committee upon consecration of Public Buildings.*—Richard Upjohn, Chair-

man, New York, N. Y.; Presidents of the Several Chapters.

*Committee on Competition Code.*—Charles E. Illsley, Chairman, St. Louis, Mo.;

J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

## INTERNATIONAL CONGRESS OF ARCHITECTS.

## SYNOPSIS OF THE IMPORTANT PAPERS READ AT CHICAGO.

## FIREPROOF CONSTRUCTION AND THE PRACTICE OF AMERICAN ARCHITECTS, by P. B. Wight.

The art of architecture in America has been raised to such a high plane that nothing should be omitted to make structures that are worthy to be seen for all time sufficiently durable to last for all time. The fireproof building in which wood is discarded for all constructive purposes can still be attacked by the ravages of fire. It is fully as important that it should resist fire as that its foundation should resist settlement, its piers refuse to be crushed, or its floors to sag. Mr. Wight said that he first suggested the essential elements of a fireproof structure from the architect's standpoint in an address before the American Institute of Architects in 1871. These are, that all constructive materials should be incombustible, that iron and steel should be protected from such a degree of heat as would weaken them, and that combustible material not used for construction should be discarded as much as possible. None of these requirements

are inconsistent with good architecture, and the same conditions exist as before.

Prior to 1870 the so-called fireproofing of buildings was of little practical value. The greatest advance was made from 1880 to 1890, and the West took the lead. The late George H. Johnson was the first to patent fireproofing inventions of any value in this country. About the same time Leonard H. Beckwith, a New Yorker, introduced the French system of interior fireproof construction, with improvements made by himself. He was the first practical expert in fireproofing in America, and used burned clay hollow blocks in place of the plaster blocks then in vogue. The lessons of the great Chicago fire were of great benefit in perfecting fireproofing. The system now practiced by the Chicago architects, and those of all the leading cities, is based on the use of one, and only one, material, namely, hollow fire clay blocks for all interior and roof constructions, and the protection of iron and steel. These blocks are made either of dense or porous material, but always of clay, and the best of them of fire clay. Building high on compressible soils necessitated economy in weights. Hollow materials *only* made this feasible. It was then found that the heights of buildings could be increased more and more by using steel frames, but only in case those frames were protected by the light fireproof material. Hence the latest and most improved buildings contain very few bricks, the exterior being of cellular terra cotta, and the interior faces of the exterior walls of hollow fire clay blocks.

The proper fireproofing of a building is not alone a matter of the selection of materials. It enters into nearly every feature of the plan. A building may be reasonably secure against accidental fire, or the extension of a fire once started, even if no special fireproof materials enter into its construction. This result is attained by cutting off communications as far as possible, being those unseen as well as those visible. The former are the numerous pipe and air passages, always so difficult to manage, and the latter the stairways and elevators.

The speaker said he did not recommend the class of buildings described as "partially fireproof." It is not reliable, as has been frequently demonstrated.

In a thoroughly fireproof building it is not alone necessary that the materials of construction shall be incombustible and covered with burned clay. (1) The clay used in the manufacture of the fireproofing material must be of a certain kind. (2) The forms of the pieces and the method of putting them together and securing them in place must be based on scientific principles, and the experience of those who have studied the subject.

The clay must be of the refractory kind, that is, it must be either a plastic fire clay, a semi-fire clay, or a fire clay mixed with a plastic clay or shale. The best fire clays are too "short" for this purpose and too brittle if highly burned. In the manufacture of porous terra cotta very few clays have been found that are both practicable for making a good article and reliable to resist fire when in use.

No clay that burns red or salmon color is fit for fireproof building material. It is a great error to accept so-called fireproof material made of inferior clays. The form and method of assembling and securing the fireproof clay materials requires great skill and often special study.

As a general principle, where metallic fastenings or hangers are necessary, they should always be either concealed within the fire clay or covered with mortar. All suspended fireproofing should be secured from the back or edges. As an illustration, the common form of roofing with **I** irons and book tiles is not a fireproof construction, and will sag and fall from slight exposure to fire on



the underside, though thoroughly fireproof on the upper surface. It should not be used unless protected by a suspended fireproof ceiling, all communication with the intervening space being permanently cut off. All girder covering supported by straps or bands on the outside is useless, and all wooden blocks built into fireproof material should be avoided.

In conclusion the speaker said: "I have endeavored to show that expert knowledge in this branch of your work has too often been unheeded, that experts have not been encouraged as they should be, and charlatans have, as they should not be. This is an error easy to correct, and the solution of it is that you should either become experts yourselves or employ those who are. The practice of architecture calls for expert knowledge of almost everything under the sun. None of us can possess it all, and hence it has been the custom of offices having large practice to adopt a department system for the division of office work. I think that where this is done the subject of fire protection has been too often neglected. This is only a little fault of omission that can easily be corrected, and I hope that I have been of service in calling your attention to it."

#### RECENT PLUMBING PRACTICE, by Glenn Brown, F. A. I. A.

In this paper a review of recent plumbing practice was given. Fifteen years of the methods of planning and jointing pipe and setting fixtures in plumbing a house are interesting as showing the lack of intelligence, both of the design and the workmen, of that period. The speaker enumerated the crudeness of these methods, the lack of scientific knowledge on the subject, and the dangerous results that were consequent. George E. Waring, Jr., first called attention to the lack of knowledge in a series of fine articles published in the *Atlantic Monthly* in 1874, and T. M. Clark followed in another practical series of articles published in the *American Architect* in 1878. These first advocated trap-ventilation. The literature on the subject since then has largely increased, but there is still a decided need for a thorough work on the topic. The speaker enumerated the leading books of the period, published in this country and abroad, and the theories advocated and practiced in France and England. The plumbers in this country have done nothing by way of adding literature to advance the trade, and in many instances they have opposed such advances. The agitation of the subject, however, by the few American writers, and the articles in our magazines and sanitary journals have produced a revolution in plumbing practice during the last ten years. The first and principal gain has been the adoption by the principal cities of plumbing regulations. Although these regulations are not all good, and the best of them are not free from defects, still the worst of them require plumbing which is far in advance in arrangement and execution over the ordinary work in vogue fifteen years ago.

Washington claims to be the first city to adopt plumbing regulations. These have been improved, from time to time, and last fall they received an extensive revision. Washington now requires all master plumbers, before they can practice their trade, to pass an examination. This the speaker considers a great advance and worthy to be adopted by cities that have not at present put such laws into execution, as it certifies to a plumber having at least a limited knowledge of his trade and a capacity to do his work. The requirement of city inspectors and the testing of pipe systems by water and air are excellent points attained.

A recent improvement in terra cotta pipes has been increased thickness, depth of hub and ribs in hub and

spigot. In all good work in recent years light cast-iron pipe has been discarded, heavy iron being used in its place. Several companies are now testing their cast-iron pipe by hydraulic pressure before sending it out. This is a decided gain, as cast-iron pipe of the best make was liable to sand-holes and other defects, many of which were covered by the pitch or other coatings. Instead of the old method of cutting holes in pipes of either terra cotta or iron, fittings are now furnished suitable for every contingency that may arise in ordinary practice.

One of the best modern improvements for house sewerage is the introduction of wrought-iron and steel pipe with screw fittings, by Mr. C. W. Durham. This gives a rigid piping system in no way depending on floors, which may rupture the joints in ordinary systems by settlement or shrinkage, and at the same time gives an opportunity for absolutely tight joints in pipes and connection with fixtures.

As to the use of lead pipe the question has long been settled that it is not injurious to health. All the drinking water in Paris, Berlin and London passes through lead pipes.

As to preventing siphonage and back-pressure all experimental experts agree that trap-ventilation is a fallacy. It has been found that it is practically impossible to siphon or force by back-pressure a properly vented trap, while all unventilated non-mechanical traps are liable under one contingency or another to siphonage or back-pressure.

It is found in actual practice, said the speaker, commenting on the experiments of Mr. Putnam, that the soil-pipe often necessarily has offsets and bends and the fresh-air inlets in seventy-five per cent. of actual cases (the small perforated covers) are closed or partially closed by dirt, when the maximum of back-pressure would be encountered, and when no trap in ordinary use would have sufficient water to counteract the pressure. Then, all the water in the trap is not necessarily driven in the pipe above the trap, but is forced back through it, usually in bubbles, the water passing up partially above the trap and falling back.

The speaker said that the danger of sewer-air passing in bubbles by back-pressure has been questioned. Sewer-air is dangerous only in case disease producing germs are in it, and in this case bubbles passing through by back-pressure would be dangerous. On this danger point Prof. Pumfelly says: "At normal summer temperatures no germs were given off from the decomposing liquids whenever their surfaces remained unbroken, even though in some of the experiments the air was continuously conducted over them in a slow current. When the surfaces of the liquid were broken, however, by the bursting of bubbles, germs were invariably given off and sterilized infusions infected, no matter how slowly the aspiration was conducted."

The speaker summed up the deductions to be drawn from all the experiments reviewed by him as follows:

1. That unventilated traps are liable to fall from either or both siphonage or back-pressure.

2. That small traps should have vents the size of the trap, and the main vertical vent should be three inches in diameter in ordinary dwelling houses, and should be computed for larger houses.

2. Ventilated traps do not fail by either back-pressure or siphonage

4. That ventilation through pipes of the proper size should be required in all specifications.

In the matter of methods of testing pipe-systems, the smoke and peppermint tests are of little service, as they do not represent any pressure. Filling the pipes with water or testing them with compressed air, the pressure showing on a gauge, are the only reliable methods.



CHICAGO—A SKETCH OF ITS RISE AND DEVELOPMENT, by Frederick Baumann.

The paper read by Mr. Frederick Baumann on the rise and development of Chicago, gave an interesting sketch of this most wonderful city in America from an architect's and engineer's point of view. The speaker described the peculiar topographical features of the city and the primitive manner in which the foundations of this future metropolis were laid. Mr. Baumann settled in Chicago in 1850 when the city had but 28,000 inhabitants.

Architecture, as a profession, began in 1846 and John M. Van Osdel was the first established architect, and architecture began to flourish rapidly in a desultory fashion but the style was loose and independent.

The speaker then devoted himself to a description of the peculiarities of Chicago's public, business and private buildings—peculiar architectural features and methods that excite the wonder of foreign visitors and its colossal grain elevators, and the manner and frequent habit of raising buildings, sometimes entire blocks, to higher street grades. Chicago is a great field for aspiring young architects. Chicago has developed a new school of architecture. A free and unembarrassed style prevails. The development of a characteristic style has not been so marked in other branches of architecture as it has been in that of residences. Little progress is perceptible in church architecture. The architecture of mechanical buildings is loose and irregular. A speedy progress toward a higher cultivation in regard to mechanical beauty is desirable.

The constructive science displayed in Chicago's business buildings, their height, their interior arrangements, their elevator service, have become the wonder of European visitors. All difficulties are conquered. The conclusion of Mr. Baumann's interesting paper is devoted to a sketch of two of his fellow architects, whose works are witnesses of their activity all over our broad country. To Richardson belongs the glory of having been one of the founders of the new professional school of architecture in our country, which he devotedly and with almost superhuman activity and determination disseminated from city to city.

THE SOUTHERN ARCHITECT takes peculiar pleasure in the fact that the speaker paid special and a most beautiful tribute to the work and genius of the famous son of one of Atlanta's oldest and best-known citizens, Mr. Sidney Root. We reproduce this deserved tribute to the late John W. Root in full, as follows:

"To John W. Root belongs the greater glory of having the style more fully developed and brought to life. Richardson acted as a forerunner who prepares the soil while Root was a master who cultivated it. Richardson beheld genius at a distance; Root approached nearer to touch it. Richardson lacked the faculty of imparting to his production the peculiar feature of what might be called spontaneous attraction; Root's works, such as received his whole attention, are full of life; they seem to breathe, and incite in us a feeling of delight. It is not possible to look at his "Rookery" or at the portico to the Insurance Exchange, or at any other of his favored works, without being inspired with a touch of this feeling. But Richardson was a thorough business man who would not allow anything to proceed from his office which did not bear the stamp of his work. Root, on the other hand, conscious of the spark of genius in his soul and ever good-naturedly disposed, did not submit to any such, to him, burdensome maxim. He accordingly had no enemies, and the account of his abrupt and early departure was received with deep and general sorrow.

"We all enjoy the grandeur and the bewitching beauty we meet at the World's Fair. Never was there in any part of the world, at any time, not even in ancient Rome at the height of her glory, an equal array of huge and magnificent palaces, and all so fitly grouped, surrounded by a landscape planted on what was shortly prior barren sand! We all know of the leading connection which John W. Root had with first originating this exquisite work of fine art which is equally great in the whole as it is in every single part, and thank him for what he did toward it beyond the pale of his premature grave."

#### GEORGIA GOT THERE FIRST.

THE first of the competitive plans for the new city hall of New York, to be received by Comptroller Meyers, was in a wooden case and came by express from Atlanta, Ga. Careful inquiry among the profession in Atlanta failed to disclose the competitor's name, and as the new municipal commission has directed the names of the architects are not given and the plans contain no mark of identification. The commission met on September 1, opened and compared all the plans submitted. The three advisory architects are Messrs. Hunt, LeBrun and Ware. After the best plan has been selected, some time will necessarily be devoted to the preparation of specifications, and it will be way into the winter before all these preliminaries are completed. The work of removing the old city hall will hardly commence until spring.

SAN ANTONIO, TEXAS, September 5, 1893.

*Editor Southern Architect:*

DEAR SIR—We would like to inquire through the medium of your very valuable paper the interesting question as to whom should the deposit fee belong in the case of a bidder leaving a deposit, and after the contract has been awarded to him refusing to sign upon same, thereby forfeiting his deposit? We want to know if the deposit should become the property of the architect or the owner? And would also like to hear the views of some of our brother architects on this important question.

INQUISITIVE.

The question as submitted presents to us but one solution. The architect is the agent of the owner, and accepts the deposit on account of the owner; clearly, the failure of the contractor to carry out the agreement works an injury to the owner, which was exactly what the forfeit was designed to either prevent or provide remuneration for in case of forfeiture. The forfeit money belongs to the owner.—ED.

AMONG the processes for fireproofing to which the attention of the directors of the Berlin Exposition was recently drawn, and for which awards have been declared, are the following: For light tissues, consisting of sixteen pounds of ammonium sulphates, five pound ammonium carbonate, four pounds borax, six pounds boric acid, four pounds starch—or one pound dextrine or one pound gelatine—and twenty-five gallons water, mixed together, heated to eighty-six degrees Fahrenheit, and the material impregnated with the mixture, centrifugated and dried, and then ironed as usual. One quarter of this mixture, costing only a few cents, is sufficient to impregnate fifteen yards of material. For certain materials, theatrical decorations, wood and furniture, thirty pounds ammonium chloride are mixed with so much floated chalk as to give the mass consistency, and it is then heated to from 125° to 150° Fahrenheit, two coats of it by means of a brush. A pound of this, costing only a mere trifle, is sufficient to cover five square rods.





## IMPRESSIONS OF AN ARCHITECT AT THE FAIR.

THE following entertaining letter from Mr. E. G. Lind, the vice-president of the Southern Chapter A. I. A., will be read with interest:

*The Editor of Southern Architect:*

When I left Atlanta for Chicago I fully intended transmitting you a prompt and faithful report of the proceedings of the twenty seventh annual Convention of the A. I. A. and the World's Congress of Architects, as well as some particulars of the World's Fair and the city itself, but I have been in such a constant state of wonderment and weariness since my arrival, that I have felt equal to nothing except resting and getting nothing of that.

The fact is, anyone coming to Chicago and expecting to live on in the old fashioned way will be surprised to find he has got to do two days' work in one all the year round or he will soon be nobody and nowhere. Everything here goes with a rush. It is worse than New York. Even the women go ahead as no other women can, if they do have big feet, which I have failed to notice; they make good use of them, and are quite as pushing and independent as the men if not more so. I like them.

About the convention. I was greatly disappointed in finding so small an attendance of architects. I had expected hundreds where tens only were visible, and felt sure the great fair would bring such an abundance of architects from all parts of the world that a chance would be given of meeting many old friends, but the attendance was really slimmer than usual, while the foreign element was almost entirely wanting. One Englishman alone representing Great Britain, and a Japanese, Japan. France and Germany had representatives somewhere, but did not come within my ken. Many papers had been forwarded for reading to the convention which will be published with the proceedings in due course of time.

Monday, the 31st of July, President Edward H. Kendall of New York, opened the convention with an address. General business was transacted, and at adjournment the members were lunched by the Illinois Chapter, and afterwards carried around the city in four splendid trolley coaches. With a short stop for lunch on the return trip, this outing consumed a good four hours which were enjoyed immensely, as a good opportunity was afforded of viewing the best part of the city and boulevards. These latter are as beautiful as they are abundant, no expense being spared in the decoration and maintenance. I have never seen anywhere landscape gardening in such beauty and perfection.

Tuesday, 1st of August, at 10 A. M., another meeting of the institute was held and business closed. At 2 P. M., same day, the formal opening of the Congress of Architects took place, Mr. D. H. Burnham, chairman, reading a paper, "The Organization of the World's Exposition," in which he gave his deceased partner, Mr. Root, all the credit for the conception and arrangement of the buildings and general plan of the whole. More than

once Mr. Root's name was mentioned during the congress, and each time with the greatest of praise.

Wednesday more papers and more entertaining, concluding with an excursion on the Lake to Lincoln Park. Returning later in the evening to the Worlds' Fair, we witnessed from the boat a grand display of fireworks, which, with the brilliant electric lighting of the Fair buildings and grounds, made a perfect fairyland of the place.

By 10 o'clock we reached the wharf at the foot of Van Buren street, well filled for one day with lunches and sightseeing, and quite ready for rest till the morrow.

The next three days were filled in with reading papers on various subjects relating to architecture, to very small, but appreciative audiences. Then the "World's Congress of Architects" closed forever.

Why is it architects display so little interest in the profession they practice and profess to love so well? Surely no other body of professional men would have manifested as much indifference as was displayed in this World's Congress of Architects? To my mind it was both disheartening and humiliating.

The Convention and Congress over, I felt at liberty to indulge in the World's Fair to my heart's content and indulged accordingly, winding up each evening by being thoroughly wound up, and retiring at night too weary even for dreams.

It is not surprising one should become fatigued wandering about the Fair grounds, when we are reminded of the fact that Jackson Park and the Midway Plaisance, on which the buildings stand, contain over six hundred acres of land. This is no small surface to cover, and when you come to add to this the wandering in and out and up and down the various buildings, the fatigue encountered is immense.

To attempt even a slight description of the grounds and various buildings composing the Fair would fill a volume and then fall short of conveying an adequate idea of the immensity and beauty of the whole. No expense or labor has been spared, and the results achieved probably surpass any effort ever before made in a like direction. It is fairyland, it is Aladdin's Palace eclipsed, it is perfection, and America can afford to feel proud.

The sight of the buildings alone was worth coming many miles to see, and I shall never feel sufficiently thankful that for once my bump of economy was overcome by my organ of extravagance, and I was led to visit this land of delectable delights, and spend time and money to so good a purpose.

One cannot fail to be struck with the care and attention bestowed upon the grounds and shrubbery; they are kept in beautiful condition and the floral designs are splendid. I was told \$4,000,000 had been laid out on these grounds previous to their selection for the Exposition, and altogether they had cost \$5,000,000.

The water front is about two miles in extent, beautifully adorned architecturally, presenting a magnificent appearance seen from Lake Michigan. In various parts throughout the grounds beautiful sheets of water are provided, symmetrically or naturally formed, adding greatly to the charm of the whole, and as some of these have boats and gondolas plying on them, the scene is bright and lively in the extreme.

When it is considered how many architects were employed to design the various buildings composing the Exposition, it is remarkable that so much harmony should prevail as a whole. No less than ten architects (three from New York, one from Boston, one from Kansas, and five from Chicago) and one architectess had fingers in this glorious architectural pie, the lady archi-



tectress being the author of the very beautiful Woman's building, or rather the very beautiful building for women. If any one had a doubt before of woman's fitness for the calling of architecture, let him doubt no longer.

On these buildings have been expended about \$35,000,000. They cover twice the area of the Paris Exposition of 1889, and cost twice as much. The supply of electricity alone cost \$1,000,000, furnishing 17,000 horse power for electric lighting. The supply of 24,000 horse power of steam is furnished by the largest and best arranged set of boilers ever seen, and one of the engines, the "Allis," is twice the size of the celebrated Corliss engine used at the Centennial Exposition.

In short, the Fair is a wonder of wonders. At every turn the eye and mind are kept going, and it only requires a sufficient number of visits for the eye and mind to be gone altogether. Just fancy, in the matter of fine art alone there are thousands and thousands of pictures, acres upon acres, which would take a connoisseur twelve months at least to examine, and yet a few days has to suffice to run them over; and here let me say while I think of it, that the United States comes out ahead in art as she has done in everything else. Only a few years ago America was nowhere from an artistic standpoint; now she is in it to stay. Some people think she will some day take the lead, I think she has already done so.

It may be worthy of remark that more people are to be found outside the buildings than inside. The truth is the exhibits attract far less attention than the buildings and grounds. A bicyclist might ride up and down the corridors of all the buildings except the one devoted especially to art, all day long, without inconveniencing the visitors, so few are there.

The propriety of erecting such expensive temporary buildings for exhibition purposes may be justly subjected to criticism, since the very beauty of the former detracts from the worth of the latter; indeed it is doubtful whether in the near future exhibitions will be found in sufficient number, to furnish an exposition that will be worth visiting if this practice is adhered to. I think it is equally doubtful whether such institutions as the "Midway Plaisance" are at all helpful to the progress of arts and sciences.

No visitor to the World's Fair can fail to be struck with the immense crowds always to be found on the Plaisance, attracted by the numerous side shows and exhibitions with which that place abounds, most of them merely catch-penny "fakes," and all making large draughts upon the time and purse of the sightseer. These international fairs were never intended to include such stuff, and it ought not to form any part of them, but they are there, people like it and pay for it; meanwhile the ambitious inventor and exhibitor is left out in the cold.

I cannot close this letter without a word for the city of Chicago proper. It is a wonder, both on account of its size and the magnitude and costliness of its buildings; everything is on such a large and magnificent scale that one doesn't begin to appreciate what he sees until he sees it in detail. After going over the floor and ascending to the top of a few such buildings as the Masonic Temple and Auditorium, he feels their bigness, and ceases to wonder that there are millions in 'em.

Then the streets are straight and wide, and as a rule very clean for so large a city, while the principle ones are freed from those disfiguring telegraph poles so unsightly in most big cities, the telegraph wires being all put underground. The street car service is abundant and generally good, though to a Southerner, too little respect is paid to the comfort and safety of the passengers in the

way of getting on and off, but one doesn't expect everything. Then too, one is often puzzled to learn the names of the various streets for want of proper signs, which is a great evil in a city where people are in too great a hurry to stop and answer questions, and police are too invisible to be found when wanted, but with all these drawbacks the visitor leaves the Windy City of the West with pleasant memories, and a thankful heart that he has escaped alive and whole, and with sufficient funds to carry him back home.

Yours truly,  
E. G. LIND.

#### "CAUSE AND EFFECT."

*Southern Architect:*

THE able extract from the pen of R. C. McLean contained in the July number of your valuable journal commends itself not only to the architectural profession, but to all practical builders throughout the country. Having made a specialty of public buildings for ten years, it is reasonable to suppose that my associations with the various architects throughout the country have resulted in learning some practical lessons of experience. While it has been my pleasure to construct buildings under the supervision of the very best architect in the country, whose sole aim was to act honorably in everything, and to show equal respect to the owner and builder in all matters of business, whose force of character left its impression on the minds of all with whom he came in contact, yet it has been my experience also, to work under the supervision of some who were actuated by mercenary motives alone, who had their favorites, and who spared no pains to let it be known and felt. In some instances I have seen the best plans laid aside in competition, and the one possessing the least merit adopted, just because the estimated cost was so far below all others, and when the bids of intelligent contractors were received on the work, based on the regular schedule of prices the difference would be unreasonable, and the architect would spare no pains to create the impression that the contractors were in collusion to run up the price, and that he could produce a builder from a distant city who would do the work for the estimated figure, but the builder would not materialize, and as a finale the plans would be cheapened in every way in order to award the contract, and enough extras would be put on to equal the amount first named, which would allow the architect his fees—who afterwards always carried with him the odium of the owner and the contempt of the builder. These are some observations taken in this city, and to-day it is by the greatest effort that any one here can be persuaded to employ an architect. This is not as it should be, and to-day there is no resident architect here. The result is, the contractor who can draw a plan and write specifications gets all the best jobs, provided he is reliable. These are some of the hindrances of professional advancement that compromise the dignity of architectural talent, and the day will be hailed with delight when legal lines will be drawn between the duties of an architect and a contractor, and such laws be enacted by the different State that will define and protect the profession and trade alike, in their respective relations to each other, and elevate both to a higher standard of dignity and excellence.

J. F. BARNES,  
Greenville, Miss.

WE have noticed one or two articles in architectural journals on the "Old Colony Building" in Chicago. By some unaccountable means the brick are described as a Roman brick coming from Philadelphia, and are called "paving brick." The fact is, these white brick were made by the Hydraulic-Press Brick Company, located in New Jersey, a few miles from Philadelphia, with headquarters at 406 Builders' Exchange that city.



## SOUTHERN YELLOW PINE.

EDITOR SOUTHERN ARCHITECT.—Referring to an article which lately appeared in the *Builder's Gazette* I feel constrained to take issue with the editor on the alleged combustibility of Georgia pine. It is a singular fact that after years of tests by insurance men and cotton mill builders, they have demonstrated that Georgia yellow pine is the slowest burning wood of all the pines. Many people, through ignorance, think that the wood is all pitchy or "fat," and will ignite easily. This is a mistake—not one per cent. of the Georgia yellow pine lumber is "fatty."

All woods burn if fire is applied to them, but in a post or girder it takes a long time to burn through a Georgia pine piece. It stands to reason that hard, closely-knit wood will be more slow in burning than a more porous wood like white pine. Edward Atkinson, the cotton mill expert, and all fire insurance experts, recommend the construction of buildings, mills, etc., of Georgia yellow pine posts, girders, etc., in preference to iron. They claim from experience that a certain degree of heat from a fire combined with spouting water to extinguish the fire will collapse iron; whereas the same flame on a Georgia pine post would not burn enough into the post to collapse it, hence it saves the walls from falling. When at any time a considerable fire gets headway in an iron posted building there is no salvage or saving the walls; but the fire department has a better chance to save a building built of Georgia pine. Why is it that matches are made of "white pine"? They cannot make a good match of yellow pine, because it will not ignite the wood as quickly as white pine. In the fire referred to in the recent article in the *Builders' Gazette* all kinds of woods, iron and everything else burned, hence it is no test for an opinion such as is there expressed. It is absurd to talk about the question there proposed. Insurance men say the only sure risk is iron, and it must then be under water. In Chicago this year the Chicago Athletic Club's new building caught on fire, causing a loss of \$50,000. It was a fireproof building. There was not a foot of yellow pine in it; oak and white pine only, and nearly all of it was hollow tiles. The editor of the *Builders' Gazette* might just as well "jump on" hollow tiles and figure out how combustible they are, as to talk about Georgia pine.

Yours truly, M. F. AMOROUS.

THE "cedar pencil" will soon be a misnomer. The pencil makers have drawn so largely upon the red cedar forests for material for lead pencils that the red cedar supply is becoming exhausted, and the pencil makers are looking about for a substitute. Cypress has been found to be pretty well adapted to the purpose, and this is creating an increased demand for cypress.

THE SOUTHERN ARCHITECT, in its editorial department, has long since relegated ink to the background, and our annual destruction of "Dixon's No. 342 Crayon" runs away up into the hundreds. Few of us realize the great amount of pencil timber required, although we are all free to admit that many millions of pencils are used up each year.

THE Pittsburg Reduction Company have contracted with the Niagara Falls Power Company for 6,500 electric horse power, for use in a new aluminum plant to be erected at Niagara Falls. It is understood the Reduction Company will use principally material from the beauxite banks of Alabama in the plant at Niagara Falls. This company will be the first to use the power of the new tunnel at Niagara, which is expected to develop several hundred thousand horse power.

The using of Alabama beauxite upon such a large scale as that contemplated by the Pittsburg company will give a decided impetus to beauxite mining in Alabama.



THAT the use of lead pipe for carrying drinking water has some dangers is too well known to require discussion, and immense numbers of substitutes have at various times been suggested or put on the market. Recently, a new form of glass lined iron pipe has been proposed. This seems to be "an old friend in a new dress." Years ago glass lined iron pipe was proposed and even put into the market, but it developed several defects. The ordinary handling in the shop caused the lining to break; in cutting it bad cracks were formed, and sometimes large pieces of glass were detached. Even the improved pipe now proposed is not entirely free from this objection, although it is said that the glass is to be secured in place by cement. Iron pipe has been coated with tin by the dipping process, and a lining being given by pouring melted tin in the pipe. The trouble with this seems to have been the difficulty of getting a coating sufficiently thick to protect the iron. At the joints rusting could take place, as the ends of the pipe were not protected. Tin lined lead pipe was for a long time made by Tatham Brothers, by drawing a tin tube inside of the iron pipe and expanding it in place. Tin washers for protecting the cut ends of the pipe, properly protected tin bends, and other fittings were provided, so that the entire tin coating to a system of pipes could be obtained. This was somewhat costly and was not generally introduced as it deserved to be.

Porcelain lined pipes had been proposed, but they had the same objections as the glass lined pipe. The Bower-Barff process has some of the inevitable disadvantages of an iron pipe coated with a protecting material. At the joints, when the pipe is cut, there is an exposed unprotected surface. If the pipe is bent, as in a great many cases, the protecting coating scales off, leaving the pipe free to rust. Tin lined lead pipe has been in use for many years. The principal objection to it seems to be that it is not liked by plumbers. It is somewhat hard to work, and unless carefully handled, a wiped joint is not easily made without causing the tin to flow inside the pipe. A great many horrible examples of wiped joints in tin lined pipe have been shown. They have been supposed to prove that a tin lining was the cause of such bad workmanship. It seems more probable that the same kind of joints would have been made by the same kind of workmen on lead pipe. In some parts of the country people have gone so far as to use brass and bronze pipes for the water service. The brass under the action of hot water has not always proved satisfactory. Brass is not above suspicion in resisting corrosion. Some qualities of brass resist fairly well, but not enough is known about the action of water upon these pipes to enable an opinion to be expressed at the present day. The cost is practically prohibitive for general use. It is to be hoped that inventors will not be discouraged, but will keep on in their efforts to find a better service pipe.—*Builders' Gazette*.

THE computed total number of telephone exchange connections yearly throughout the United States has advanced from 312,605,000 in 1886, to 600,000,000 in 1892.



KATHARINE B. JOHNSON gives in the *Albany Cultivator* some household hints that are very seasonable.

That there are so few servants so thorough that they should not inspect the refrigerator daily to see that no liquids are spilled or food allowed to spoil and contaminate the rest.

That dishwater, which is always impregnated with more or less vegetable matter, should never be thrown on the surface of the ground at the back door.

That all tubs and basins in bath-rooms and kitchen sinks and drains should be flushed with hot water every weekly washing day.

That sulphate of iron (copperas) and chloride of lime, two of the best disinfectants, are but ten cents a pound, and a plentiful use of either in sinks and open drains during the summer and autumn may prevent that dreaded disease, typhoid fever.

That no hamper or other receptacle of soiled clothing, no matter how handsomely decorated, should be kept in a sleeping apartment.

That powdered borax, plentifully used, will exterminate cockroaches and water bugs.

IN a paper on the purification of the air in public buildings and dwellings, read before the Society of Arts by Mr. Wm. Key, an apparatus was described for filtering and washing the air. It consists of a screen formed by stretching some thousands of cords, of suitable material, from the ceiling to the floor of the air chamber. The cords touch each other and are interlaced horizontally with copper wires, which are drawn tight to give the screen a flat surface, so that it has the appearance of coarse cloth. Air passing through is broken up into minute streams, and is washed free from impurities by water trickling down the cords. Experiments showed that not a particle of the densest fog passed through the screen, the air being filtered "bright and clear, perfectly sweet, and free from odor." Dust particles were not so perfectly removed, but it was noticed that, after removal of fog, the air was so much brighter and clearer than usual as to suggest that the artificial production of fog might ensure the complete removal of very minute dust particles.—*Scientific American*.

THE dangers that lurk in the air form the subject of an essay by M. de Nansouty on "The Atmosphere of Large Towns and Micrography." He points out the increased pollution of the air in Paris from the factories worked by steam machinery, and remarks that vapors which contain sulphur are specially disastrous to the lungs, since the sulphur which they contain is transformed into sulphurous acid and then into sulphuric acid, which falls back to the earth with the rain or fog.

An analysis of dust and rain particles reveals that a remarkable collection of divers objects may be absorbed at every breath in the streets of a large city; silix, chalk, plaster, pulverized rock, charcoal, hairs, fibers, vegetable refuse, starch, pollen cells, etc. A specimen of dust collected from furniture on the third floor of a street in Rennes contained all this and nearly three million bacteria in addition. A gramme of dust (about fifteen grains) in movement in the streets encloses about 130,000 bacteria. The dust of houses, then, is far more dangerous. M. de Nansouty concludes that it is of incalculable importance to devote incessant attention to the number, quality and nature of these microscopic beings which surround us.

ELECTRICITY, where unretarded by atmospheric influences, travels at the rate of 288,000 miles a second.



#### WIRING OF BUILDINGS FOR ELECTRIC LIGHTS.

It is almost universally the practice in draughting specifications for the electric light wiring to stipulate that "the loss in potential in circuits shall not exceed two per cent.," or that "the wiring shall have not more than two per cent. drop," meaning that the loss in volts on any conductor, due to the resistance encountered by reason of the current passing through that conductor, shall not exceed two per cent. of the voltage applied. Why two per cent. loss is so generally stipulated is not plain, neither is it always necessary that it should be specified in every case, as in some instances a loss of three or four, or even five per cent. would be more advantageous to the owner of a building than would a loss of two per cent. Nevertheless, a two per cent. "drop" is generally specified, yet it is a fact that of all the larger buildings in San Francisco, hardly one of them comes up to the two per cent. limit specified. When it is realized that fifty per cent. more copper is required to wire a building under two per cent. loss than under three per cent. loss, the importance of the matter becomes apparent. To place the facts in another light: a certain building is to be wired for incandescent lighting under specifications calling for two per cent. loss. To carry out these electric specifications would require the installation of, say, 3,000 pounds of copper wire. The electrician, realizing, however, that the architect generally has no means of determining whether the specification has been adhered to in the matter of "drop," concludes to install the circuits at three per cent. loss. He does so, and what occurs? The insurance inspector examines the installation and accepts it, for he only looks at the work from the fire underwriters' standpoint, and his certificate only attests that the wiring presents no fire hazard. The central station people also examine the work, and finding it to be safe and properly laid out, they too pass the work, for they do not compare it technically with the specifications any more than the insurance inspector does. The current is thrown on to the wiring, it works satisfactorily, all lamps burn to the satisfaction of the architect, nothing more is said about the two per cent. loss stipulation, the work is accepted and paid for, and that is the end of it so far as 99 cases out of 100 are concerned. Yet what has the wireman done? Instead of installing 3,000 pounds of copper wire, as called for under the two per cent. clause, and as he was paid for doing, he wired the building for three per cent. loss, and saved thereby 1,000 pounds of copper wire, for under three per cent. loss but 2,000 pounds was required, and no one was the wiser.

These frauds, so palpable to an expert electrician, yet concerning which laymen are utterly ignorant, are practiced daily by all save a very few first-class wiring companies, and indeed many concerns ignore the loss requirement altogether in wiring, yet consider it in making up bids. Others will maintain that their work is figured for two per cent. loss, say, while upon questioning it soon becomes apparent that they do not know how to



figure drop potential, or they will use a two per cent. wiring table, and will generally get a two per cent. loss each on mains, submains and ultimate circuits, or six per cent. loss in all, while two per cent. was called for. A large concern having a capitalization of several hundred thousand dollars, when questioned as to the fulfillment of the two per cent. clause in a certain building it had wired, struck the keynote in the matter when it frankly and honorably admitted that it had not carried out the two per cent. requirement, for the reason that it could not do so and compete for business. It had, however, placed the wiring in accordance with "commercial usage," and it maintained that for that reason the work should be accepted.

The writer has frequently been asked to assign a reason why such discrepancy so frequently exists between the bids of different electrical concerns on the same piece of work. Reasons for this may be found from the facts above cited. Some few concerns will follow the specifications rigorously in every detail, while others, taking advantage of the universal ignorance prevailing in regard to electrical matters, contract to do work that they never intend to perform. A dual result ensues. Owners pay for something they do not get, but they do not know it, and the electrical wiring business is utterly demoralized, both physically and morally.

It must not be inferred that a two per cent. specification is never advisable, or that a three per cent. clause will prove equally satisfactory, as in the instance cited.

To lay down a general law even for a given class of building is impossible, and each building must receive specific consideration, both in the manner of proper loss in potential as well as in the load basis upon which to figure the circuits. It is evident then that the draughting of electric wiring specifications is a matter worthy of the most serious consideration, concerning which the architectural profession is deeply interested.—Geo. P. Low, in *California Architect*.

"A FEW days ago," says D. A. Williams in *Kansas City Architect*, "one of our prominent architects called upon us to consult with regard to arranging electric wires from a gas outlet in a parlor to some point in the building, which is an old one, so that in the future the parlor could have electric lights without damage to the walls and fresco work. The thought of unsightly wires hanging down from the gas outlet was distressing, so we suggested placing conduit in the building, which was done. Now, whenever the owner desires to place wires in, he can do so without difficulty, or in any way defacing the ceiling or walls. We commend this plan to other architects, when called upon to remodel old buildings."

THE word "ampere" is derived from the name of a distinguished French physicist and electrician, who at the beginning of the present century enunciated some of the leading principles and theories in electricity. At the Paris Electrical Congress of 1881, the word was adopted as the name for the unit for measuring quantity of electricity. Thus, a current of eight amperes drawn from an incandescent lighting wire gives one horse power; sixteen amperes, two horse power, etc. This unit, the most important in all power measurements, has already become familiar and highly useful in all electric light and power work.

It has been determined that the temperature of an electric arc light remains constant at about 3,500 degrees. This temperature cannot be increased or diminished by changing the size or amperage of the arc.

THE Crypt of St. Mark's, Venice, which dates from the eleventh century, is now illuminated by means of electricity, and was opened to the public on the festival of the patron saint. The ninth century crypt is still kept closed.

AN interesting contract was recently made between the Baltimore and Ohio Railroad and the Thomson-Houston Electric Company. As is well known the B. & O. is now engaged in constructing a mammoth tunnel under the city of Baltimore which will be, when completed something over a mile in length. The question of properly ventilating this tunnel has occasioned considerable discussion, and it seemed that whilst patrons of the B. & O. would be benefited in the way of more rapid transit, they would, however, be subjected to the annoyance necessarily arising from the dense smoke that would collect inside the tunnel after being emitted from the locomotives pulling the many trains that would pass and repass through the tunnel each day.

The Thomson-Houston people concluded that they could remedy matters, and accordingly they have entered into a contract with the B. & O., the terms of which provide that in case they succeed in satisfactorily proving after six months' trial that their scheme to pull the trains through the tunnel by means of a motor car operated on the trolley wire system is practical and efficient, then the B. & O. Railroad Company will permanently adopt this idea. Of course, if successful, the question of smoke will be permanently and effectually disposed of. Railroad electrical people and the general public will watch this trial of electricity in the railroad field with extraordinary interest.

ELECTRICITY seems to be coming prominently to the front for use in purification processes. It has been successfully introduced in France and England for purifying sewage, and if worked with a refuse destructor, in which the heat can be used for generating the current, it is thought it will be found not only more satisfactory but more economical than existing methods. In Germany an electrolytic process for purifying mercury for use in very accurate work is coming into general use. A new method of bleaching starch by electricity, adds the *Boston Journal of Commerce*, is also reported, by which, it is said, second and lower qualities of the product can be stretched electrolytically, so that they can compare favorably with the first quality. Methods of manufacturing ozone by electrical action are also well known. In fact, it seems as if the electric current was destined to play a very important part in the sanitary engineering of the future.

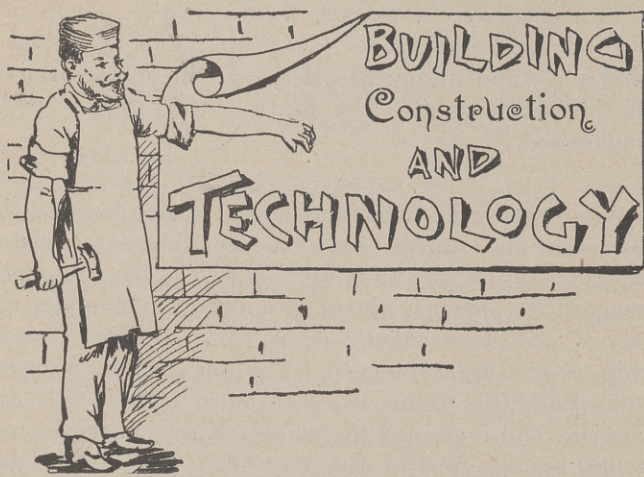
ELECTRICITY is now used to put a fancy shine on hats. Six hundred telephones are in use at the World's Fair grounds.

A PATENT has been issued for a lock which can be operated only by a magnetized key.

OVER 14,000 patents have been issued by the United States for application of electricity.

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.





ONE gallon priming colors covers 50 square yards; white zinc, 30; white lead paint, 45; lead color, 50; black paint, 50; stone color, 44; yellow paint, 44; blue color, 45; green paint, 45; bright emerald, 25; bronze green, 75.

As there are no hod carriers in Germany, for the simple reason that the hod is unknown there, each brick has to pass from hand to hand. The higher up the bricklayers are the more men are required to toss the brick. Two men to the story is about the average, with enough more to lead from the front of the building to the place where the brick are needed. The brick tossing part of this can easily be understood but how about the mortar?

To remove the green that gathers on brick, pour over the brick boiling water, in which any vegetables (not greasy) have been boiled. Do this for a few days successively, and the green will disappear. For the red wash, melt one ounce of glue in a gallon of water; while hot put in a piece of alum the size of an egg, half a pound of Venetian red and one pound of Spanish brown. Try a little on the brick, let it dry, and if too light add more red and brown; if too dark, put in more water.

THE State Capitol of Texas is the largest State building in the United States and the seventh in size among the buildings of the world. It is a vast Greek cross of red Texas granite, with a central rotunda covered by a dome three hundred and eleven feet high. It was begun in 1881 and finished in 1888, having cost about \$3,500,00. It was paid for with 3,000,000 acres of public land, deeded to the capitalists who executed the work.

INSTEAD of loading the floor with plaster for the purpose of deadening sound, a method suggested by a writer in one of the French trade papers is to fill in the space between the boarding and the plastering of the ceiling with shavings, which have first been rendered incombustible by dipping them in a tub of thick whitewash. It is a well known fact that soft substances in closing air spaces form a good non-conductor of sound, and the writer in the paper referred to is of the opinion that shavings so treated will be found of great service, while their incombustibility adds in no small degree to the fire-resisting properties of the building. When it is desired to disinfect the space between the floor and the ceiling the shavings are saturated with chloride of zinc, or the latter may be added to the lime wash.

THE perfection to which wood carving by machinery has attained is well illustrated by the fact that an eastern company manufactures a carving machine which will carve portraits from life in wood or marble as accurately as if executed by the hand of a sculptor. The

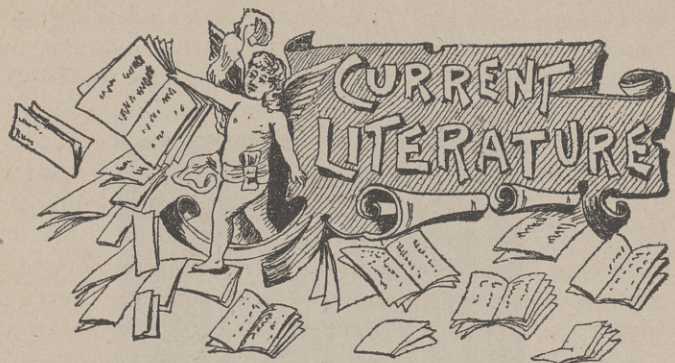
machine is automatic and will do the work of twenty men, requiring no skilled labor to run it. One man can operate four machines at the same time, and it will produce forty different subjects at once, from cameo to life size. Any material carvable can be easily worked. For interior and exterior finish and decorations, for public and private buildings, for railroad coaches, steamboats, for pianos, organs, mantels and furniture of every description, for marble mantels, soda fountains, etc., the carving made by this machine can be used very extensively and profitably.—*Builders' Gazette*.

THE safety device for elevators, patented by Mr. John Hatch, of Dayton, Nev., is intended for instantaneous automatic action in preventing the dropping of an elevator cage in case the hoist rope breaks. It comprises a series of friction shoes which are normally clear of the vertical guides, but are held in close relation thereto. There is provided upon an upper cross beam of the cage, two pairs of laterally projecting fulcrum arms, into which are pivoted four levers in a horizontal plane. The short arms of these levers project to embrace the respective sides of the guides, and are provided with friction shoes of V shaped vertical faces, which ride closely contiguous to the correspondingly shaped guide edge. The inner ends of the levers project near the center of the overhead beam and connect to toggle arms arranged to give a lateral thrust outwardly. Connection is made with a branched rope passed over pulleys and drawn by a counterweight. In the event of the rope breaking, the toggle arms thrust the levers laterally, causing the friction blocks to grip the guides with strong force. Supplemental blocks are also provided, to be drawn into engagement by means of vertically disposed link arms acting coincident with the mechanism above described. Springs may be substituted in lieu of the counterweight, if circumstances require it. Means are also provided for gradually letting down the cage under frictional control, in case the breakage should occur at an elevation.

#### SOUTHERN HOUSES.

A CORRESPONDENT of *Carpentry and Building* after referring in very complimentary terms to the general excellence of the JOURNAL adds with regard to a recent article: "May I, with all respect, say that with the many admirable designs of dwelling houses, and they monopolize with their detail, the principal part of the paper, I have never seen the design that was, to all intents and purposes, of any real use as a southern house. An architect, to understand the requirements, must live on the spot. Eight months out of twelve southern life is, essentially, an outdoor existence, and narrow halls, doors to rooms, except bedrooms of course, and cramped and poky staircases are an abomination. The great desideratum is air, and plenty of it. Hang *portieres* to the room openings and loop them up. If a chilly blast comes on they can readily be lowered and the place made snug and cozy. One other point, the east and west must have piazzas. During the heat of the day when the sun is southerly, it is almost perpendicularly over one's head and the piazzas are not so imperative, though, of course, it is a comfort to have them. But the westerly or afternoon sun is the most oppressive, and a low wide veranda, not less than nine feet, is almost a necessity of existence with comfort. I have seen houses erected here from northern plans which have been perfect ovens in their intense heat. It must be clearly understood that unless a piazza gives shade across its entire width, the refraction from the floor counteracts any benefit that may otherwise accrue.





*Stone* for September surpasses previous issues of this always excellent magazine. Its frontispiece is a photogravure of the offices of the Western Stone Company and is a beautiful piece of work. The number, besides, contains the third installment of "Theory vs. Practice," and a very well illustrated article on the "Chateaux of France," a short sketch by R. K. Munkittrick, "Lorton's Luck," and a good assortment of technical reading. "The Quarries of the Pharaohs" is reproduced from the *Manchester Guardian*, and "Stones of Other Countries" is from Geo. P. Merrill's pen.

*Turf, Field and Farm* is probably the ablest and most reliable paper of its class in the United States. It upholds the valuable and delightful avocations of life and maintains them in the region of their true dignity and usefulness. As the organ of the horse breeding and racing interest it is also the authority on all useful pastimes, shooting and kennel subjects, and is one of our most valued exchanges, and, although we do not often have opportunity of using or reproducing its matter, yet we never fail to find much interesting matter in its columns.

The complete novel in the October number of *Lippincott's* is "The Hepburn Line," by Mrs. Mary J. Holmes. It is a pleasing tale of an old Kentucky family and a neglected heroine who comes to her own at last. The eighth in the series of Lippincott's Notable Stories is "A Deed with a Capital D," by Charles M. Skinner. Other short stories are "Poor Yorick," by Robert N. Stephens, and "The Pass'n's Grip," by Rosewell Page; both are illustrated. "Two Belligerent Southrons," by Florence Waller, "Running the Blockade," by Emma Henry Ferguson, "A Tiger Trapped," by Rosemary Baum, "Fun in the Poets" and "Men of the Day" are all good.

October *Demorest* reached us far ahead of the others and afforded plenty of time for a thorough and enjoyable reading. "Silver from Mine to Mint" is free from technicalities, as told by Anna Jaffray. She was in the mines herself and has the happy faculty of telling exactly what she saw and heard there in such a manner as to make the reader imagine he is on the spot. It is most comprehensively illustrated. The "Diary of an Athletic Girl" improves as it proceeds, and the "Captain's Daughter at the International Cup Race" is well written by a thorough yachtsman, and illustrated. "The Silver Thread" is one of those impossible stories which sometimes upset our calculations by actually happening in real life. All interested in floriculture in winter should read "Winter House Flowers."

*Godsey's* for October shows unmistakable evidence that their proofreader is enjoying his vacation and no substitute has been provided. "The Real Tom Brownson" is the complete novel, is on the "happy ever after" style and is quite bright and entertaining. The Clocks of Paris, written and illustrated by Eleanor E. Greatorex; A Princess in Bohemia, a charming short story by Sewall Read; Old Prints, a sketch by John Sheridan Zelle, and A Plea for the Play-writer, by Fannie Aymar Mathews. All the departments are universally interesting and carefully edited, and the exquisite water color portraits are those of Mrs. Robert L. Henry and Mrs. A. Shreve Badger, of Chicago. The poems are by Frederic F. Sherman, Milton Goldsmith, Harry Romaine and W. J. Lampton.

"Electricity at the World's Fair" opens the October number of *The Popular Science Monthly*. Frederick A. Fernald describes "Household Arts at the World's Fair." An account of the system of caring for the insane recently adopted by the State of New York is given by Dr. Andrew Macfarlane in "The Duty of the State to the Insane." Dr. Nicholas Borodine, contributes a notably interesting account of "The Ural Cossacks and their Fisheries," with illustrations. Another fully illustrated article by Henry L. Clark describes "A Characteristic Southwestern Plant Group," "The Lip and Ear Ornaments of the Botocubus," "Criminal Festivals," "The Progress of Psychology," "The Problem of Colored Audition," "Some Characteristics of Northwestern Indians" and a "Sketch of Werner von Siemens" complete the body of the magazine.

*The Art Interchange* for October is an unusual number, both in its matter and illustrations, as well as the high grade of its supplements, three of which are in color and two in black and white. The Dutch pictures at Chicago are ably reviewed and handsomely illustrated. The portraits at the Fair and the Color Decorations also receive attention in separate papers. Paul Albert Besnard, with a portrait drawn by himself, is the artist biography of the month, while Mr. W. M. Chase is also shown in connection with an account of the Shinnecock Hills Art School, written by Rosina Emmet. The statue of Alexander Hamilton, just set up in Brooklyn, is illustrated and de-

scribed by Gilson Willets. Decorative Art, Woman's Handiwork, On the Furnishing of the Hall, are treated in the Department of Household Art, together with the usual instruction notes for painting, embroidery, etc. The Postscripts have become a very readable department and furnish the latest news and fancies.

F. Hopkins Smith contributes to the October number of *Fetter's Southern Magazine* a most delightful description of Venice, in his "Gondola Days." This versatile artist, who is a civil engineer, painter, novelist, and who excels in all, has his soul stirred to its depths by the witcheries of Venice, and writes with the enthusiasm of a discoverer. The article has three full page illustrations from drawings by the author, and several decorations from the pencil of W. J. Dodd. George M. Davie contributes some translations of the Odes of Horace, which we believe have no equal in the English language. Mr. Davie holds that the Odes "should be rendered in rhythmic language, measures and cadences; but not in rhyme." He has succeeded in preserving the mingled tone of thoughtfulness and playfulness which characterize the Odes, and which have given them a hold upon the minds of men, which no change of taste has shaken. M. Gustave Hale sends an interesting article upon South American Mining Life. Joaquin Miller, Mrs. Clark Waring, S. Elgar Benet and others contribute excellent fiction.

In *McClure's Magazine* for October Robert P. Porter tells us that Thomas B. Reed, of Maine, was born just around the corner from Henry W. Longfellow's birthplace. "The Human Documents" consist of three portraits of T. B. Reed, four of Frances E. Willard, four of "Bill Nye," better known as Edgar Wilson Nye, and seven of George W. Cable, the novelist. Psychologists and those interested in psychology will read with interest Herbert Nichols' "The Psychological Laboratory at Harvard," and how very near Professor Tyndall came to losing his valuable life under an avalanche, at Pie Marteratsch, in the Engadine, in the month of July, 1864, is graphically related. C. Kinloch Cook tells us a great many new and interesting things about that thorough-bred Irish gentleman and sportsman, the Earl of Dunraven, who it seems is an old newspaper correspondent, and that he hunted with Buffalo Bill, long before Ned Buntline made the latter known to the effete East and perfidious Albion. Walter Besant has a short story which is a very powerful sermon on the awful evils of moderate drinking. It is called "A Splendid Time—Ahead," and the fog and squalor of London permeate it; but it is true to the life.

*Scribners*, October, has a very frank paper by W. D. Howells on "The Man of Letters as a Man of Business." J. G. A. Creighton, an officer of the Canadian Senate, describes the origin and daring achievements of "The Northwest Mounted Police of Canada," which for twenty years has kept the peace in a great territory equal in area to France and Germany. Frederic Remington, who has travelled among the police in Canada, illustrates the article. Will H. Low contributes the third article in the series of "Artists' Impressions of the World's Fair," looking at the art of the Exposition with his critical sense, but yet with admiration. The paper is illustrated with sketches from Mr. Low's note-book. Rev. Teunis S. Hamlin, D. D., the pastor of the church in Washington which was attended by President Harrison during his administration, describes some of the most famous "Historic Houses of Washington" associated with dramatic events and important personages. The article is fully illustrated with sketches recently made of these beautiful old houses. "The Mystery of the Red Fox," by Joel Chandler Harris, "Glimpses of the French Illustrators," by F. N. Doubleday; "In Viger Again," "Carleton Barker, First and Second," "Scott's Voyage in the Lighthouse Yacht," by Robert Louis Stevenson, and the "Copperhead" are all good.

The *Atlantic Monthly* for October contains the beginning of a three-part story, entitled "The Man from Aidone," by Mrs. Elizabeth Cavazza, of Portland, Maine, who is especially qualified to write just such an interesting story as this is. It is a story of Italy, and the characters and local color are admirably managed. Miss Edith M. Thomas contributes one of her charming papers of mingled prose and poetry on the "Under-time of the Year," and it will be found one of the most delightful articles on outdoor life in early Autumn that American literature can show. Captain Mahon, who has written several important articles relating to marine matters, contributes to this number a paper of much value on "The Isthmus and Sea Power." William F. Athorp, a well-known authority in musical matters, contributes an article of great interest to music lovers on Robert Franz. Charles Egbert Craddock contributes, with undiminished vigor, her notable story, "His Vanished Star," and Annie Eliot contributes a striking story, "After—the Deluge." Professor James Monroe, of Oberlin College, who was for many years an honored member of Congress, contributes a paper of great interest giving the history of "The Hayes-Tilden Electoral Commission." An excellent literary paper by Professor Jebb, of the University of Cambridge, discusses "The Permanent Power of Greek Poetry." "The Gothenburg System in America" is an interesting and helpful contribution to the understanding of the best mode of treating the control of the liquor traffic, by E. R. L. Gould. A paper which will be read with no little interest is one by James L. High on "The Tilden Trust, and why it Failed." Six short poems, which the writer, John Hall Ingham, calls "Tone-Symbols," a poem, "Love is Dead," by Marion Couthouy Smith, with a review of New Books on Music, review and comment on other new books, and five bright short papers in the Contributor's Club, conclude an excellent notice of this magazine.



## THE GRAVES ELECTRIC ELEVATORS.

We present in the accompanying cut one of our new Direct Connected Electric Passenger Elevators, which we are now building from new patterns, and which offers a good combination for any reasonable speed and capacity, and is guaranteed in every respect equal to any other make.

It is now over two years since we commenced to build Electric Elevators in a moderate way, and had them successfully running, yet we have felt in no hurry to crowd them on the market, as we considered the Electric Elevator in its experimental condition, and our works, at the same time, were employed to their full capacity on hydraulic passenger and other kinds.

While all have been ready to admit that our Steel Screw machines, with their improved construction, were better adapted to successful electric work than any other make, they only depended upon complete electrical connections to make them the most complete. This, the experimental part, has given us and our customers some trouble, as it has all other makers.

We have installed many successful Passenger and Freight Elevators without our late improvements, which we will be pleased to refer to, but now, with our later changes and electric connections, we feel perfectly justified in offering the public a superior Direct Connected Elevator for passenger and freight service.

We use any design, cost or quality of car best suited to the requirements, and fitted with patent safety attachments.

We have recently published a 100 page catalogue, fully describing and illustrating our many different designs of elevators, which we will be pleased to furnish on application to any of the following of our offices:

Main Offices, Graves Building, Rochester, N. Y.

New York City, 92 & 94 Liberty street,

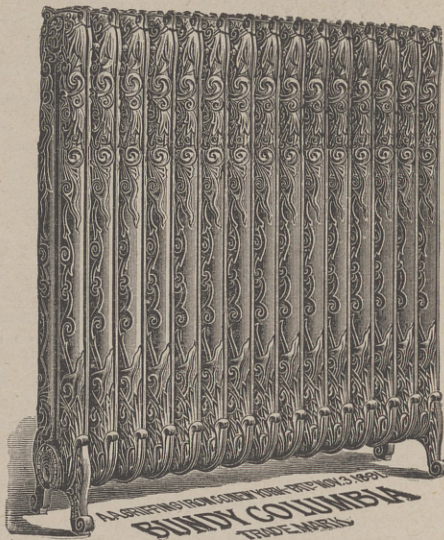
Boston, 53 State street,

Detroit, Hodges Building, or

Southern Office, Inman Building, Atlanta, Ga.

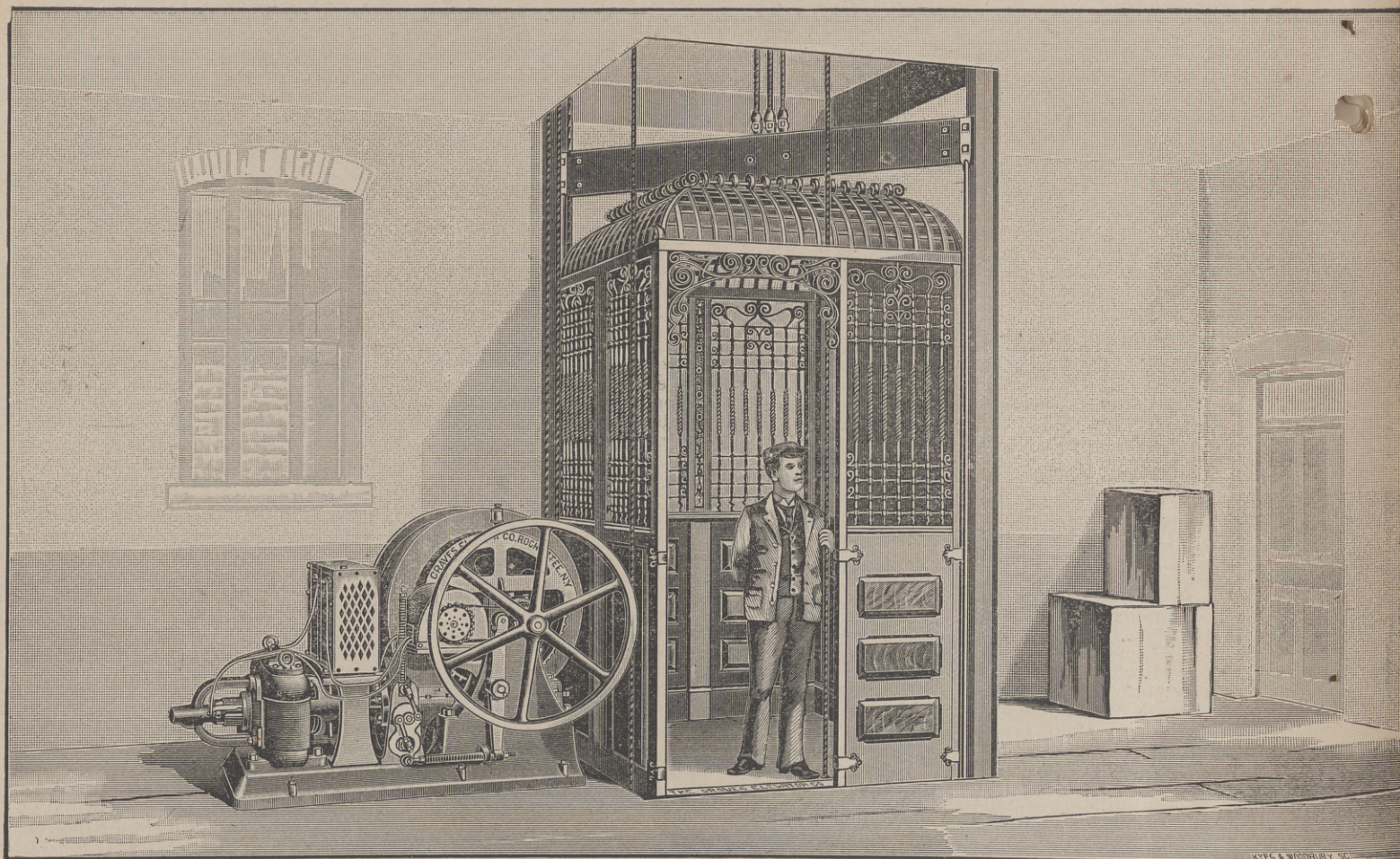
THE GRAVES ELEVATOR CO.

is of the Byzantine type, a type of architecture that sprang into existence and was fully developed in the Byzantine Empire during the third century. Its leading forms are the round arch,



the dome, the pillar, the circle and the cross. Notable examples of this time honored architecture are found in the Mosque of St. Sophia, Constantinople, and the Church of St. Marks, Venice.

The Bundy Columbia Radiator is made in a great variety of heights, namely, 45, 38, 32, 26, 23 and 20 inches, for both steam and hot water, and is furnished with feed and return tappings at both ends, or at the same ends, or one end only for one pipe work. The Radiator is tested to one hundred pounds pressure, and every precaution taken to make it a first-class production, and the manufacturers, A. A. Griffing Iron Co., have a good stock on hand from which to supply their patrons from their various



The Bundy Columbia Radiator, which we illustrate, is brought out in commemoration of the Columbian year, and was first exhibited to the public gaze at the World's Fair, Chicago, in the exhibit of the A. A. Griffing Iron Co., the manufacturers, in Section O, Block 3, Manufacturers and Liberal Arts Building. As will appear from the cut, the manufacturers have spared neither expense nor time to make the Bundy Columbia Radiator perfect. That it will at once attain a prominent position among radiator users is assured from the fact that it is already specified by leading architects and engineers throughout the country. Its design

offices, 15 Dey street, New York; 88 Lake street, Chicago; 18 South Seventh street, Philadelphia, and from their factory, Jersey City, N. J.

The C. H. & D. R. R. have issued a handsome panoramic view, five feet long, of Chicago and the Worlds' Fair, showing relative heights of the principal buildings, etc. Also a handsome photographic album of the World's Fair buildings, either of which will be sent to any address, postpaid, on receipt of 10 cents in stamps. Address D. G. Edwards, General Passenger Agent, World's Fair Route, 200 W. 4th street, Cincinnati, O.



THE WILLER MANUFACTURING COMPANY'S EXHIBIT  
AT THE WORLD'S FAIR.

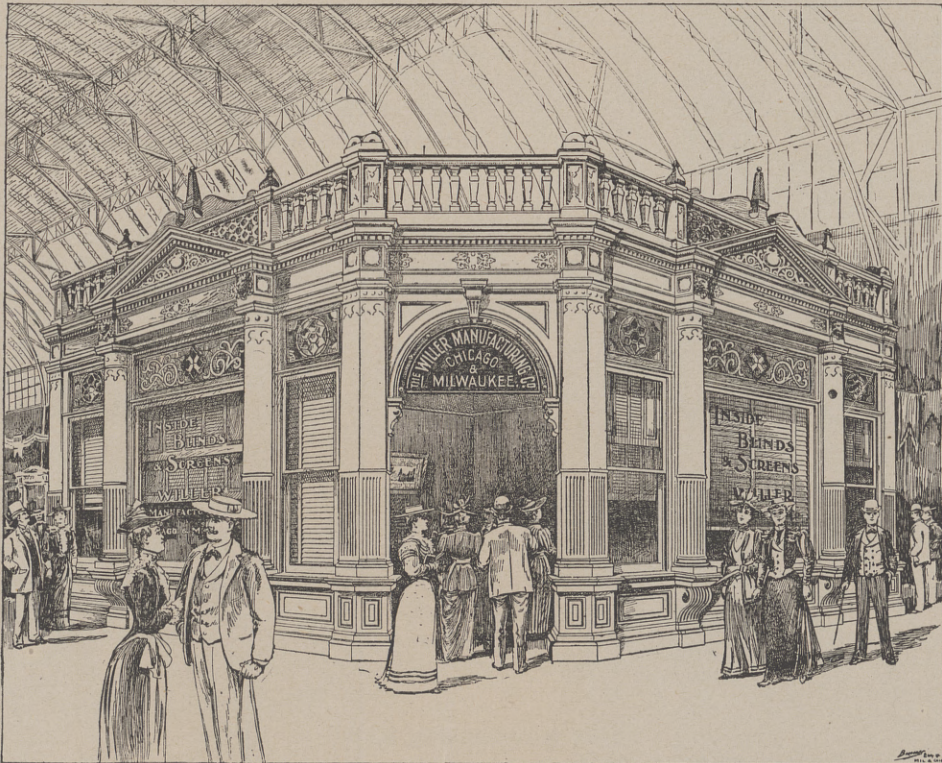
We present herewith an illustration of an exhibit at the World's Fair by the Willer Manufacturing Co., of Milwaukee and Chicago. This company is thoroughly well known all over the country as the manufacturers and producers of the Willer Sliding Blind, the first sliding blind put on the market possessing any real merit and meeting the demands of a discriminate public. Since then a number of other manufacturers brought out sliding blinds and copied the principal meritorious features of the Willer Blind and printed publications and illustrations of the company to an extent bordering on to and in some cases actually constituting depredation and piracy, and claiming to produce blinds equal and superior to any other, none of which however have reached the high standard for quality and merit attained by this company.

The sliding blind is the principal specialty produced by this company and is brought out by them in a variety of grades, finishes, etc., to suit the tastes and requirements of the wealthy and extravagant as well as the financially less fortunate and economical builders of houses.

Besides the sliding blind, the company has for years produced the old standard folding blind, and a special folding blind of their own, as well as custom made screen doors, sliding and stationary

SASH LOCK AND BURGLAR BOLT.

A new sash lock and burglar bolt have been brought out recently by the Gardner Sash Balance Company, 312 First National Bank building, Chicago. The sash lock consists of a horizontal lever so contrived as to clamp the upper and lower sashes firmly together. The window is not only locked but all annoyance of the rattling of sash in the wind is effectually done away with. The burglar bolt is a separate device attached to the side rail of the upper sash near the bottom rail. When the sash lock is in position the burglar bolt rests on the top of the lower sash and thus prevents the opening of the window. A double protection is thus given, as the window may be locked by the burglar bolt, even if the sash lock is not fastened. The enviable reputation of the Gardner Sash Balance Company in connection with their sash ribbon, pulleys and attachments is a guarantee of the excellence of these new devices. Their aluminium bronze and steel sash ribbon for sash hanging has received the indorsement of a surprisingly large number of first-class architects throughout the entire country during the last four years. The ribbon is designed especially for use with heavy windows, as well as for lighter work in the better class of residences. It is adapted to weights of from 5 to 5,000 pounds. The ribbon will not break and cannot get out of order. Used on the Gardner patent pulleys, it runs smoothly and noiselessly, even with heavy iron sash of 350 pounds each.



window screens for all class of buildings. They have lately also added a Venetian Blind Department to their business and are producing the blind in a variety of styles; the English venetian blind as well as a new sliding venetian blind, which latter blind is not drawn up by cords but operates the same as a sliding blind, being balanced by springs or weights or by both and remaining in any desired position in the window.

All of the company's various products are shown in a well designed pavilion, located on the gallery in the north end of the Manufacturers and Liberal Arts Building, which everybody, especially the architects, builders and contractors of the country, who may visit the World's Fair, is cordially invited to examine.

The company's factory and office is in Milwaukee, Wis., and their branch office at Chicago is room 25, Adams Express Building, 183 and 185 Dearborn street.

The General Electric Company has framed and ready for distribution about the fair a number of announcements printed in large type informing the public that this company furnished to the World's Fair all the electrical apparatus used in the construction of the Fair, the generators and motors for the Intramural elevated electric railway, the storage batteries and appliances for the electric launches, the apparatus for the electric fountains, the electrical equipment for the battleship "Illinois," the electrical apparatus for the moving sidewalk, and all the appliances for the Edison tower of light in the Electricity Building.

The Haines, Jones & Cadbury Company, of Philadelphia, have just issued a new Sanitary Catalogue. The volume is an exceedingly handsome one, bound in cloth, 13½ x 10½ inches, and contains 216 pages of the very best enameled paper, on which are illustrated the many sanitary specialties manufactured and imported by this old established firm. The engravings give a most complete list and description of porcelain lined baths, both with wood rim and roll rim, the latter showing the outside enameled in ivory and gold bands. The catalogue should be in the hands of every plumber, and will be sent on application.

The Hunnicutt & Bellingrath Co., of Atlanta, Ga., is doing the steam heating work in the new Marion hotel, which will be opened October 1. This company is also furnishing the combination gas and electric fixtures for the Marion hotel and for the Second Baptist Church in Atlanta, and the steam-heating and galvanized iron cornice work for Clemson, College, Fort Hill, S. C.

It is said that manufacturers who send their goods to Brazil with catalogues made out in the language of the country and all weights and measures in the metrical system, have much greater success than those who persist in sending catalogues in the English language and adhering to the English system of weights and measures.

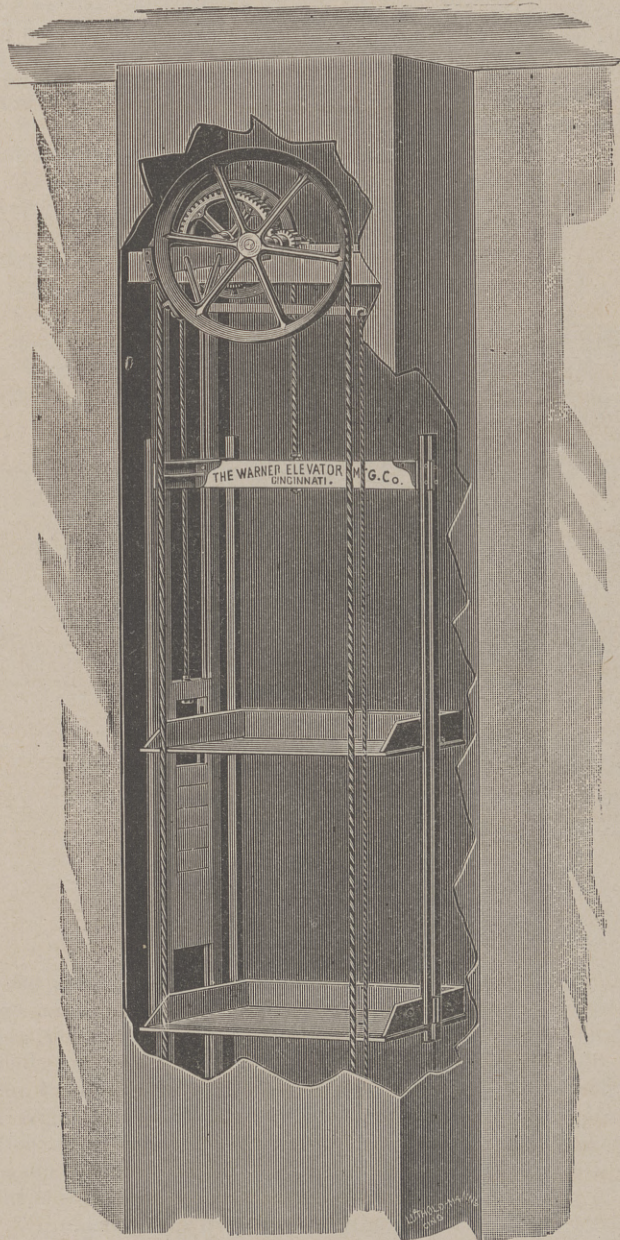
E. T. Barnum, Detroit, Mich., has just issued a new 120 page catalogue, showing improved and artistic designs, covering almost every conceivable form of wire and iron work for building and decorating purposes, such as roof cresting, weather vanes, tower ornaments, iron and wire fences of every description.



THE WARNER ELEVATOR MANUFACTURING COMPANY.

The accompanying illustration represents an improved dumb waiter or residence elevator recently placed on the market by the Warner Elevator Manufacturing Co., of Cincinnati, O. It is built expressly for residences, restaurants, hotels, saloons, etc., for conveying light loads to different floors. The machine is provided with an automatic brake attachment for which is claimed that the moment operator ceases to pull upon the hand rope the automatic brake instantly applies itself securely holding the platform at any point, thus avoiding the necessity of applying brake by hand and preventing any possibility of platform running down at a rapid speed and resulting in damages.

The platforms are made entirely of first quality hard wood,



well ironed and braced, oiled and nicely varnished, while the center shelf is made removable to admit articles of height. They are suspended by a wire cable and counterbalanced with an adjustable weight, which can be made heavier or lighter, as may be required.

Special attention is invited to the gearing of these machines, which is cut from the solid wheel, rendering the machine noiseless in operation, as well as very easy to operate. The shafts are of cold rolled steel, and work in truly turned boxes fitted with oil holes.

The machines are furnished complete ready to erect, all the overhead machinery being placed on the frame, tested and shipped just in this manner, while the platform guides, which are made of sugar tree, are bored and counterbored ready to be fastened to the well hole, and the only work necessary to erect them is to secure the frame to the well hole.



# Bessemer Paint

"Stands Better Than Others."

---U. S. War Department.



## PORCELAIN ENAMEL PAINT

For Interior Finish.  
Impermeable and acid proof.  
Does not crack or turn color.

"Finish superior to anything."—Thorn & Hunkins Lime and Cement Co., St. Louis, Mo.

"Subjected to sulphurous fumes shows excellent results."—Phil. & Reading R. R. Co. Phil.

For Iron Construction.  
For Tin or Shingle Roofs.  
For Fences and Exposed Wood Work.

**Rinald Bros.**

30 & 32 N. 6th Street,  
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**Rinald Bros.**

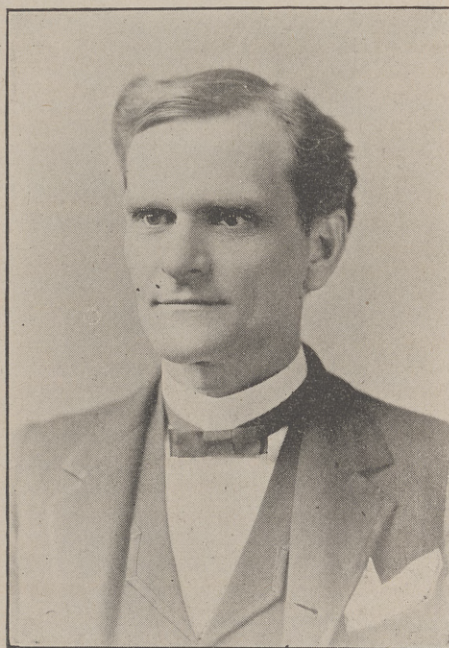
30 & 32 N. 6th St.

**Philadelphia.**

### A NOTABLE BUSINESS MAN.

MR. GEORGE W. HARRISON, GENERAL MANAGER FRANKLIN PRINTING AND PUBLISHING COMPANY, ATLANTA, GA.

MR. HARRISON is a member of a distinguished Georgia family, whose individual members have been prominent in political and social fields, and is himself an example of what energy, self-reliance, and a broad-minded business policy will accomplish. His duties are manifold and exacting, demanding a clear head, decision of character and versatility of talent. His duties include those of general manager of the Franklin Print-

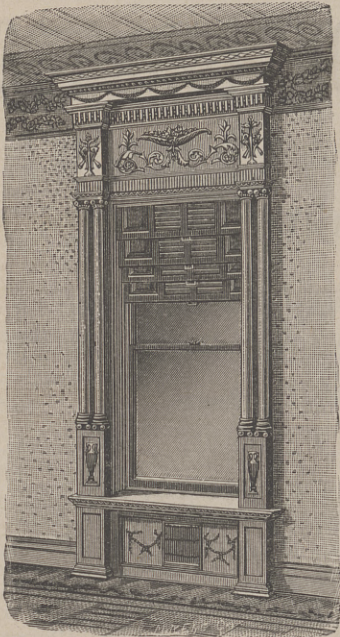


ing and Publishing Company, of Atlanta, the largest establishment of its kind in the South, and that of State printer, an office of honor and great responsibility; also for a number of years chairman of the Statistical Committee of the Chamber of Commerce, chairman of the Postal Committee of the Commercial Club, one of the Governor's staff officers, with a title of lieutenant-colonel of cavalry, and manager of THE SOUTHERN ARCHITECT, one of the most popular and widely circulated trade journals published.

Mr. Harrison is also business manager of several journals devoted to agriculture, education, etc., that are prominent in public opinion.

In private life Mr. Harrison is liberal in his views pertaining to social and religious matters, and is a prominent member and a deacon of the First Presbyterian church of Atlanta, and considered one of the first citizens of that city, and prominent among the most successful business men of the South.—*Intending Builder, Rochester, N. Y.*





# Inside Blinds and Screens.

## THE Willer

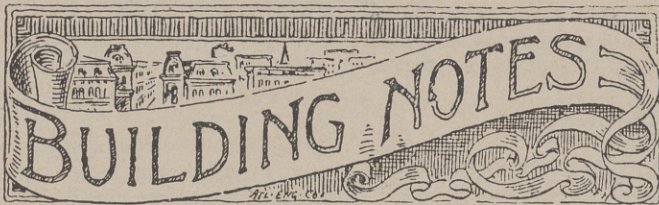
SECTIONAL SLIDING BLINDS,  
PATENT FOLDING BLINDS,  
REGULAR FOLDING BLINDS,  
WINDOW SCREENS and  
SCREEN DOORS.

CATALOGUE A.—  
Pocket Edition. Free.  
CATALOGUE B.—  
Window Screen and Screen Door  
Edition. Free.  
CATALOGUE C.—  
Architects' and Builders' Edition.  
50 Cents.

Willer Manufacturing Co.,

MILWAUKEE, WIS.

Send 16 cents in stamps for the Willer March, for the piano, dedicated to this Company by Director Chr. Bach.



### BUSINESS BLOCKS.

**New Orleans, La.**—Messrs. Sully & Co., architects, have prepared plans and specifications for a nine story office building on corner Carondelet and Common streets.

**Paris, Tex.**—The government will erect a new United States court house and postoffice here. For particulars see item under the head of Public Buildings.

**Baton Rouge, La.**—Mr. J. M. Parker has accepted plans for the erection of a small brick store here.

**Baltimore, Md.**—Geo. C. Haskell, architect, has completed plans which have been accepted for a large and elegant new theatre. Messrs. Ferguson & Bro. are the contractors.

**Atlanta, Ga.**—Golucke & Stewart have prepared plans for a \$30,000 office building of brick and stone to be erected on Forsyth street for the owner, Henry Alexander.

**Augusta, Ga.**—M. F. Bell has the contract for new store fronts for Landrum & Butler.

**Warrenton, Mo.**—Burke & Weiss, St. Louis, have made plans for hotel building for the Central Wesleyan College at this place. No contracts let yet. Will want all modern hotel appliances.

**St. Louis, Mo.**—John Brockmeier will erect a three story brick store building; L. Wissman, contractor, on Market, between Second and Third streets, to cost \$6,000. The plans were prepared by C. E. Illsley.

### BRIDGES.

**Richmond, Texas.**—The county commissioners will build a bridge over the Brazos river. Address county commissioners, Fort Bend county, Texas.

**Hendersonville, N. C.**—A new iron bridge over the French Broad is under consideration, and will probably be erected. The Bridge Commission have the details of the matter in hand.

### CHURCHES.

**Macon, Ga.**—The contract for the East Macon Presbyterian church has been let to Keely & James, contractors.

**Aiken, S. C.**—The colored Baptist church burned recently will be rebuilt of brick, with tin roof. Address John Laird, architect, for particulars.

**Greenville, Ga.**—The Presbyterian congregation here have decided to erect a new handsome church here. Plans not yet drawn.

### MILLS AND FACTORIES.

**Spartanburg, S. C.**—The Standard Oil company has purchased a lot in Spartanburg, and will erect three oil tanks with a capacity of 25,000 gallons each. Spartanburg will be made a bulk station and distributing point.

**Augusta, Ga.**—Mr. Bryan Lawrence in conjunction with others will erect a large packing house and refrigerating establishment on the outskirts of the city. Plans not yet drawn.

### MILLS AND FACTORIES.

**Eufaula, Ala.**—John T. Davis, Columbia, Ala., wants to correspond with parties experienced in the erection of cotton mills run by water power.

J. L. Jay, of Albany, has the contract for the \$50,000 addition to the Eufaula Cotton Mills.

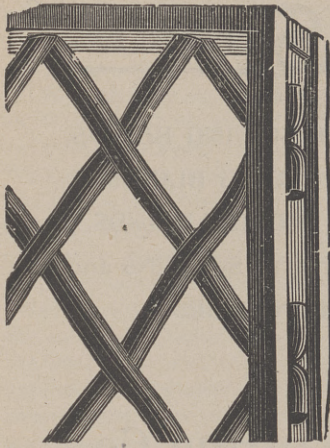
**St. Louis, Mo.**—Herf & Trechs Chemical Co. will erect four story brick factory on Iron Mountain Railway and Prospect street; cost \$6,000; C. E. Illsley, architect; H. Sudhotter, builder.

### PUBLIC BUILDINGS.

**Paris, Texas.**—Treasury Department, Office Supervising Architect, Washington, D. C., September 15, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 16th day of October, 1893, and opened immediately thereafter, for all the labor and materials required for the interior finish, etc., for the United States courthouse and post-office building at Paris, Texas, in accordance with the drawings and specification, copies of which may be had at this office or the office of the superintendent at Paris, Texas. No convict labor nor the product of any convict labor will be allowed in the work. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any and all bids, or to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the interior finish, etc., of the United States courthouse and postoffice building at Paris, Texas," and addressed to Jeremiah O'Rourke, Supervising Architect.

**San Francisco, Cal.**—Treasury Department, Office Supervising Architect, Washington, D. C., September 15, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 20th day of October, 1893, and opened immediately thereafter, for all the labor and materials required for the steam heating apparatus and pipe tunnel at the United States Marine Hospital, San Francisco, California, in accordance with the drawings and specification, copies of which may be had at this office or the office of the surgeon at the Marine Hospital, San Francisco, Cal. No convict labor nor any product of convict labor will be allowed in the work. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any or all bids or to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to





The above cut shows how wires are secured to grooved iron frame.

# ATLANTA WIRE AND IRON WORKS CO.

MANUFACTURERS OF

## Wire Railings, Iron Window Guards

### AND WIRE ELEVATOR ENCLOSURES.

For Banks, Stores, Offices and Public Buildings, Wire Balcony Railing and Fences, Iron Tree Boxes, Bedsteads, Sidewalk Grating, Hay Racks, Stall Partitions, Etc.

64 North Broad Street,

ATLANTA, GA.

the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for steam heating apparatus and pipe tunnel at the United States Marine Hospital, San Francisco, Cal.," and addressed to Jeremiah O'Rourke, Supervising Architect.

**Sioux City, Ia.**—Treasury Department, Office Supervising Architect, Washington, D. C., September 5, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 28th day of September, 1893, and opened immediately thereafter, for all the labor and materials required for the excavation, foundations, basement and area walls, basement columns and first floor construction for United States courthouse, post-office and custom house at Sioux City, Iowa, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Sioux City, Iowa. No convict labor nor the product of any convict labor will be allowed in the work. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any and all bids or to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for excavation, foundations, basement and area walls, etc., for the United States courthouse, postoffice and custom house at Sioux City, Iowa," and addressed to Jeremiah O'Rourke, Supervising Architect.

#### RESIDENCES.

**St. Louis, Mo.**—F. W. Folk, architect, has prepared plans for a residence for W. D. Barter on Grand avenue, to cost \$8,000; contract not yet let.

Also for A. W. Newton, on Ashland place to cost \$16,000; contract not yet let.

**Baton Rouge, La.**—Wm. R. Millen, architect, has prepared plans for residences for G. D. Von Pheil for \$3,800.

**Nashville, Tenn.**—Robert Sharp, architect, has had plans accepted for brick dwelling for T. J. Ryan, to cost \$4,000.

**Wilmington, N. C.**—An error was made in reporting in last issue a dwelling to cost \$3,500 for E. Sprout, plans by J. F. Post. Name should have been T. E. Sprunt, and work executed by Joseph Silvey.

**Atlanta, Ga.**—Mr. W. H. Burden will erect a handsome residence to cost \$20,000 on Peachtree street. Plans not yet accepted.

**Atlanta, Ga.**—Golucke & Stewart have prepared plans for a residence for J. M. Harden on Pulliam street, to cost \$6,000.

#### RESIDENCES.

**Augusta, Ga.**—The following residences are reported by M. F. Bell:

Geo. R. Lombard, three one story frame dwellings on McKinnie street.

A. E. Merlin, one story frame dwelling on DeLorgle avenue.

S. Mura, one story frame dwelling on Robert street.

J. T. Young, one story frame on Marbury street.

**Atlanta, Ga.**—George W. Laine has made plans for frame residence for J. B. Cook; cost \$2,500.

Residence for E. M. Kilby; cost \$2,500.

Residence for Robert Zahner at Moreland park, to cost \$3,000.

**Crescent, Ga.**—George W. Lane, Atlanta, Ga., has made plans for residence for P. W. Brewster, to cost \$3,000.

**New Decatur, Ala.**—George W. Laine, Atlanta, has prepared plans for a frame parsonage for the Congregationalists, to cost \$2,500.

F. W. Schofield, one story frame on Gwinnett street.

Mrs. C. Ferry, two story frame dwelling on Twiggs street.

B. C. and C. A. O'Donnell, one story frame dwelling, King street.

Mrs. Pauline Swenny, one story frame dwelling, Reynolds street.

Belle Kelly, one story frame store, Anthony street.

Brown & Dugan, addition to frame dwelling, Campbell street.

P. D. Owens, one two story and one one story frame dwellings, Talcot and Calhoun streets.

Miller Nobles, one story frame dwelling, Maxwell street.

T. C. Bennett, one story frame dwelling, Walker street.

E. J. Bryant, two story frame dwelling.

Geo. H. Howard, two story frame dwelling, Telfair street.

**St. Louis, Mo.**—James Gueren will erect a seven room brick residence corner Cook and Taylor avenues; cost \$4,500; C. E.

Illsley, architect; Cook & Casey, contractors.

John Feith will erect seven room brick residence corner Oregon and Chippawa avenues; cost \$3,000; C. E. Illsley, architect; H. Buckman, contractor.

B. Sebastian will erect two sixteen room brick flats, corner Twelfth and Sidney streets, to cost \$8,000; C. E. Illsley, architect; Thomas & Meig, contractors.

M. J. Gantri will erect two story brick dwelling, corner Russell and Vandewater avenues; cost \$4,000; C. E. Illsley, architect.

Theo. Davis will erect two story brick flat corner Taylor and Delmar avenues; cost \$3,500; C. E. Illsley, architect; F. Paulus, builder.

Mrs. Mary Sheele will erect a two story \$3,500 brick flat corner Marine and Chippawa street; C. E. Illsley, architect; J. L. Hartford, builder.

H. B. Huilsmann will erect a brick flat; cost \$6,500; corner Twelfth and Anna streets; C. E. Illsley, architect; Bins & Stoff, contractors.

G. Hullinger will erect three eight story brick dwellings, Eleventh, near Barton street, to cost \$3,800; C. E. Illsley, architect; Fred Wench, builder.

Pacific Express Co. will build brick freight house corner Eighteenth and Poplar streets, to cost \$26,000; C. E. Illsley, architect; B. Weber & Son, contractors.

J. C. Butler will erect two story, nine room brick dwelling corner Cook and Grand avenues; cost \$8,000; architect, C. E. Illsley; builder, D. J. Dempsey.

Rose Jacoby will erect two two story brick flats corner Olive and Spring avenues; cost \$1,000; C. E. Illsley, architect; H. Abraham & Co., builders.

M. E. Burbact will erect an eight room brick residence corner Clemens and Goodfellow avenues; cost \$4,500; C. E. Illsley, architect.

Henry Delay will erect two two story brick residences corner Evans and Sarah streets; cost \$4,000; C. E. Illsley, architect.

E. Fisher will erect two seven room brick residences corner Castleman and Vandeventer avenues; cost \$3,500; C. E. Illsley, architect.

Mrs. Hummelson will make a two story addition to residence corner Seventh and Utah streets; cost \$6,000; C. E. Illsley, architect; F. Paulus, builder.

W. Campe will erect a brick flat corner Compton and Powhattan streets; cost \$3,700; C. E. Illsley, architect; Zwicki & Doerflinger, builders.



# GEORGIA MARBLE

## THE BLUE RIDGE MARBLE CO.

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Are prepared to execute, in the best workman-like manner, all kinds of marble work such as Wainscoting, Tiling, Mantels and Ornamental Work for Buildings.

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Waveland, Miss.—A new public school will shortly be built here on a lot presented to the town by Mr. H. Dudley Coleman, of New Orleans. Mr. C. Bordage, of Waveland, will be the principal.

### HOTELS.

Harmony Grove, Ga.—Messrs. Power & Williford are preparing to erect a new hotel opposite the depot.

### LIST OF RECENT PATENTS

Issued by the U. S. Patent Office and Reported by Edward C. Weaver, Patent Attorney, Washington, D. C.

501,622. Fireproof Partition. Thomas A. Lee, Kansas City, Mo. Filed April 25, 1892.

501,659. Ice-Runway. James Patterson, Jr., Albany, N. Y. Filed March 21, 1893.

501,683. Gaining Machine. Frank Johnson and Carl A. Johnson, Rockford, Ill. Filed March 1, 1893.

501,702. Combined Door Spring, Check and Latch. Charles Winckhofer, Newark, N. J. Filed April 1, 1893.

501,720. Vault or Skylight Cover. James Jenkinson, Brooklyn, Assignor to Jacob Mark, New York, N. Y. Filed January 3, 1893.

501,763. Laundry-Tub. Edward C. Brunner and William J. Renkel, Cleveland, Ohio. Filed November 9, 1892.

501,774. Carpenter's Square. Frank D. Dunnington, Buckhannon, W. Va. Filed April 3, 1893.

501,786. Spring Hinge. Frederick W. Hoffer, Freeport, Ill. Filed August 1, 1891.

501,794. Artificial Stone. Marc Lafont, Paris, France. Filed April 13, 1892. Patented in France, England and Canada.

501,801. Gate. George W. Mauk, Williamsburg, Pa. Filed June 16, 1892.

501,809. Sash Holder. Phillip S. Riddle, Woodstock, Va. Filed February 24, 1893.

501,810. Blind Slat Tenon. Louis Steets, New York, and Ulrich Bohren, Brooklyn, N. Y. Filed July 7, 1892.

501,813. Swinging Gate. George F. Voight, Lower Lake, California. Filed September 7, 1892.

501,888. Artificial Stone. Marc Lafont, Paris, France. Filed May 15, 1893. Patented in France, England and Canada.

501,892. Slat Tenoning Machine. Calvin D. Marsh, Williamsport, Pa., assignor to the Rowley & Hermance Company, of Pennsylvania. Filed October 10, 1892.

501,896. Opera Chair. Micheal McAneny and Fremont Stansbury, Denver, Colo., assignor of one-third to John Swank, same place. Filed June 20, 1892.

501,950. Collapsible Ladder. Ansel Leo, London, England. Filed July 5, 1892. Patented in England.

501,969. Cable Arch Support. Samuel D. Stephens, West Shoals, Ind. Filed June 15, 1891.



501,503. Self-operating Weather Strip. John H. Graham, Kansas City, Mo. Filed July 11, 1892.

501,538. Revolving Storm Door. David G. Rush, Chicago, Ill. Filed December 5, 1892.

501,604. Air-warming Furnace. Geo. W. Johnston, Farmington, Ill. Filed March 13, 1893.

501,618. Bracket. William H. Higgins, Forest City, Pa. Filed December 30, 1892. This invention consists in the use, in wooden framework, of metallic sockets, bolts, etc., taking the places of mortices and tenons, in connecting horizontal timbers and braces with vertical timbers.

501,622. Fireproof Partition. Thomas A. Lee, Kansas City, Mo. Filed April 26, 1892. This is a partition or wall formed by the combination of tiles, mortar or cement, and tension rods.

501,637. Roof Block. Joseph Whomes and Frederick J. Gillmore, Los Angeles, Cal. Filed April 24, 1893.

501,643. Roof Connection for Ventilating Pipes. Burnett B. Bignall, Aurora, Ill. Filed March 11, 1892.

501,668. Wood-graining Machine. John Shannon, Pittsburg, Pa. Filed May 16, 1892.

501,696. Shutter Fastener. Charles J. Sandberg, St. Louis, Mo. Filed January 21, 1893.

501,211. Storm-step for Outdoor Stairs. William Moller, New York, N. Y. Filed October 26, 1891.

501,215. Apparatus for Mixing Asphalt Cement. Julius Schubert, Brooklyn, N. Y. Filed July 14, 1892.

501,278. Wall or Ceiling Covering. Edward Jansen, New York, N. Y. Filed August 11, 1892.

501,341. Fence. John S. Hamilton, Marysville, Ohio. Filed November 23, 1892.

501,346. Sash Weight. Frank H. Homan, Patchogue, N. Y. Filed January 21, 1893.

501,348. Extensible Trestle. George H. Jaques, Riverside, Cal. Filed February 3, 1893.

501,368. Flushing Tank. Joseph H. Savill, Philadelphia Pa. Filed January 25, 1893.

501,396. Safety Clutch for Elevators. Charles E. Alpro, Philadelphia, Pa. Filed January 26, 1893.

501,397. Sheathing Lath. Andrew Baldwin, Viroqua, Wis., Filed April 3, 1893.

The Joseph Dixon Crucible Company is the only concern in the world which manufactures every article of which graphite is a component part. With the invention by Joseph Dixon in 1827 of the plumbago crucible, the crucible business was revolutionized. At that date began also the manufacture of Dixon's Stove Polish Foundry Facings and the development of an industry now grown to enormous proportions and fittingly represented by the Joseph Dixon Crucible Company.

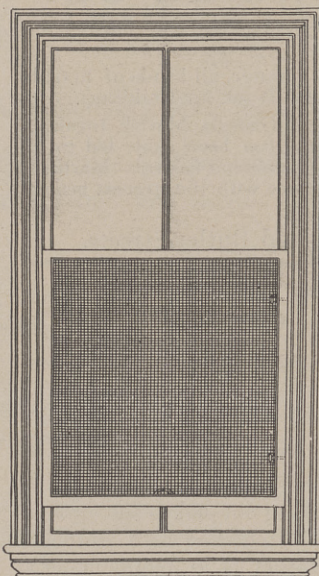
This company has two exhibits at the Fair. One is of Dixon's American Graphite Pencils in the northeast gallery of the Manufacturers' Building, and the other, covering all the other articles

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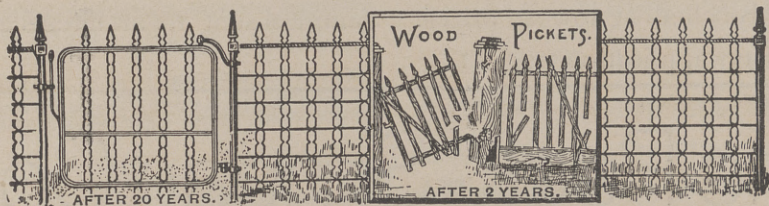
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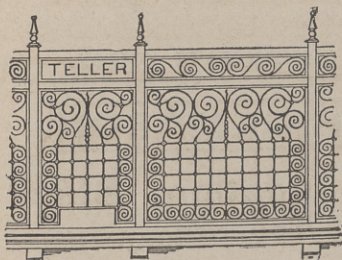
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manufactured by them, in the northeast gallery of the Mines and Mining Building. The Pencil exhibit occupies a space ten by fourteen feet. In the center of this space stands a low mahogany table surmounted by a pyramid of velvet which is covered with pencils arranged in graceful and beautiful designs by an artist employed specially for that purpose. Over this pyramid stands a rosewood and plate glass case. Two ornamental facades of turned and carved mahogany front the space, which is separated from the neighboring spaces by means of Japanese bead curtains, suspended from carved grilles.

The space is lighted at night by means of two gilt electroliers of six 16-candle power lights each.

The company's exhibit of general and special graphite products in the Mines and Mining Building occupies a space twenty-five by twenty-eight feet. A very handsome cherry facade fronts the space, while the sides are hung with tastefully arranged portières. Crucibles, retorts, ladles, stopper-heads and nozzles, graphite boxes, phosphorus chargers, resistance rods and devices, incandescent filament forms and other special goods made of graphite are shown in upright cabinets. In another case is shown the development of an electrotype plate, in which process the use of graphite is an essential. In still another case are shown over fifty varieties of graphite for as many different uses and under as many different names, such as graphite for lubricating, stove polish, foundry facings for green, dry or loam castings, core wash, ingot mold wash, shot and powder glazing, electrotypes, gilders' use, hatters' use, rubber packings, piano and organ actions, "potleading" yachts for crucibles, lead pencils, paint pigment, lubricants, etc.

There are also shown samples of graphite from all the principal sources from which that article is obtained. One very fine sample from the Island of Ceylon weighs nearly 300 pounds. Comfortable chairs, with writing desk and stationery for the free use of those who may desire it, give to the exhibit an air of genial comfort and ease.

The Dixon Company were the first to complete their exhibit, and their promptness brought forth the following letter from the chief of the department:

Office World's Columbian Commission,  
Director General of Exposition,  
Chicago, Ill., U. S. A., May 20, 1893.

Mr. John A. Walker, Vice-President  
Joseph Dixon Crucible Co., Jersey  
City, N. J.:

DEAR SIR—I am in receipt of your esteemed favor of the 17th instant, and in reply beg to state the department is much pleased with the promptness with which your exhibit in this building was installed and completed through the supervision of your able assistant, Mr. McNaughton, and also to heartily congratulate you on making a display which is in every particular attractive and dignified, and which fully illustrates in an interesting and instructive manner the graphite industry.

Yours very respectfully,  
F. J. V. SKIFF, Chief.



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RAILROAD AND NASHVILLE, CHATTA-  
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The Velvet Vestibule leaving Atlanta at 10:30 o'clock A. M., every day, carries baggage car, two elegant coaches and Pullman sleeper Atlanta to Chicago without change, arriving at Chicago at Dearborn street station via the Chicago and Eastern Illinois Railroad at 8:58 A. M. the next day, making the time Atlanta to Chicago twenty two hours and twenty-eight minutes!

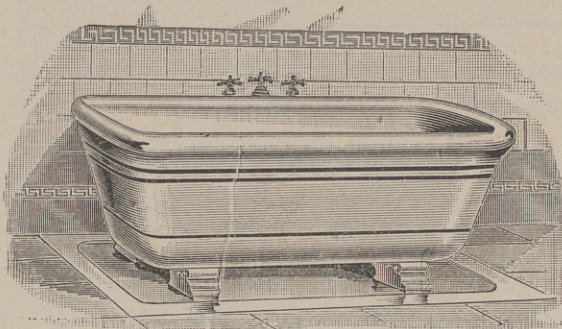
There is no extra charge for passengers on this train who do not desire sleeping car accommodations, and as the train goes through solid Atlanta to Chicago, there is no transfer of passengers or baggage. Passengers take dinner at Chattanooga, supper at Nashville, and breakfast on elegant dining cars before arrival at Chicago.

This train goes via Nashville, Evansville and Terre Haute to Chicago. The World's Fair Flyer No. 4, leaving Atlanta at 8:20 P. M., runs solid Atlanta to Nashville, and carries Pullman Palace Buffet sleeping car Atlanta to Chicago without change. This sleeper goes via Nashville, Louisville and Pennsylvania lines from Louisville to Chicago. Passengers holding tickets reading via Louisville will have an opportunity of stopping off at Mammoth Cave, the world's wonder.

In addition to above service, Western and Atlantic train No. 2, leaving Atlanta at 8 A. M., and No. 6, leaving at 2:15 P. M., make all local stops. Passengers purchasing tickets via Western and Atlantic Railroad have the privilege—on both the long limit tickets and the fifteen day tickets—of stopping over at Chattanooga, Louisville, Cincinnati, Mammoth Cave, Evansville or Indianapolis by depositing their tickets with authorized parties at either of the above points. Other information in reference to stopover will be furnished by ticket agents. Sleeping car rates are \$4.50 for double berth or \$9 for section. Parties not desiring to take sleeping car for daylight ride can secure accommodations from Nashville upon application.

Write to or call upon R. D. Mann, ticket agent, 4 Kimball house, Atlanta; C. B. Walker, ticket agent, union depot, Atlanta; Joseph M. Brown, traffic manager; Chas. E. Harman, general passenger agent, Atlanta, Ga.—From Atlanta Constitution, August 21, 1893.

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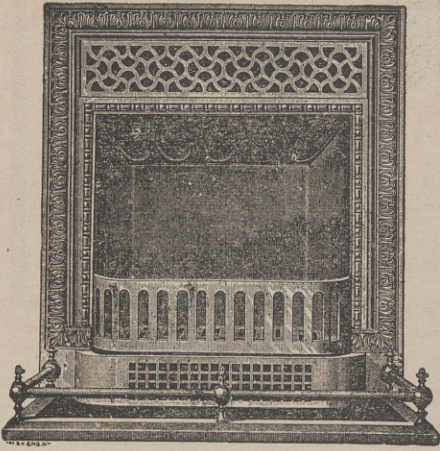
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Berger Bros., 237 Arch street, Philadelphia, will mail their new catalogue to tanners, roofers and plumbers.

The steady progress of improvement in the construction of high speed safety passenger elevators has created such universal interest and comment that we have no doubt that the new catalogue which has just been issued by the Graves Elevator Co., of Rochester, N. Y., will be of value to every architect or builder contemplating their use. This catalogue is up to date in every particular, illustrating and describing most every description of elevator and many new devices for speed, safety and economy. The several systems described are as follows: Hydraulic, electric and steel screw passenger and freight elevators, also the Patent Spur Gear Freight Elevator. In the last pages of the catalogue is published a list of over 2,600 actual users of the Graves elevators, comprising hundreds of the best business houses, hotels and office buildings in the country. The Graves elevators have been in use since 1875; very limited at first, but of late years the sales have increased so rapidly that they are constantly making additions to their already large plant, having just finished a substantial five-story building, 60x100, to be used for building cars. Those contemplating the purchase of elevators will find it to their advantage to send for one of these catalogues.

Berger Bros., of Philadelphia, have for more than fifteen years past made a close study of the eave-trough question with respect to the supports necessary for holding troughs in their place. As a result, they strongly advocate the system of hanging troughs made in long sections of whatever metal employed for use in buildings of all classes. This advocacy is based upon the single stipulation that such gutters be provided with suitable and efficient supports properly put in place. Such supports, they claim, are to be found in the Berger Patent Eave-Trough Hangers, which have now been before the public for some time,

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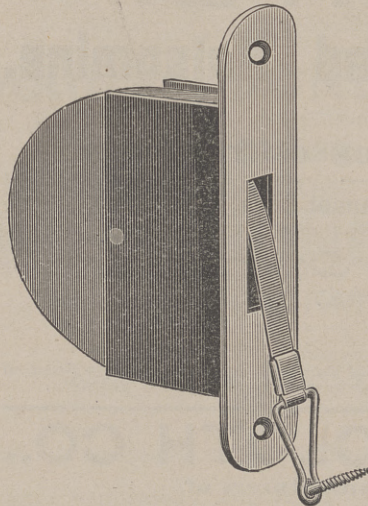
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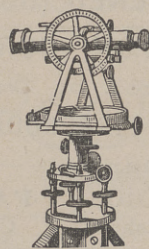
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They are applied just like an ordinary sash pulley and are very attractive. The suspending band being aluminum and the frame steel makes our BALANCE indestructible.

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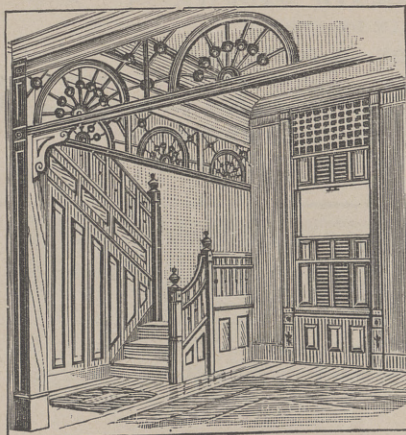
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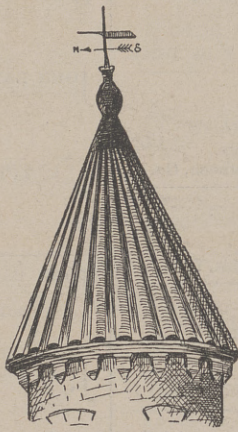
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and with which many of our readers are already practically familiar. These hangers have the advantage of being simple in construction, readily understood by the mechanics whose work it is to put them in place, and also of being easily adjusted. One of the features which particularly recommend these hangers for general use is the fact that they clasp the trough from below and employ no bars, straps or wires extending across the upper portion of the trough, and which under certain circumstances proves to be a great impediment to the free flow of water.

Mr. Patillo, secretary of the Southern Lumber Manufacturers' Association, says the South produces more lumber than any other section of the United States, and that the lumber production of the United States is in dollars and cents as much as that of coal, iron, and cotton combined.

The Cortright Metal Roofing Co., of Philadelphia, prepared, specially for distribution at the World's Fair, reduced facsimile of their celebrated "Victoria" shingles. They are of enameled tin, and are both unique and interesting. The Victoria shingles are made in 10x14 and 7x10 inches, are quite ornamental and largely used for roofing churches, depots, residences and schools. The company still have some of the souvenirs left and will cheerfully mail a set to any address on receipt of request.

We think the time has arrived to advise our friends to anticipate their wants of barbed and plain wire, wire nails, etc. The mills throughout the country have been closed for the past sixty days, and their stocks have been so reduced as to make it impossible for them to ship orders with any degree of promptness. The stocks in jobbers' hands were never so broken, and few could to-day ship as sorted orders in full.

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The main offices of the Steel Bath Manufacturing Co. are corner Michigan Avenue and Bay City Crossing, Detroit, Mich.

We have just received "Hand Book of the Builders' Exchange of Buffalo, New York," containing a History of the Exchange, List of Officers, Certificate of Incorporation, Charter, By-Laws, etc., of the Exchange Association and Association Exchange, Officers and Directors of the National Builders' Association; Building Laws of the City of Buffalo; Plumbing Laws; Mechanic's Lien Law of New York; Mechanic's Lien Against Municipal Property; Code, Uniform Contract, Rules of Mason's Measurements; Hints to Contractors; Construction Standard for New Business Buildings; Specifications for Standard Fire Doors and Shutters; New York State Factory Laws; Apprenticeship Laws; Rules and Requirements for Electrical Work; Architects' Directory, Duties and Charges; Alphabetical and Classi-

fied List of Members of the Builders' Exchange, with an "Up-to-Date" Map of Buffalo and Environs, compiled by J. C. Almendinger, Secretary.

This is a very thorough little work and is a credit to the exchange and a convincing monument of the industry and painstaking of the secretary.

On page two of this issue of THE ARCHITECT will be found an advertisement of Mr. C. R. Snyder, of 41 N. Broad Street, Atlanta, Ga. Mr. Snyder is the pioneer building material and supply dealer of Atlanta and enjoys an excellent reputation over the entire South as an enterprising and reliable business man. Mr. Snyder's long experience and splendid business connections enable him to compete at any point in the South on all kinds of plastering materials, fire-clay and brick, Portland and domestic cements. Mr. Snyder is also owner of Hill's Patent Inside Sliding Blinds for the State of Georgia and can furnish the same upon short notice, as they are not kept in stock. The reputation of the Hill blind is too extensive to need comment here; it is sufficient to say that it has long been known as one of the best inside blinds in the market. Address for circulars, prices, etc.,

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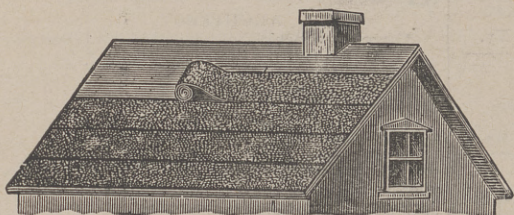
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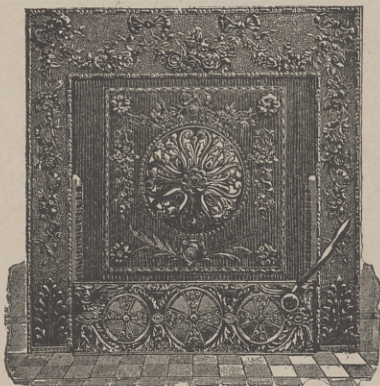
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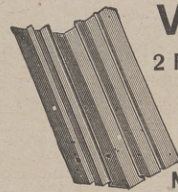
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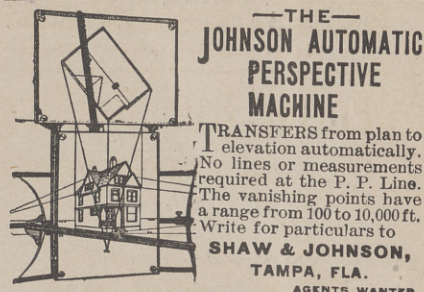
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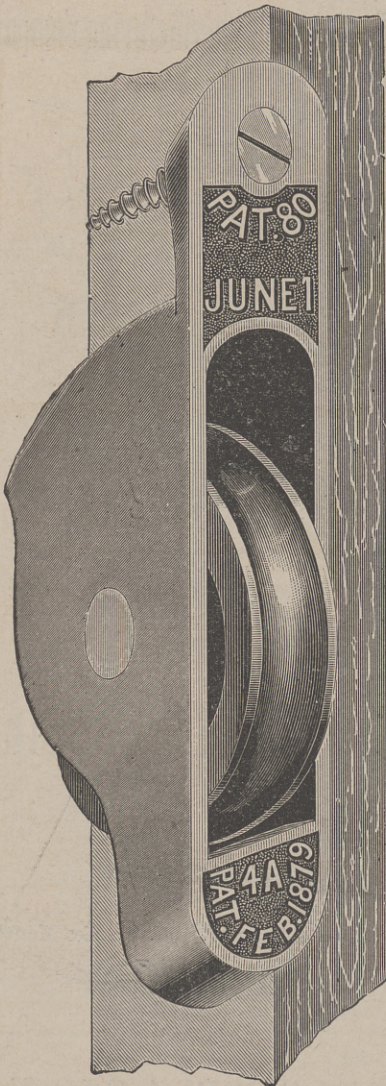
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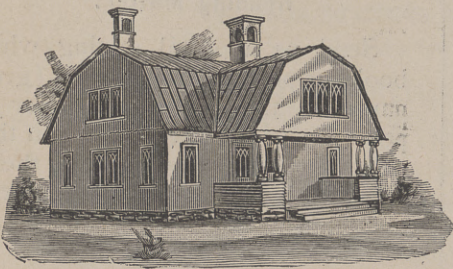
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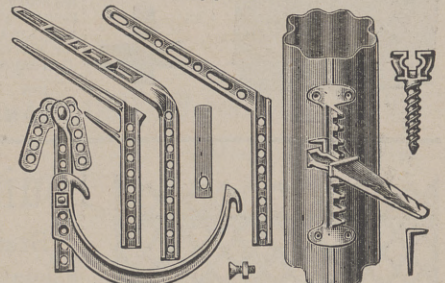
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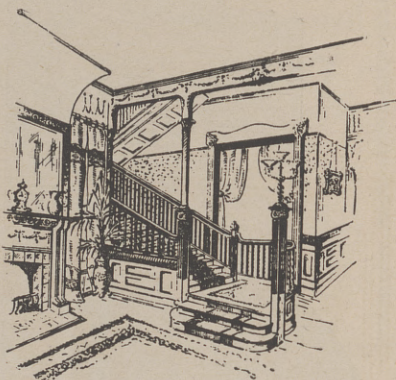
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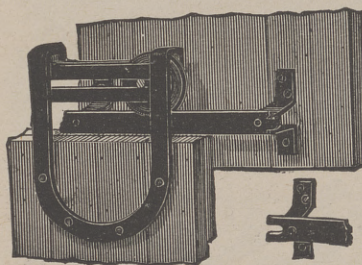
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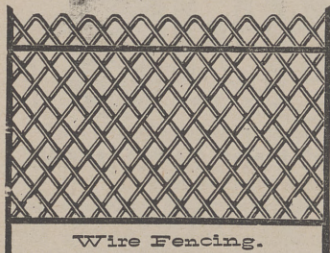


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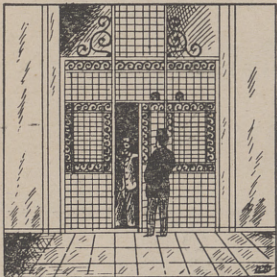
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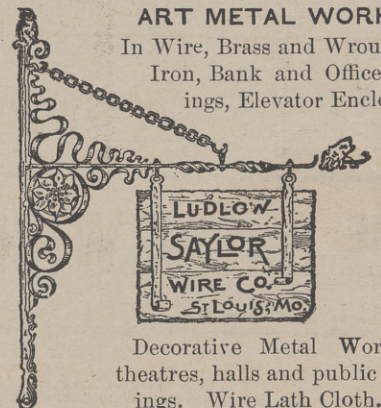
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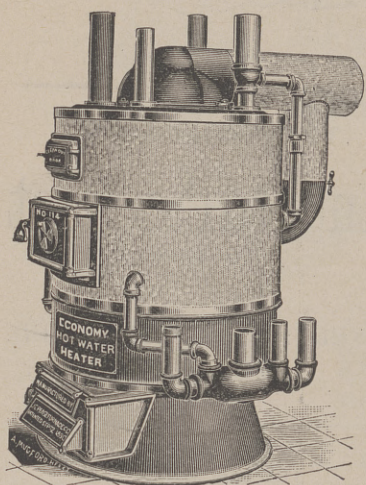
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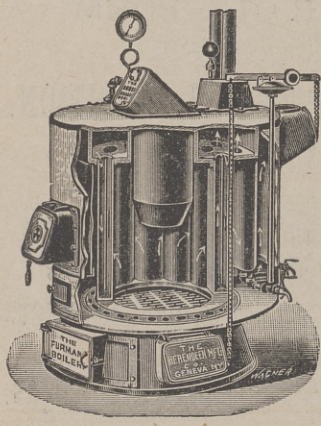


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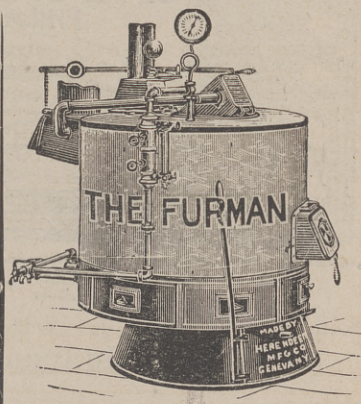
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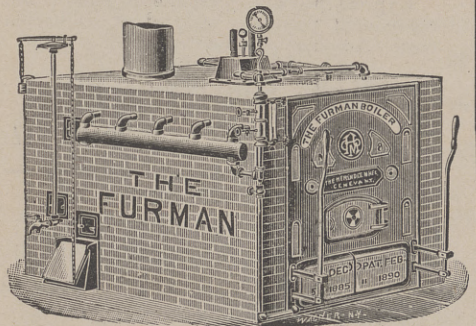


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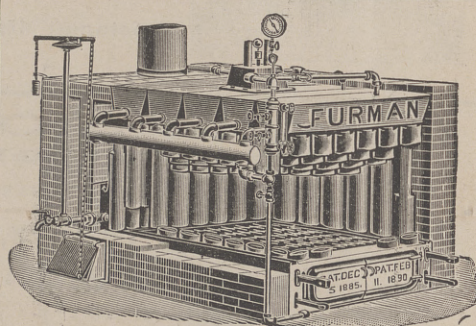
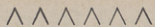
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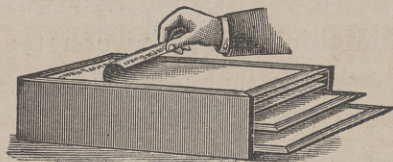
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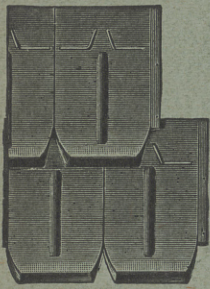
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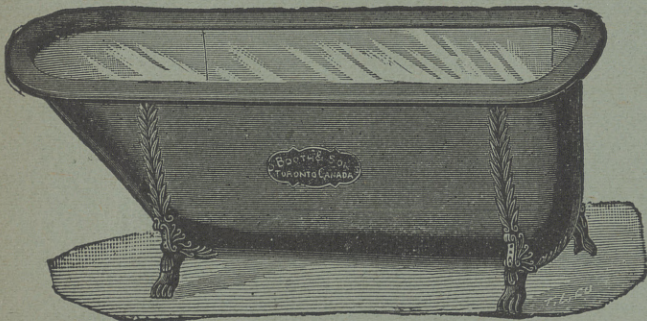
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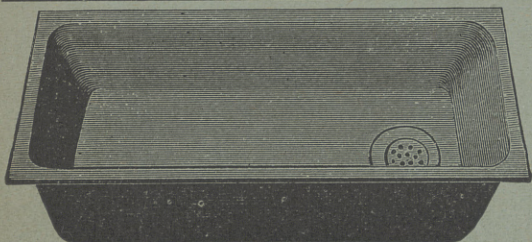


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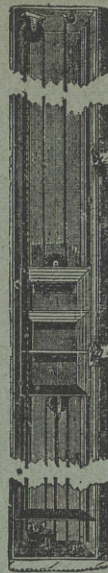
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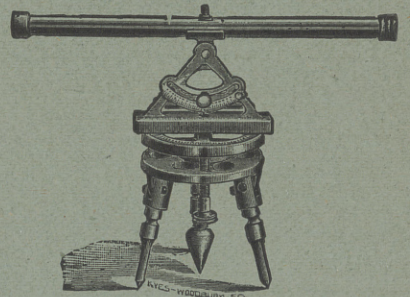
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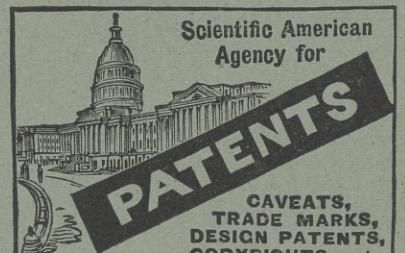


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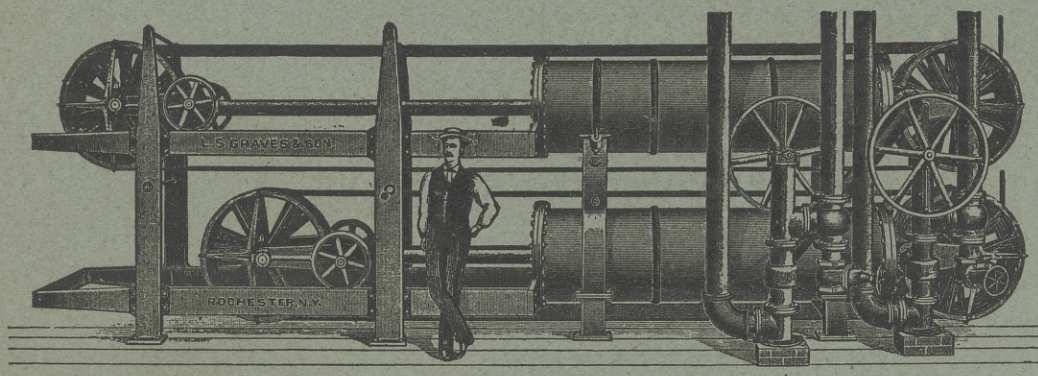


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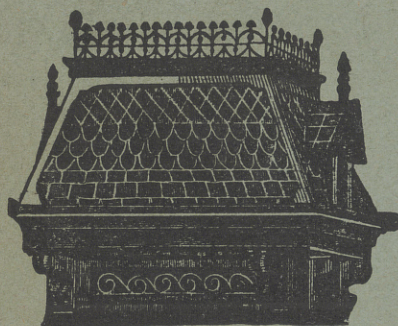
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