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THE INLAND ARCHITECT AND BUILDER

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Architects and Builders throughout the West will confer a great favor on the Editor of this Journal by sending him news pertaining to the craft in their section of the country, particularly items of new buildings.

THE INLAND ARCHITECT AND BUILDER will spare no endeavor to furnish valuable news and information to those interested, professionally or incidentally, in the planning, building, decorating and furnishing of homes or commercial or public structures. A variety of attractive illustrations will be presented in each number, the best of engraving and printing contributing to their production.

THE INLAND ARCHITECT AND BUILDER has a larger circulation in the West than any building journal in the country. Advertising rates are very reasonable, and will be made known on application. We take pleasure in directing attention to the high character of our advertisements.

MIFFLIN E. BELL, of Des Moines, Iowa, was appointed supervising architect of the United States, October 30. Though we still hope the senate, in view of the many irregularities which have made this office notorious in the past will take some action in the matter, and if possible place it in charge of a topographical engineer, with liberty to employ the best architectural talent of the country at the rates and under the same general rules that govern private enterprises, we are glad to see the place temporarily filled by a Western architect, and one who has a clean record and a reputation for constructive ability such as is enjoyed by Mr. Bell. He is a native of Chester county, Pennsylvania, and though but thirty-six years of age, has seen considerable service. He commenced his work in the West as a pupil of A. H. Picquinard, the architect of the Illinois state capitol, and was assistant superintendent of that building under Mr. Picquinard. When that architect died in 1876, while building the Iowa state capitol, Mr. Bell succeeded him in the superintendence, which position he held at the time of his appointment. The Southern Illinois State Penitentiary was also

planned and built by him, and through his connection with the work on public buildings he became intimate with many public men, both of Illinois and Iowa.

THE hold the question of Sanitation is taking on the public mind is exemplified by the notable meetings that are being held among all civilized peoples, who seem to have suddenly awakened to a realization of its grave importance. Among the most recent of these meetings, worthy of more than a passing notice, is the Sanitary Congress at Glasgow, Scotland, just closed, which for thoroughness of detail and scope of operation excelled all similar public demonstrations that had preceded it. The instigators and managers thereof seem to have comprehended the fact that the subject was one that, at least, included all professions and trades which in any degree contribute to the construction of the houses people live and work in, and consequently provided for the extensive exposition which took place of almost everything that forms a part of the homes and workshops of the people—not omitting decorations and embellishments in their recognition that healthfulness may be subserved by catering to the mind as well as the body. One of the most interesting features of this memorable occasion was the series of papers and popular lectures that were delivered by eminent sanitarians and architects for the purpose of educating the people to a better understanding of sanitation and enlisting their coöperation. Among the contributors and speakers of these papers and lectures were Dr. Carpenter, Professor Robinson, Roger Field, Professor De Chamount, Professor Humphrey, Professor Roger, T. Smith, Messrs. Burdett, Cole, Collins, and a number of others equally eminent. In a very interesting paper on "London Dwellings" by President Professor Smith, read before the engineering and architectural section, the key-note of all the other papers and lectures was struck when he came to treat of the Public Health Act and said: "But if we could once create a demand for healthy houses, and induce people to look out for sanitary provisions as they now looked out for pretty wall-papers when taking a house, the battle would be won."

FROM Professor Smith's very practical contribution it would appear that old London was comprised mostly of houses that were unhealthy owing to defective sites, bad drainage, bad plumbing, defective water storage, absence of proper air space, dampness and foulness of basements, unsoundness of attics and upper stories that were neither damp-proof nor heat or cold proof, and the narrowness of the thoroughfares; a statement which was verified by Dr. Richardson, who cited some deplorable instances, and declared "amongst the better-class houses things were often even worse than in those of the lower class." In the newer London, particularly in the suburbs, a better state of affairs existed, but even there, as the professor said, there was an ample field for years to come for the energies of those who devoted themselves to the pursuit of sanitary science, the diffusion of sanitary knowledge, and the performance of sanitary work. Another equally interesting paper on "Middle-class Dwellings" in London, by Mr. Burdett, which referred particularly to those of modern construction and from which is to be gathered, London is not exempt from a class of builders with which the American public in the large cities are well acquainted. The conundrum with Mr. Burdett, in contemplating this class of structures, was "Why did

not the lower middle-classes combine in self-defense and crush their present oppressors—the pothouse politicians and the jerry builders?” and in that way put an end to one criminal source of sanitary ills. Perhaps the most encouraging incident of this congress was the large and enthusiastic audience that assembled in St. Andrew’s Hall to hear Dr. Carpenter’s lecture to the working classes.

THE State of Georgia proposes to have a new State House at Atlanta, which is to be a marvel, not only as to style, but magnitude, or quantity of structures for the amount expended; that is, if the Board of Capitol Commissioners shall succeed in securing the builder, workmen and materials at the same low rate they propose to secure the designer, viz, at about one-seventh the usual fees for such service. We glean this interesting information from the invitation of the Governor and ex-officio chairman extended to the architects of the country to furnish plans for this proposed structure on the following conditions:

“1. An elevation of each side of the building, on a plan of each floor—drawn in black ink only, and to a uniform scale of one-eighth of an inch to the foot. 2. A perspective view of the building, which may be done in colors. 3. Detailed and accurate specifications of material and workmanship, so arranged that the work may be let to one contractor or to several contractors for the various classes of labor and material. 4. Such other drawings as may be necessary to fully elucidate the plan. 5. A detailed estimate of the cost of the building, which must not exceed \$800,000. For the accepted design under these conditions, the Commissioners will pay the sum of \$3,500, provided the architect furnishing it will deliver within a reasonable time after the award is made, complete and satisfactory detail and working drawings. The Commission reserve the right to reject any and all plans.”

Could anything be more alluring than this invitation to architects to compete with each other at one-seventh the customary compensation, and that, too, with the magnanimous prospect of having all their plans returned to them? Could anything be more generous than to offer the successful competitor just as much more money as it would cost any one of them to get up the plans as proposed? In seriousness: our position of opposition, as expressed on different occasions, to this meretricious practice of boards and commissions of procuring plans for public edifices does not arise from any disposition to faultfinding, but from the fact that this pernicious practice is the positive source of the many abortions in public architecture which have been inflicted upon the people of this country, and which should meet with a speedy end; for the public edifices of the country are meant for all time, and the people who pay for them are entitled to the best that architecture and the concomitant arts are capable of producing. No reputable and capable architect is ever led into a competitive snare where an insufficient tender is made the bait for his skill and experience, particularly where the merit of his work is to be decided by the whims or partisanship of incompetent city councils, county commissioners and state boards, but it is in this way that the designing and construction of our asylums, court-houses and state houses have fallen the prey to mediocre talent, which has certainly done its worst in doing its best. In our last number we furnished a typical example of the working of this competitive system for the procurement of architectural plans in the recital of the action of the management of the St. Louis Exposition and Music Hall Association. We do not allege that a like dishonorable course will be pursued by the Capitol Commissioners of Georgia, yet, as they have no higher conception of the trust imposed upon them than to ask the architects of the country to make an actual outlay of from \$1,200 to \$1,500 in getting up such plans as they specify, with only the possible chance that some one of them may win the dubiously promised award of \$3,500, it would seem they were not overburdened with architectural wisdom—not sufficiently so, at least, as to disarm suspicion among the qualified architects of the country and make them think it worth their while to lay aside their other more lucrative work to take a chance in this Georgia lottery scheme.

HOW reputable architects are treating this question we are able to illustrate, the occasion being another similar scheme for securing architectural services for nothing, and which also comes from the South, though the disease is and has been epidemic in every state in the Union where public buildings have been projected. This latest invitation comes from New Orleans, addressed to architects, and is for “competitive designs for the main building of the World’s Industrial and Cotton Exposition.” It reads:

I. Preliminary plans and specifications for the main building of the World’s Industrial and Cotton Centennial Exposition, to be erected at New Orleans, Louisiana, will be received at the office of the Director-general, No. 74 Baronne street, New Orleans, until 12 o’clock noon on the 24th day of November, 1883.

II. The principal material of said building shall be wood, and it must have a capacity of not less than 1,000,000 square feet of available exhibiting floor space, including gallery exhibiting floor space, and cost not exceeding \$250,000, completed, ready for occupancy, exclusive of the outside and inside painting and plumbing.

III. Drawings will consist of ground plans drawn to a scale of 1-16 of an inch to a foot; elevations and sectional drawings done in India ink exclusively and drawn to a scale of 1/4 of an inch to a foot, and one perspective.

IV. The Board of Management reserves the right to reject any or all the drawings and specifications, and it is expressly understood that the Board will not pay for any drawings and specifications so rejected.

V. The premium given to the successful competitors will be considered as in full payment for the services rendered, and said designs shall be the property of the Board, which may or may not use the same, in whole or in part, at pleasure.

VI. It will be optional with the Board of Management whether or not the successful competitors shall be employed in the construction of the building.

VII. Premiums will be awarded to the plans accepted, not exceeding three in number:

To the first plan accepted.....	\$1000
To the second plan accepted.....	500
To the third plan accepted.....	250

VIII. All designs and drawings not accepted will be returned. Preference will be given to those making the nearest approach to the requirements stated, and in their plans combining convenience, requisite exhibiting space and beauty of design.

IX. Each architect submitting a design may personally appear before the Board to explain the same, and answer detailed questions to construction and as to the reliability of estimates.

X. If the work cannot be let within or approximating the cost herein indicated, the award shall be considered null and the competitor shall be entitled to no compensation.

XI. Blue print of ground approaches and line of river distance, together with local price lists of material and cost of labor, will be furnished on application to the Director-General.

E. A. BURKE, Director-General.

Approved: E. RICHARDSON, President.
New Orleans, October 25, 1883.

We were so fortunate as to secure a copy of the answer sent by a leading Western architect upon receipt of this invitation, and it voices the sentiments of every reputable architect in language rarely expressive and to the point. It is a letter that every director of public building should “paste in his hat” for future reference:

MR. E. A. BURKE, New Orleans.

October 29.

DEAR SIR,—The invitation to architects to send in competitive designs for the main building of the World’s Exposition to be erected in New Orleans, is before me. Allow me to say that I have never seen a much better arranged scheme to defraud the architects who may be green enough to send in plans under the proposition laid down in the articles 4, 5 and 6 of your circular. Competitions are bad enough when carried out in good faith, but when a board of managers start out with the proposition that they will take all that is sent in and pay nothing for it in return, it is about time to put a stop to the practice.

With the best wishes for your success and thanks for your thoughtfulness in sending me an invitation.

I remain yours, etc.,

P.S.—Allow me to say that for the sum of \$2,500 paid to me I will be pleased to make you general drawings for the proposed building.

Yours,

As we have said we do not seek to show the rottenness of the system of so-called competition, and the enormous assurance displayed by the public men, who seek to obtain the benefits of the highest and grandest of human arts without even giving compensation for the mechanical work involved, to be ill-natured, but that a better, more honest and pure method may be adopted, not alone that the architect may be paid for his work, but that public buildings may bear the stamp of genius, where now the majority of them display a conception worse than mediocre.

THE enormous strides the building industry of the United States has made since the commencement of the present decade, and, more particularly, during 1882 and 1883, is shown by *Bradstreet’s Report* for the week ending October 6th, which is largely devoted to statistics, showing the amount of building that has been done during the time in the principal cities of the Union. Very much difficulty lay in the way of gathering complete information, as out of over fifty cities canvassed by their correspondents, only sixteen were able to furnish complete records owing to the absence of the statistics at the cities themselves. From this statistical exhibit Chicago leads all the other cities of the country, with the

exception of New York, in the amount of money expended in building enterprises. The order in which the cities ranked according to this report for the eight months of 1883, based on the gross amount, in round numbers, expended by each in building, is as follows:

New York	\$37,207,112	Kansas City	\$2,000,000
Chicago	12,780,000	Grand Rapids	2,000,000
Cincinnati	11,000,000	Toledo	1,420,000
St. Paul	9,580,000	Pittsburg	1,420,000
Minneapolis	8,310,000	Memphis	1,300,000
Cleveland	3,750,000	Indianapolis	1,250,000
New Orleans	3,000,000	Burlington	1,100,000
Denver	3,000,000	Milwaukee	1,070,000
Des Moines	2,750,000	Nashville	1,050,000
Detroit	2,580,000		

The number of buildings given for this expenditure of \$12,785,440 by Chicago, in the eight months of 1883, is 2,421 as against 2,637 for the year of 1882, at a cost of \$15,832,000.

THE St. Louis Institute of Architects held a special meeting on the 29th ult., to adopt resolutions drafted by a committee of five members embodying the sentiments of the Institute, regarding the action of the Exposition board of Directors, relative to the selection of an architect, the details of which we gave and commented upon last month. The general feeling among the architects is that the action of the board was an outrage, but the fear of offending prospective clients seemed to influence some against coming forward and boldly expressing their opinions. The resolutions were as follows:

WHEREAS, The St. Louis Exposition and Music Hall Association did, on the 18th day of April last, issue a circular inviting all the resident architects of this city, and five non-resident architects, to submit designs for an "Exposition and Music Hall Building," said circular containing among other articles, the following:

Second, That from those presented by residents, seven, which shall be considered the most meritorious, shall be accepted and awarded five hundred dollars (\$500) each, and the five presented by non-residents shall each be awarded the same amount. All designs for which five hundred dollars (\$500) is paid, shall be the property of the Association.

Fourth, The architect who is successful shall not receive five hundred dollars, but he shall be engaged as architect and superintendent, and shall be paid for performing such duties, the usual commissions, as adopted by the American Institute and St. Louis Institute of Architects.

Sixth, That said plans and specifications shall be placed under seal in the hands of the secretary, on or before July 2, 1883, and they shall be without names or marks to indicate by whom made.

AND WHEREAS, The above circular was issued for the information of architects, and to be by them interpreted according to their rules of practice.

AND WHEREAS, It is the interpretation of the "St. Louis Institute of Architects," that all architects who delivered their designs on or before the 2d day of July last, to the said St. Louis Exposition and Music Hall Association, did enter into a contract with said Exposition and Music Hall Association, in good faith—as binding as any written paper signed by both parties could make it; that every article of the circular issued by said association should be fulfilled, provided the said architects had carried out their part.

AND WHEREAS, It is the interpretation of said Institute of Architects that said Exposition Hall Association was in honor bound to select from the twelve awarded designs one that would be the most meritorious entitling the author to compensation as architect and superintendent.

Therefore, be it resolved, That whether the most meritorious design of the twelve was or was not selected, the said Exposition and Music Hall Association, by its subsequent acts, did break their contract with the architects submitting designs; in this, that if the most meritorious was not selected, they broke their contract, because by their circular accepted by the architects they were in honor bound to make such selection, and if they did not make such selection, they broke their contract by not giving the successful architect employment and compensation as architect and superintendent.

Be it further resolved, That we, the St. Louis Institute of Architects, consider the decision of said Exposition and Music Hall Association as unfaithful, according to their printed circular, unwarrantable according to architects' rules of practice, and unworthy their character as gentlemen and business men of this community; said characters being an additional and a strong inducement to the fair terms of the circular, for the architects to go into the great labor, study and expense of competitive designs.

Be it further resolved, That the foregoing preamble and resolutions be spread on the minutes of this Institute.

We congratulate the St. Louis Institute of Architects upon their denouncement of the treatment they received at the hands of so-called business men, and hope it will deter them, individually and as a body, from having anything in the future to do with competitions where the full price is not tendered for each and every plan before it is drawn.

AN accident, that in its serious quality was only limited by its early discovery, is reported from Des Moines, Iowa. It seems that electric light and telephone wires, by contact started a fire, which resulted disastrously to the latter. Where the wire of the electric light crossed the wire of W. W. Kimball & Co's telephone, the current passed to the latter wire and burned their instrument very badly; and, from thence, it was communicated to the Fort Dodge instrument and to the telephone in use by Giles Williams, with the same disastrous result to the instruments. The current also played sad havoc at the Exchange, burning out one section and causing delay

and confusion. Water was poured on the switchboard and the current shut off. When this was done a great many business men were left in the dark. As the use of electric lights is destined to become as general as that of the telephone, extraordinary care should be used in the placing of the wires, as, aside from the direct damage resulting from a contact of wires and the consequent fire, a series of such accidents will prejudice the public against the use of electric lights and retard the introduction of this incomparable light-producing system. The thorough insulation of all exposed wires is the only sure method of preventing accidents, and this should be insisted upon in every case.

AS from time to time we have looked upon the many "small flats" that are being hurried up in almost every division of the city, we have thought how soon the builders thereof will have occasion to repent at their leisure the grave error committed in building them. Seemingly, every recognized rule for health and convenience has been violated in their construction; everything else lost sight of save the amount of rentals that may be obtained from a given space. The façades of most of them are made comely enough, but when this is said, all commendation must cease. The entrance and passage-ways to these structures are so small, one wonders how ordinary household furniture may be got through them; while the diminutive bedchambers, scarcely large enough to admit a chair in addition to a bedstead, are suggestive of a polluted atmosphere, capable of producing any character and quality of disease. Such tenements may be speedily filled by the advertised bait of "all modern conveniences," but the occupants will not be long in discovering truthfulness would have made the rendering "all modern inconveniences!" When wiser builders come to the front, as surely they will, and build houses for rental in which health and home comforts are made possible, then these "economical flats" will be deserted by their tenantry as rats desert a sinking ship, and the owners be left in the plight of the man who drew the elephant in the lottery. Believe us, this "small flat" contagion, in its present shape, is a misfortune, and the speedier the epidemic dies out the better.

AN opportunity is offered for a display of the genius of American artists in the furnishing of designs for a proposed national monument to the memory, and in honor, of the late President, James A. Garfield, to be erected in the Garfield plot in the cemetery at Cleveland, Ohio, which comprises two and one-half acres on the highest point in the cemetery. The monument is to be of granite and bronze, to cost \$150,000. The trustees of the Garfield National Monument Association decided at a meeting, held on the 18th ult., to issue to the artists of the country a circular inviting international competition on the following conditions: 1. All designs to be represented by models or drawings on a scale not to exceed one-twentieth of the proposed size, with estimates of cost. The trustees reserve the right to require any drawings they may judge desirable to be represented in a model before the final decision. 2. Each design to be accompanied by a sealed letter inclosing the name and address of the artist. Upon the envelope shall be a mark or motto similar to a mark or motto upon the model or design to identify the artist and his work. 3. The designs to be presented by the 1st of May, 1884, in the city of Cleveland, Ohio, free of cost to the trustees, to be exhibited in rooms provided by the trustees, but at the artist's risk; to be removed by the artist within two months after a decision is announced, or otherwise to become the property of the trustees. 4. The designs will be publicly exhibited for at least

two weeks prior to the decision. 5. The trustees are at liberty to reject any or all designs presented. 6. For the design possessing the highest merit in the judgment of the trustees, \$1,000 will be paid; for the second, \$750; for the third, \$500. 7. Designs for which premiums are awarded, to become the property of the trustees. 8. The monument to be erected in Lakeview cemetery, at Cleveland, Ohio, on a commanding eminence, some 130 feet above, and about one-half a mile from the entrance to the cemetery. 9. The monument to provide a receptacle for the remains of the deceased president, and a suitable vault for his family. 10. The monument not to exceed in cost, when completed, \$150,000. 11. The monument to be of granite of approved quality and color, and the emblems and statuary of bronze.

THE St. Louis Plumbers' Association have taken the right step and in the right direction in the appointment of a committee to inspect the leading work done in the city, and report on it to the association. The object in view is to expose bad work, and to discourage it as far as possible. If the carpenters', painters', masons', and all other guilds of the country, including the architects', would adopt a similar course of action, and the committees be loyal to the trust imposed, and the guilds to their committees, there would be no need of Building Inspectors, whose only observable work is drawing their salaries; for such loyalty, when dishonest work is unearthed, would make an impartial report, and, if done by a member, result in expulsion. Only let the public feel assured that a membership in any of the building guilds is a guarantee of capacity and integrity, and it will be prompt to discriminate in their favor and leave the botches to do the fitting work of conscienceless builders.

AFTER years of struggle with the pavement question in Chicago, the city authorities have come to the conclusion that the only reliable pavement is stone, and all the principal streets are being laid with this material. The favorite is granite, though Medina stone is largely used, and this, because of its hardness, combined with a "grit" which the granite does not possess, we are inclined to believe to be the better for paving purposes. It is strange that so much time and money should have been expended in experimenting with pine or cedar blocks, when the eastern cities solved the problem long ago; but in this the same unwarranted ignorance has been manifest as in the use of corner catch-basins, which has made a dangerous hole at every corner, necessitating an unsightly wooden apron over the gutter; and only since we called attention to the fact that the center of the block was the proper place for catch-basins have the city street-commissioners seen their error and begun to reconstruct the street drainage, though more than twenty years ago their attention was first called to the advantages of this method. In the same way the *Mississippi Valley Lumberman and Manufacturer* calls attention to the pavements now being laid in the rapidly growing city of Minneapolis, and says: "Granite and cedar block pavement is being laid down on the principal avenues, nearly half and half, as a test. After a study of the subject for some years and a close observation of the streets of most of the cities of the continent, we cannot but pronounce in favor of the stone. We even venture to predict that twenty years from to-day there will be no more of the sap and rotten cedar blocks laid on second-common boards left in Minneapolis." Why do not those in charge learn from Chicago's and other cities' experience and put down stone at once, for this is what they will be obliged to do in the end.

Architecture.

LECTURES DELIVERED AT THE UNIVERSITY OF CHICAGO.

BY W. L. B. JENNEY, ARCHITECT.

PART VIII.—ASSYRIA (CONTINUED).

NOTHING in Assyria has been found within one thousand years as old as the great pyramid of Egypt, nor any building as remarkable as the great temple at Karnac. Still the present civilization has derived far more from Assyria than from Egypt.

The Assyrians were an exceptional people, as full of restless intellectual activity as a Celt, reaching at everything; and although they existed for scarcely more than thirteen centuries as a nation, they found time to bequeath to the future civilizations so much that until recently was thought due to the Greeks or Romans, or to later civilizations, that Viollet Leduc speaks of Assyria as a *vast laboratory in which future civilizations were prepared*.

Fergusson divides the middle Asiatic countries during the period of their ancient greatness into three periods.

1. The ancient Babylonian or Chaldean period, ranging from B.C. 2234 to 1520, comprising the ruins of Wurka, etc., temples, tombs and private dwellings, all typical of a Turanian or Scythic race.

2. The Assyrian and second Chaldean kingdom, founded about 1290 B.C., and extending to the destruction of Babylon by Cyrus, 528 B.C., comprising all the buildings of Nimroud, Koyunjik, Khorsabad, and those of the second Babylon. An architecture essentially palatial without tombs and few temples, betokening the existence of a Semitic race.

3. The Persian, commencing with Cyrus and ending with Alexander B.C. 333, comprising Passagadae, Susa, Persepolis. An architecture copied from the preceding palaces, rock tombs and small temples, Aryan it may be, but of so strangely mixed a character that it is almost impossible to distinguish it from its sister styles.

These rock-cut tombs, and the splendor of the sepulchral arrangements generally, savor strongly of Scythic blood, and their gorgeous palaces, their love of art, the splendor of their state and ceremonial,—all point to feelings far more prevalent among Turanians than to anything ever found among kings or people of an Aryan race.

None of these styles are pure or distinct one from the other. The three races always inhabited the country as they do now, and as at this hour the Turkish governor issues his edicts in Turkish, Arabic and Persian, so did Darius write the history of his reign on the rocks at Behistun in Persian, Assyrian and the old Scythic or Median tongue. To this fortunate circumstance we owe our ability to read the Cuneiform or arrow-head characters in which the Assyrian inscriptions are written. The Assyrians had about three hundred distinct characters, the Persians only about forty, and each word is separated by a peculiar sign. The Persian language nearly resembles the Sanscrit.

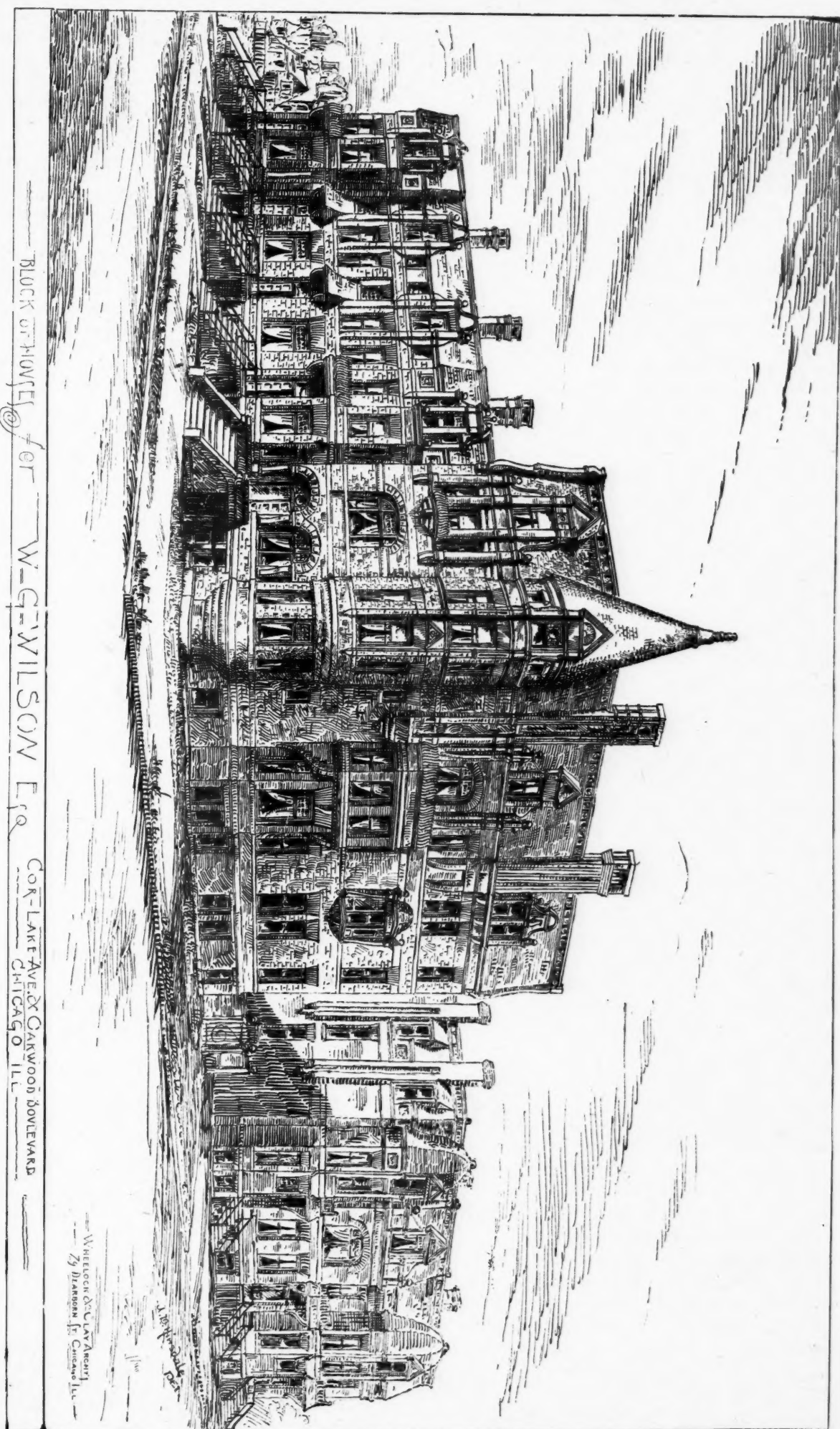
Prof. Grotefend, a learned German, by an ingenious train of reasoning and some fortunate guessing, was the first to obtain a clue to the value of the letters. Since then immense progress has been made, and now nearly every word in this Persian branch of cuneiform writing can be read with tolerable certainty.

The translation of one column greatly facilitated that of the other two. By carefully comparing proper names and other means familiar to scholars, the value of a number of Assyrian letters was soon ascertained, although from the great number of signs used—many being syllables and even whole words—and the language being then unknown, the progress was slow, but after long and persevering efforts considerable certainty in the reading has been obtained.

The Assyrian inscriptions are, in a branch of that family of languages, usually called the Semitic; that is to say, bearing a close analogy to the ancient Hebrew, Chaldean and Arabic, and it is by the help of these three languages that they have been successfully deciphered.

In the time of Daniel the Chaldean was spoken in Babylon, and was used by the Jews in their sacred writings. A corrupt dialect of this Chaldean is still spoken by the Nestorian Chaldean tribes who inhabit the mountains of Kurdistan and the neighborhood of the ruins of Ancient Nineveh.

It is not impossible that the valleys of the Tigris and the Euphrates were inhabited by man as early as the valleys of the



Nile, but as yet no record of such a people has been found. We have proof of a primitive people in France and England at a far earlier date than in Egypt or Assyria, but they have left no architecture, and only concern us as assisting in establishing chronology.

Unfortunately the works of Berosus, the only native historian of which we have any knowledge, reach us in even a more fragmentary condition than those of Manetto, the Egyptian. Berosus was a priest at Babylon about the time of Alexander. He left his native country for Greece, and was so much admired by the Athenians that they erected a statue to his memory.

The most successful attempt to restore the text which has been made is that of Herr Gutschmid, which is thought by Fergusson and others to be very near the truth. Rejecting the first dynasty of eighty-six Chaldeans and their 3,480 years as merely expressing the belief of Berosus that the country was inhabited by a Chaldean race for a very long period before the Median invasion, which event he places at 2458 B.C., with Nimrod the first King of the Third Dynasty, 2234 B.C., and ends with the conquest by the Persians under Cyrus, 538 B.C.

From this we see that the whole of the old civilization in Egypt under the pyramid-building kings had passed away before the dawn of history in Assyria or Babylonia—(Fergusson).

This kingdom, founded by Nimrod, is the great kingdom afterward known as that of Nineveh. For six centuries and a half they were the great people of Asia, and during the latter half built all those palaces which have only so recently been discovered.

About 625 B.C. the kings of Babylonia founded a second empire which lasted only 87 years, when the country is conquered by Cyrus, 538.

The first kingdom was established near the mouth of the Euphrates, and flourished there for centuries before it was superseded by the kingdom of Nineveh.

(To be continued.)

The Value of Type in Art.

JOHN W. ROOT.

NOTHING is more perplexing to both the artist and the layman than the status of art criticism. At present it is, for the most part, purely empirical, depending, in each instance, upon the personal whim of the critic. Many evils flow from this. Artists are not only discouraged, but also befogged, and hence do not attain as good results; but laymen, having no just basis of criticism, extend their patronage at random. Of course, there are admirable *critiques* on each branch of art, and by careful reading and observation any man may become a competent critic in any one department. But in order to accomplish this result he will be compelled to reject much that he reads, because every critic has his own opinion about each work of art, and these opinions are often contradictory. There are but few general principles confessed by every art critic, and one of these is that all art work should have in its methods special reference to natural principles. Let us look at these natural principles in a few of their manifestations, bearing in mind that Nature has within a few years received new revelation through modern science, and that the general attitude of art to science is one of at least covert hostility. The principles thus obtained from Nature we will find to underlie all good art of every sort—painting, sculpture, music, architecture, or any other.

That great natural principle which will be found most important is *Adherence to Type*. By *Adherence to Type* is meant not only natural insistence on the unity of each created object, but persistence in certain solutions of given problems. Once the theory of creation has been ascertained of any class of created beings, and it will be found that in all details it has been faithfully worked out, not fully in the individual, but entirely in the class; yet it is not on the surface alone that Nature manifests this preference for adherence to types: In structure it is more manifest. In general it will be found that once a solution of a given problem in structure is obtained, there is a manifest disinclination to solve it in a new way, provided the conditions remain the same. The various solutions of the questions vary by almost imperceptible degrees, as in the course of evolution the conditions vary. A

moment's consideration of the development of the foot or hand will show the full significance of this. And what is true of structure is also true of all decorative devices, which are only structural conditions somewhat remotely removed.

Now this adherence to type is one of the best tests of every good work of art, and forms one of the most infallible bases of criticism. Of every good art work it is true that the first thing necessary is to put before one's self the conditions of the problem to be solved, and then trace the consistency of the various solutions followed by the artist. Cheap effects are so easy and so immediate in their impression on the uneducated, that any artist is constantly tempted to forego this more valuable and more subtle consistency. But this adherence to type is the enduring quality, because it includes so much. It indicates in the artist fixedness of purpose, self-command, repose, strength, profound study; in short, all the qualities of a great creative mind. One will, or course, recall a thousand great pictures, great chiefly because in every line, in every color, is manifest one indwelling purpose, and this greatness is as characteristic of small motives in art as of great ones, and can be as plainly discerned in a picture of a wayside hedge as of a Madonna.

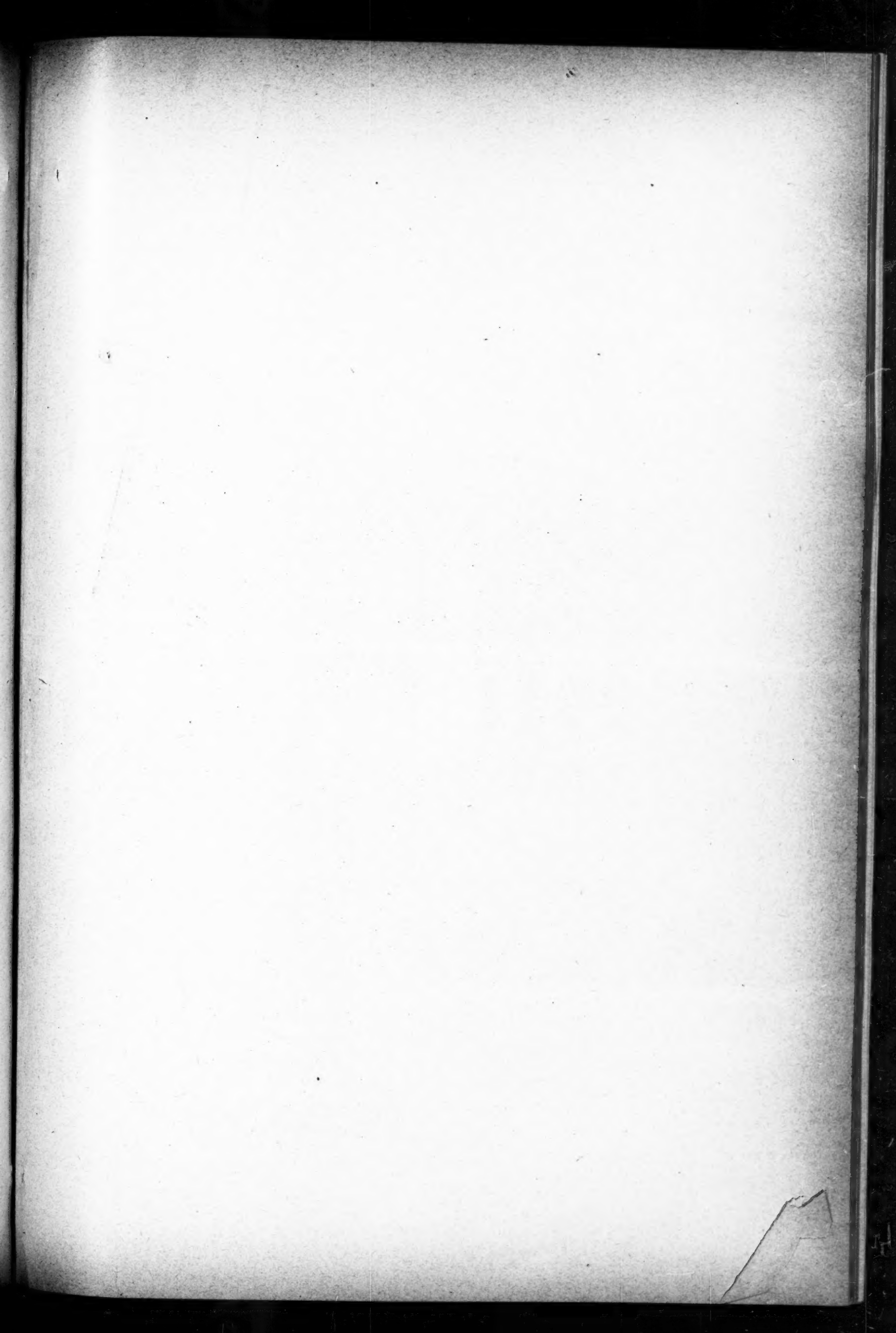
It is also characteristic of good architectural work, notwithstanding the utter neglect of it in so many modern buildings, for architecture is not an art of caprice, certainly as far as its structural conditions go. This consistency, this adherence to type, is the reason why architectural *olla-podridas* are bad, composed of bits from many periods and many styles. It is not so much that tradition and history are violated, but that type is violated. Greek and Gothic architecture are good because they are completed and perfect expressions of certain methods of structure, and are therefore typical. In music the same principal is equally important. Today there lie in uneasy graves a great host of still-born operas, oratorios and symphonies that have never lived because they belonged to no period, nation, species nor genus; while many musical works now hold the public ear because they are so *consistently* scored. In all art work precisely this test determines the difference between merit and demerit, and its application to any one of the fine arts not mentioned here will occur at once.

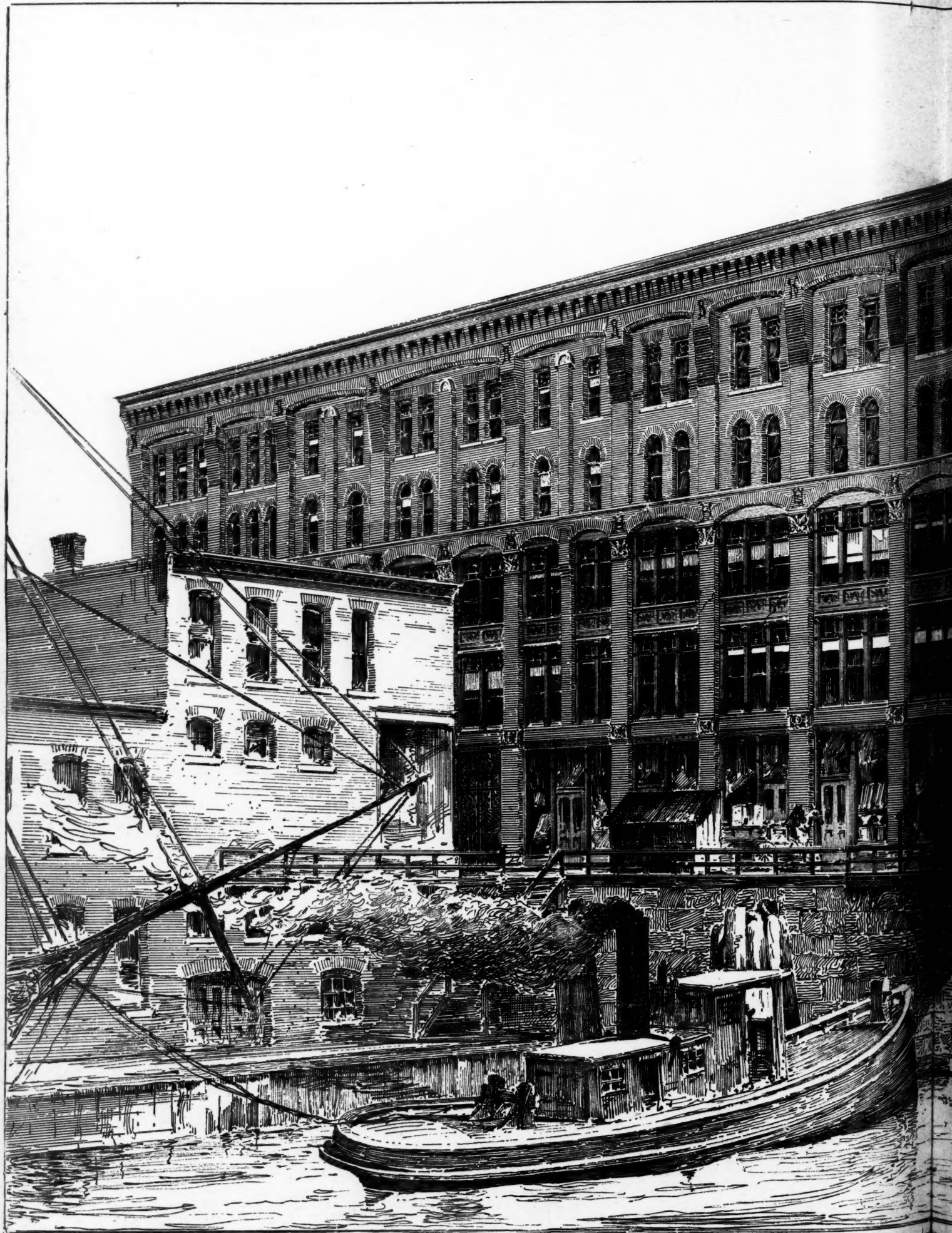
It will be seen that this principle applied to a work of art is valuable, not only for itself but for the qualities which it includes, and which have been suggested. The self-denial which is demanded of any artist who works according to this higher standard is very great, but self-denial is one of the essentials of all good work, and at the same time, by one of the apparent contradictions of things, is a prerequisite of the *joyousness* of art. If a man could select from every clime trees, rocks, skies and lakes, he could with ease make a most varied landscape. So, too, if he may crown a Gothic arch with a Greek pediment, and on the same level and for the same weights span his window opening with arches, beams and lintels at random, he may create a most curious building. But in neither case is the work worth the having, and in neither case will the artist get any true pleasure from his work.

The fact is that it is public criticism which makes good art. And we have it in our own power to determine what the art of our time shall be. Criticism, once it is based on sound principles, cannot be too scrupulously exercised. It should be as swift to praise the good as to unsparingly condemn the bad. And there is no reason why the public should ever allow its judgment to be warped, and its criticism be clouded by any of the technical jargon which is so often used to bolster up bad art. A design for a house is not good because it is Queen Anne, but Queen Anne is good or bad for certain inherent reasons. Nor does the signature of a great "Impressionist" or of a great "Pre-Raphaelite" make a great picture, unless the picture be great when judged from its creator's point of view. And in all cases one of the best talismans of criticism will be found to be the jewel *consistency*.

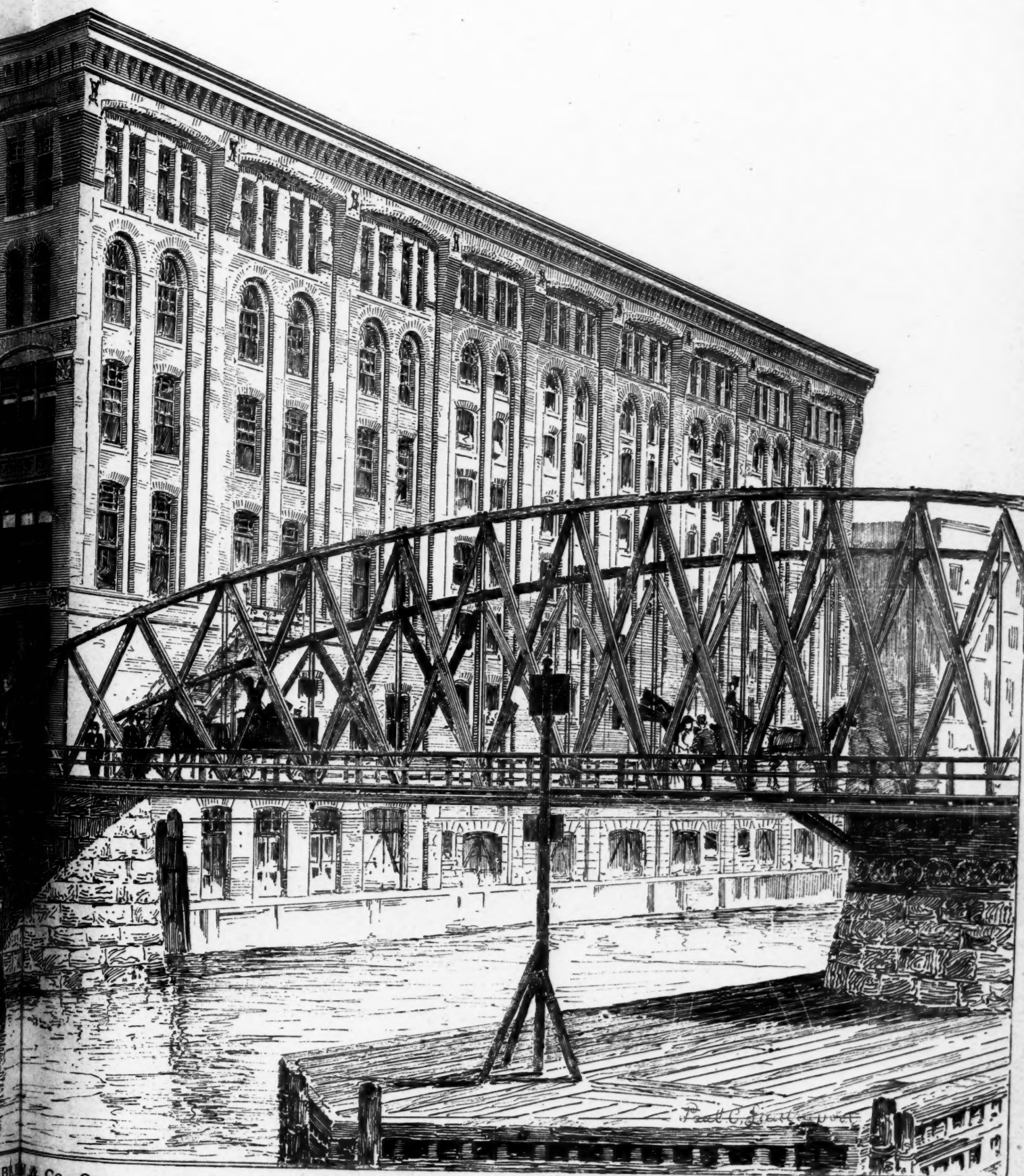
Hanging Paper on Damp Walls.

THE Germans are utilizing a discovery for hanging paper on damp walls. It consists in coating a lining paper on one side with a solution of shellac spirit, of somewhat greater consistency than the ordinary "French polish" and then hanging it with the side thus treated to the damp wall. The paper-hanging is then performed in the usual manner with paste. Any other resin that is equally soluble in spirits may be used in place of the shellac. According to the representations, this process is found equally effective in preventing the penetration of dampness.





FIRE-PROOF WAREHOUSE FOR HIRAM SIBB



The "Lady of the Lake" in Stained Glass.

THAT Western artists are becoming more truly progressive, more earnestly reaching out after that perfection that ends only with truth and fidelity to detail, with a thorough knowledge of art tradition and its demands upon all idealistic work for a guide, a desire to weave these into newer forms with newer, better, if possible, results, for a purpose, is hardly more apparent than in the line of stained glass work. The residence of John Plankinton, Esq., of Milwaukee, has been for the past year in the decorators' hands, and the writer was permitted recently to see some windows executed for the library of this mansion by the Chicago artists Messrs. McCully & Miles. The scenes, which in their selection exhibit rare taste as well as the inclination to depart from the old line of the stereotyped, are from Scott's "Lady of the Lake," and occupy the center of each window. The first is Ellen in the boat on the shore of the lake.

"In listening mood she seemed to stand,
The guardian Naiad of the strand."

This is beautifully treated, realistic and quiet in its effect, and is followed by a landscape with Ellen and the minstrel, the fair face of the girl and the aged face and gray locks of the minstrel, telling the story almost as well as the lines:

"Soothing she answered him 'Assuage,
Mine honored friend, the fears of age.'"

The hunting scene, which occupies the next window, is a spirited yet graceful rendering of the lines:

"And at her whistle, on her hand
The falcon took his favorite stand."

Entirely different in subject, yet with the same care and fidelity, is pictured the scene:

"Seek thou the King without delay,
This signet shall secure thy way."

with the portrait of Scott above and his favorite staghound below, which fills the next window, while the last illustrates the beautiful closing scene of that ideal love story, fitly ending it, as all love stories should end:

"Then gently drew the glittering band,
And placed the clasp in Ellen's hand."

The drawing and coloring of the figures are excellent, and the surroundings carried out with wonderful care and fidelity to detail. Above and below each picture are panels of flowers that speak of Scottish hill and glen,—the heather, bluebells, thistle, wild rose, etc.—and through these flower groups runs the ribbon upon which are the lines describing the scene.

These windows are truly works of art, and one cannot conceive a more beautiful decoration to a room, when carried out as these scenes are, the rich draperies and delicate flesh-tints of the figures, the natural treatment of the flowers on the varied antique glass, each framed in a border of jewels and deep-colored opalescent glass, making pictures enduring and ever pleasing.

Architectural and Building Notes.

T. C. GOUDIE is building a chapel at the Forest Home Cemetery which is unique in design and will greatly ornament that new burialplace. It is of pressed brick, with cut stone caps, pilasters, buttresses, etc.

THE corner-stone of the new court-house of Porter county, Ind., designed by Architect J. C. Cochrane, of Chicago, was laid at Valparaiso, on the 24th ult. There was a large attendance of the municipal authorities at the ceremony.

ARCHITECTS BAUER & HILL have plans for Mr. John Gunter, who will build on Wells street, between Superior and Huron, a three-story and basement flat building, with front of pressed brick and Berlin stone trimmings, at a cost of \$8,000.

ARCHITECT J. M. VAN OSDEL has completed plans for an office-building for J. D. Parker, six-story, 50 by 100 feet, first story of McArthur brown-stone, upper stories faced with Anderson pressed brick. The building will be thoroughly fireproofed by the Ottawa Tile Company; cost, \$100,000.

A PISTON packing expander, with several points of superior merit, is called the Williams, and is handled by H. A. Allyn & Co., of Chicago. It reduces the friction to the lowest possible point, will respond readily to any irregularities in the cylinder, it balances perfectly the piston head, is self-adjusting under all circumstances, and its simplicity of construction makes it in lasting quality especially valuable.

MR. B. R. HAWLEY is introducing into the elegant residence being constructed on Eighteenth street and Michigan avenue for Mr. Selz, of Selz, Swab & Co., by architects Adler & Sullivan, his improved construction, floor-warming, heating by hot air radiators, and also his laundry dryer, all of which are meeting with the commendation of leading architects because of their practical utility and value.

THE following placard has been posted in the plumbers' offices:

FELLOW TRADESMAN—Dear Sir: At a meeting of the Master Plumbers' Association of this city, held September 19, 1883, it was resolved that all applicants for license be required to come before the License Committee, composed as follows: Edward E. Baggot, J. J. Wade, Thomas C. Boyd.

The object of this is to prevent men from getting licenses as master plumbers who are unworthy and incompetent.

Please do not sign any applications for license, but refer them to
EDWARD E. BAGGOT, Chairman.

THE Wight Fireproofing Company have been awarded the contract for fireproofing the new Board of Trade building, Chicago. The contract is an extensive one, and will amount to \$44,000. This company also have contracts for the plastering of the new New York Life Insurance building in New York, and are about to commence the fireproofing of the general offices of the Atchison, Topeka & Santa Fe Railway Company, now being erected at Topeka, Kansas.

ARCHITECT ALFRED SMITH has planned a block of substantial stores and flats on Ogden avenue for ex-Sheriff Hoffman. It will have a stone front, will be three-stories high, and contain five stores and ten flats, and will cost \$23,000; also for C. H. Slack, on West Adams street, near Throop, the remodeling of a brick house, at a cost of \$5,000; also a block of flats on Illinois street, near State, for W. M. Hoyt. It will be of pressed brick, with stone front trimmings. It will be four stories and a basement, 50 by 50 feet, and will cost \$18,000.

ARCHITECTS BURNHAM & ROOT have drawn plans for a residence for Mr. Joseph Frank, to be erected on Michigan avenue, between Thirty-third and Thirty-fourth streets. It will be two stories, basement and high roof, and will have a front of Anderson's pressed brick, trimmed with brown-stone. The size will be 46 by 75 feet. It will be finished throughout in hard woods; also a picturesque country house for Mr. G. W. Smith, at Evanston. It will be 40 by 60 feet and two stories high, with steep roof. The exterior will be of pressed brick and timber.

THERE is soon to be started at Galewood, a station on the Milwaukee and St. Paul road about seven miles from the city, one of the most important industries that have been undertaken about Chicago for a number of years in the shape of what will be known as the Western Brick and Tile Manufacturing Company. The machinery the company now has up is capable of manufacturing 50,000,000 brick per year, and Mr. Gregg, who is the inventor of the machines to be used and one of the main movers in the enterprise, says the capacity will be doubled by the end of another year.

A LATE invention in wood flooring has recently been produced in this city at Bournique's new South Side Dancing Academy, it being the "patented lead-joined, end-up, hardwood mosaic," manufactured by W. C. Runyan & Co., of Rochester. The floor contains 175,000 pieces, each piece being one and three-quarter inches square, grooved on each side and joined with lead tongues, the lead being forced in in a molten condition. The body of the floor is maple, the border of ebony and cherry, the whole producing a very handsome effect, and is, undoubtedly, the most durable floor laid in this city.

A. C. HICKEY, of Chicago, has for some years past been making a reputation among theater architects and owners by the superior excellence of his sunburner for auditoriums and his system for the arrangement of the gas pipes and stage fittings. Mr. Hickey has made this branch of gas-fitting a close study, and its success is noticeable in the majority of Western theaters and even in the East. The new house at Rochester, N. Y., for instance, and the fitting of the Grand Opera House at St. Paul, as well as that at Duluth, lately opened, are the latest examples of this plan of theater lighting. The system has proved its worth and deserves success.

ARCHITECT HALLBERG has made plans and let contracts for a residence for Mr. P. E. Wilson, on Warren avenue, near Hoyne. It will be two stories, attic and cellar high, and will have a basement of rock-faced brown-stone, and a front of Anderson pressed brick. It will have a projecting bay in the front, running from the basement to the roof and terminating in a gable. In each story there will be a mullioned window, with headlight of colored cathedral glass. Over the front entrance, which is to the left of the bay, will be a graceful canopy of wood, with a balcony surrounded by ornamental iron. The parlors, library, dining-room and kitchen will be on the first floor.

THE Lyceum Theater, belonging to Joseph Downey, the well-known Chicago contractor, recently destroyed by fire, is being rapidly rebuilt by Architect George A. Masters. It is being enlarged, will have a handsome front five stories high and contain two galleries. Many special features will be introduced by the architect, especially for acoustics and ventilation, which will be, in a way, experimental, as they never before have been used in theaters. A commendable feature are the very broad stairways leading direct from the street to the main floor and balcony. Ample exits are also provided, and when completed it will rank among the first theaters of the city in architectural construction.

ARCHITECT WODSKIER is constructing an apartment house for C. B. King, corner La Salle Ave. and Superior street. The ground covered is 75 by 106 feet, and the building will be three stories and basement in height, and contain twelve apartments. The fronts will be of pressed brick with rock-faced brown-stone basement. The cost is estimated at \$40,000. This architect is also constructing an apartment house similar in general style and material for Mr. Z. S. Ely, of New York, on Wells street, between Oak and Wendel streets. It is 80 by 70 feet, and will cost about \$30,000. This architect is also preparing plans for the proposed building on Jackson and Market streets for the boot and shoe firm of C. M. Henderson & Co., but as the contracts will not be let till after the first of the year, nothing definite can be said about the plans, especially as no proposed building becomes a fact until the contracts are let and the owner knows exactly what it is going to cost.

ARCHITECT W. L. B. JENNEY has planned an extensive addition to the Presbyterian Theological Seminary of the Northwest. The dimensions of the new building are 130 by 45 feet, four stories and basement in height, the material being brick with stone trimmings, with slate roof. The structure will be practically fire-proof, the floors and walls will be deadened and mere lath used in the partitions. The style is modern Gothic, and the skyline and front presentation are handled with great variety, an effect that is brightened by circling window-heads and pointed arches and lintels. The entrance will be massive and entirely marble. There will be fifty dormitories, each dormitory including a bedroom with closets, and a fireplace in each study. On the first floor at one end is a large parlor, 19 by 43 feet, and both ends are agreeably broken up by, in the one case, a bow window and, in the other, a large triple opening. There are fire escapes at each end. The building will be heated by steam. No estimate has been made of the cost, but the improvement will be commenced immediately.

Our Illustrations.

Page 135, Lake Presbyterian church, Chicago, Ill., B. J. Bartlett & Sons, architects, Des Moines, Iowa. The church is to be built of Anderson pressed brick with stone trimmings, and, though 70 by 103 feet, will cost but \$15,000. It will be a model church in this respect, as it is understood that several prominent contractors estimated that the lowest possible figure it could be constructed for would be \$18,000. The design is singularly adapted to the economizing of space. J. H. Crumby is the contractor.

Page 131, Block of houses corner Lake avenue and Oakwood boulevard, Chicago, for John M. Wilson, by Wheelock & Clay, architects. This notable improvement was first projected early in the spring, the design being to construct a first-class apartment building. The plans were finally changed and residences substituted. There is one hundred and fifteen and one-half feet on Lake avenue and two hundred feet on Oakwood boulevard. The material of the fronts is green-stone from quarries located near Philadelphia, with brick and terra-cotta trimmings. The general style is what passes for Queen Anne, an adaptation of old English to Americanized forms. The corner house, which will be occupied by Mr. Wilson, is four stories, with slated mansard roof and trimmings of galvanized iron. It will contain about eighteen rooms and be fitted with bath-rooms, closets, etc., on each floor, and will be finished in hard woods. The houses adjoining on Lake avenue are six in number, three stories high, and each 20 by 58 feet. The buildings on Oakwood boulevard are similar in size and architecture. Each contains twelve rooms, the kitchen and laundry being in the basement. All the outside steps are of stone. These houses in their construction will meet the requirements of an elegant and comfortable home, and as the location is one of the most desirable the city affords, they will be a colony of homes for some of Chicago's best citizens. The estimated cost of the improvement is \$100,000.

A Fireproof warehouse for Hiram Sibley & Company, by George H. Edbrooke, architect. This great warehouse now in course of construction will be one of the finest, as well as the largest, in the city of Chicago. It has a frontage on Clark street of 189 feet by 240 feet deep (or river front of 240 feet). The river front is to be nine stories high, the Clark street front seven stories, with basement and sub-basement. The whole construction is to be entirely fireproof. The exterior all to be faced with Addison pressed brick, with cut-stone details. The front on Clark street is planned for stores of the most modern design, with large plate-glass windows, stained glass transoms, light iron divisions for the doors, and iron girders spanning each store-front. Above the stores, the several floors are to be used for the general offices of Hiram Sibley & Co., the north 60 feet of first floor to be elaborately fitted up. Immediately back of the portion used for offices is the great warehouse, nine stories high, each floor estimated in the construction to hold a weight of five hundred pounds per foot. In estimating such a weight as before-mentioned for the full nine stories, few would imagine the great weight the footings or foundations would have to sustain. On the river front piles are driven. The other piers or walls come on the natural earth. In looking at the foundation plan the footings of piers or walls seem to nearly cover the whole area. Mr. Edbrooke has carefully estimated every pound as near as possible, and has proportioned the base or bearing accordingly, as well as the supports above, columns, girders, etc., to the roof. The river front is 240 feet long by nine stories high, and the magnitude can only be imagined by perhaps comparing the height of the Montauk Block for the elevation, and three times its front for the river front. The design of the river front is somewhat plainer in style than the Clark street front, but it has a grandeur and solid repose about it that is not surpassed by any building in this city. The long, broad pilasters starting from the basement-story and terminating in arches at the top, seem to increase the apparent height. The architect has taken advantage of this and made the principal lines in the design perpendicular, which is highly satisfactory and far more effective than to have used horizontal string-courses to diminish the height. The openings generally are arched. The cornice is all to be of brick, with stone capping. No terra-cotta will be used. The whole exterior to be of pressed brick and cut stone. This warehouse, which has been constructed to accommodate the mammoth Western seed business of this house, and as a branch it is beyond question a phenomenal illustration of the business done by some of our large mercantile firms, and will be a monument to Hiram Sibley & Co., and a giant among the many large buildings of Chicago as well as a magnificent architectural production. The cost when completed will be \$500,000.

Asphalt Mortar.

GERMAN periodical devoted to architecture, the *Centrablatt der Bauverwaltung*, describes a patented waterproof composition for wall copings, water-tables, etc., made at a factory in Stargard, Pomerania, which has been used with great success for a number of years on the Berlin-Stettin railway. The material is composed of coal tar, to which are added clay, asphalt, resin, litharge and sand. The tenacity of this mortar, when properly laid, and its freedom from liability to damage by the weather is fully illustrated in the coping of a retaining wall on the above-named road, which has been exposed four years to the drainage of a slope thirty-three feet high, which is still perfectly sound and has not had any repair since it was laid down. In applying this mortar the space to be covered is first thoroughly dried, and after being well cleaned is primed with hot roofing varnish, the basis of which is also tar. The mortar is then laid on cold to the thickness of about three-eighths of an inch with either wood or steel trowels, and is properly smoothed over. If the area covered is large, another coating of the varnish is applied and rough sand strewn over the whole. The waterproof surface thus made is perfectly impregnable to rain or frost, and practically indestructible. The inexpensiveness of this material and its characteristics will suggest many uses it may be put to in ordinary building where there are water annoyances to be overcome.

Basement Ventilation.

THE Chicago basements in business blocks have always been a source of discomfort and even danger to those who have been obliged to work under the line of the street. The general plan in wholesale and retail stores has been to have work rooms, packing rooms, as well as the closets of the establishment, under the store floor, extending under the sidewalks to the street wall. In drygoods and millinery establishments, thousands of women and girls are employed where they are thoroughly shut in from the light of day, and beyond the reach of pure air. The drygoods firm of Mandel Bros. have lately spent \$100,000 in enlarging and remodeling their store on State street, under the direction of Architect Addison, and the result is a store that in all important particulars is a model of its kind. Around the elevators, which are of W. E. Hale's patent, is a specimen of brass manipulation, designed and manufactured by L. S. Baldwin & Co., which has never been equaled here. The interior woodwork and arrangement of departments calls for admiration, but it is the arrangement, and especially the ventilation of the basement, which is most commendable, in that, though the system is for the first time introduced into a store building, is simply perfect in its action. The plan is a double system of galvanized iron pipes leading from fans run by the elevator and electric-light engines. One system evenly and effectually distributes air to every part, while the other draws the air away, collecting it near the closets, thus preventing the spreading of impure air, and ejects it from a flue which rises twenty-five feet above the roof. The result is that with the admirable light furnished by the Edison Electric Light Co. the basement, with its ladies' toilet rooms and the general shipping department of the house is as pleasant, as free from all odors, as if on upper floor. The system is the invention of B. R. Hawley, of Hawley's system of ventilation, who for years has labored for its perfection, and who is to be congratulated upon its perfect success. It should be introduced as a sanitary measure into all store buildings, as its action is so perfect that even where the thirty closets are grouped in this basement, a smell is not perceptible. Mr. Marshall Field was heard to congratulate Mr. Mandel upon possessing a store of unequaled arrangement, a commendation that is certainly well merited by this enterprising merchant.

A New York Apartment House.

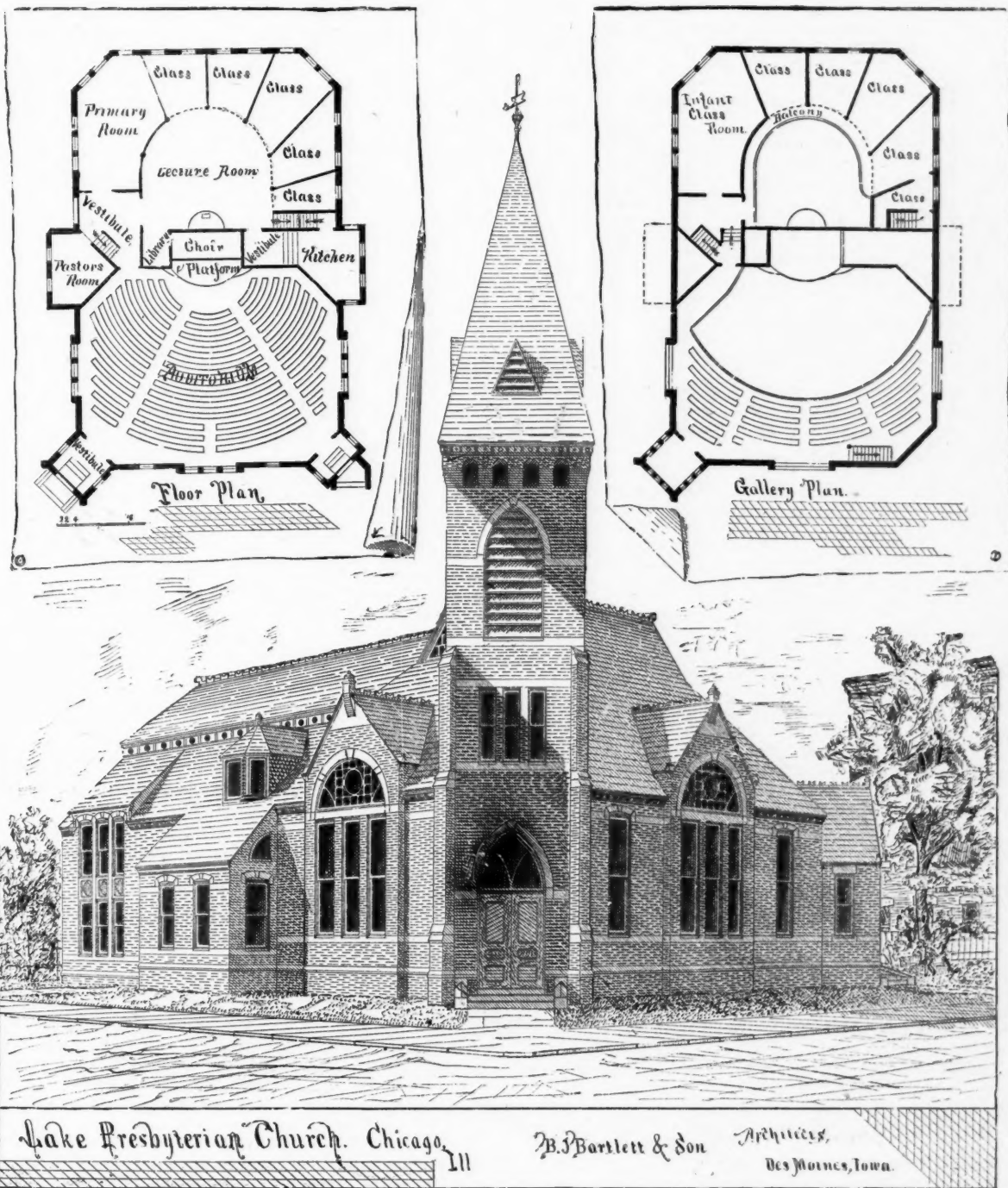
OF the fine apartment houses that are being erected in New York city, the Kenmore, as we glean from the *Real Estate Journal*, furnishes a good illustration of the class. The site, Boulevard street (57th), between Eighth and Ninth avenues, affords a fine view of its handsome elevation of seven stories of brick and stone, richly trimmed with terra-cotta. The entrance presents an oriental magnificence. The outer door is composed mainly of the finest beveled glass, while the inner door is of cathedral glass, unique in design. On the first floor there are two suites of apartments and a richly fitted up reception-room, with a clerk always in attendance, and where the inmates can at all hours have the use of the telephone and district telegraph call. On each of the six floors above there are three suites of apartments, every room having ample and direct communication with the exterior air. The house throughout is trimmed with well-selected hard wood, and each apartment is superbly decorated and papered in many different designs. In the halls lincrusta walton has been used and produces charming effects. Two passenger elevators are ever ready for the use of tenants and visitors. In short, nothing seemingly seems to have been neglected by Messrs. Terrance, Farley & Son, the builders and owners, that could add to the convenience or elegance of the premises, and who constantly superintended its growth from foundation to coping.

Ash Mortar.

MR. SHINN, of Philadelphia, has obtained a patent for the use of ashes in making mortar. It has been found that the mixing of fine domestic ashes with a small proportion of lime, forms a mortar, when a month old, that has a tensile strength of from four to five times that made from common sand and lime. Sand and mortar, a month old, has a tensile strength of twenty pounds, while ashes and lime, mixed as beton, gives a tensile strength of 140 pounds and a crushing strength of over 1,100 pounds per square inch. It is said, owing to the small quantity of lime (10 per cent) required for this mortar, it is necessary to mix it by machinery at a mill and have it delivered ready for use. Ash mortar is credited with the additional advantages of resisting the action of water as soon as it has set (in from two to three days), and also the combined action of fire and water, the quantity of lime being so small and the chemical union of the ash so complete, heat does not produce free oxide of lime, as in the case of sand mortar, consequently does not swell when the water is applied to it in the heated condition. The weight of the mortar is about one-half that of sand mortar. In setting it forms a silicate of lime and alumina, and hardens uniformly throughout; while sand mortar, when set, forms but an imperfect carbonate of lime. The ash mortar is said to work soft and smooth. Ashes from under a boiler or other furnaces where a high degree of heat is maintained, are not suitable for the purpose, it having been found that such ashes have no affinity for lime.

An Important Decision.

LENGTHY and bitter litigation, which has been going on in the Patent Courts with regard to the rights of Stewart Hartshorn and other claimants over the devices of stop-rollers for window shades, has come to an end. Hartshorn claimed his patents covered the principle of the stop-rollers which were being manufactured by opposing patentees, and his claim was sustained in the lower courts, the defendants being declared infringers. The Eagle Shade Roller Co., of Boston, carried the case to the U. S. Supreme Court, which came before Judge Lowell, who, October 12, affirmed the decision of the courts below, leaving Hartshorn the victor and in virtual control of the whole field.



Art Notes.

THE Boston Museum exhibits a score of oil sketches of the Franciscan missions, and ruins of missions on the Pacific coast.

THE second annual exhibition of Artists' Sketches and Studies will open at the American Art Gallery, on November 15, and continue one month.

FOR many purposes of decoration and utility metals are becoming exceedingly popular, and where they are not available metallic effects are sought for.

THE Grosvenor Gallery, of London, has agreed to exhibit a collection from the Society of American Artists of New York, during the months of September and October, 1884.

FREDERIC AUGUSTE BARTHOLOI, the sculptor, is about fifty years old. He was a pupil of the famous Ary Scheffer, and one of the French Commissioners at the Centennial Exhibition at Philadelphia, in 1876.

THE Berthold Auerbach monument, to be erected in the Black Forest, is to consist of a large block of granite with a bronze medallion of the poet, and will be placed in the vicinity of the Kupferhammer, near Pforzheim.

A CURIOUS set of furniture, in which the hide, horns, forelocks and fetlocks of Hungarian steers were variously utilized, was exhibited recently by one of our art firms; the silken locks became fringes, the polished horns arms and legs, while the hide formed a very ornamental upholstery, with its silver-gray and black hair.

MR JOHN J. McGRATH is redecorating the entire interior of Mr. Thos. Lowry's house, of Minneapolis; Mr. Ed. Sanderson's house, of Milwaukee; C. B. Miller's house, Los Angeles, Cal.; and Mr. D. R. Moon's house, of Eau Claire, Wis.; besides the usual extensive number of city residences, with frescoing and wall-papers.

THE Princess Elizabeth of Millais' picture was the daughter of Charles I and Henrietta Maria. Her life was a very sad and lonely one, owing to imprisonment and ill-health, and she died, at fifteen years of age, at Carisbrooke Castle, seeming to pine away, but supposed by some to have been the victim of slow poison administered by Cromwell.

MESSRS. ROSENBERG AND FIELD, the artists, have returned from a summer spent in Brittany and England, and have taken a studio in the Ayer building, corner State and Monroe streets. They have brought back a large number of sketches and finished pictures, many of them of peculiar excellence in the selection of subjects as well as artistic execution.

MR. JOHN W. ROOT has designed a set of wall-paper decorations for Mr. John J. McGrath comprising a dado and border, a wall-paper and frieze. The work is characteristic, bold and artistic, fully up to the efforts of the two firms concerned, and will make a valuable addition to Mr. McGrath's large collection of private patterns. The colorations are by Mr. Twyman and Mr. Root.

VERY effective as a window decoration and useful as ventilators are shades composed of Vedder's rings set in a brass frame. These rings, joined in rows by small brass links, are stained variously of a pale green or blue, amber and wine color, are about a quarter of an inch thick and an inch and a half in diameter. When the sash is lifted or let down they allow of a clear passage of air and light while affording a picturesque protection from outside view.

How to Take Screws out of Woodwork.

CARPENTERS, cabinetmakers, and artisans in wood generally, often encounter a difficulty in withdrawing a screw from work, by the screw turning around under the application of the driver, and refusing to come out of its place. In such a case the screw may have been driven nearly home originally by a hammer instead of with a driver, and hence no regular corresponding thread been formed in the wood. In other cases the screw may have been properly driven with a driver, yet being in old work the thread may have oxidized from the screw, or the wood about the thread may have decomposed so as to leave the thread of the screw without a matrix. Under either of these circumstances it becomes necessary to wrench off hinges and parts fastened by the screws, and oftentimes to the great injury of the woodwork so assailed and always with that risk. The *London Builder* offers a simple way out of this difficulty, viz: The application of heat to the head of the screw, which may be done with a heated poker or some such instrument. A few moments of such application of heat will render the withdrawal of such a contrary screw as easy a matter with a driver as if it had been recently and properly driven. The *Builder* suggests in driving screws that their tips be dipped in oil in order to defer rusting or oxidation.

A New Roofing Material.

MANSFIELD, Ohio, company is manufacturing a novel paper roofing material, which, it is claimed, is the best roofing in the world, all things considered. It is made from wood-pulp board, consisting of two-thirds spruce and one-third poplar. It is alleged it is not affected by heat or cold as metallic roofs are, nor can it corrode; that it is much lighter than slate, weighing only about fifty pounds to the square, and can be walked on without injury; that it is practically fire-proof, though not absolutely non-combustible. Among other desirable qualities it is said to possess are its flexibility, which admits of its being used for valleys, flushings, ornamental cut-work in gables, panels, bay windows, verandas, and irregular shaped roofs. It can be used on any kind of a roof not less than 1½ inch fall to the foot. It is claimed for it that it can also be used with perfect success for sheathing warehouses and grain elevators.

Lumber Notes.

ARKANSAS, Texas and Louisiana are said to have 190,000,000,000 feet of yellow pine.

AT Manistee, Mich., recently, R. G. Peters & Co. sold to Ed. Buckley 35,000,000 feet of standing pine timber for \$100,000 cash.

MANISTEE, Mich., has exported this year up to September 1, according to the Custom House books, 115,004,000 feet of lumber, 367,809,000 shingles, 10,038,000 lath, and 5,705,000 cubic feet of timber.

ACCORDING to the statement of the Export Lumber Company of New York, there has been exported of white pine from that port: for July, 6,402,000 feet; for August, 5,160,000 feet; for September, 3,582,000 feet; from July 1 to October 1, 45,796,000 feet, or 4,700,000 more than for the same period in 1882.

THE Bay City, Mich., *Gazette* records the letting of a contract to McMullen & Co., who have agreed thereby to put 40,000,000 feet of pine in the river Tahquamenon, in the upper peninsula, for an Indiana concern which has recently purchased large tracts of timber and contemplates erecting extensive mills in that vicinity.

THE Bay City *Lumberman* says, "Notes of busy preparation for the woods are being heard thus early from nearly every direction," which would seem to indicate that, notwithstanding the talked-of curtailment of lumber operations this winter, the slaughter of pines will be governed more by the character of the weather conditions than the declarations of men.

A RECENT statement shows there are engaged in getting out and manufacturing lumber in Canada about 100,000 men who support families, forming a grand total of 500,000, or about one-ninth of the population of the dominion. In sawmills and machinery, \$25,000,000 is invested, and in land and lumbering outfits about \$50,000,000, or more than one-third of the amount invested in all the other industrial establishments.

AT the mouth of the Chippewa river, at Beef Slough, on the Mississippi river, where 400,000,000 feet of logs have been rafted for lumbermen at points below, the water is so low the towboats are unable to approach the slough. Twenty-five million feet were sluiced from Paint Creek dam last week, to be floated into the works, and the Beef Slough Company has upward of 100,000,000 feet hung up they are anxious to get out before the season closes.

Interior Decoration.

ONE of the latest styles shown in grates and mantels is a mantel and mirror frame of unpolished ash and bevel plate mirror. Around the grate are grouped appropriate designs in tiling. A wide ornamental fender of polished brass surrounds the grate and uniquely designed andirons in old brass are prominent. A simple method for covering the front of the grate when not in use is introduced by the F. A. Butler company, to whose courtesy we owe this information. This is to suspend a plush or velvet curtain upon a brass rod and rings. The curtain may be embroidered to suit the fancy and be as decorative as it is useful.

A new grate is exhibited which, because of its completeness, will be largely adopted where utility is desired in combination with artistic effect. The grate frame is made of polished iron and is high enough to admit of an ornamented plate above the grate, which also serves to conceal a flat "curtain," which, being lowered before the grate, serves as a blower; the front of the ash-pan is also movable and can be raised, and joining with the blower also serves to increase the draft. The grate is hung so that it can be readily emptied and the whole is completed by a draft damper which is operated by an ornamented knob in front. This grate can be fitted to any mantel and looks well in an unpolished ash mantel with tiling around the grate. The sample shown was modeled by Elihu Vedder.

An Architectural Relic.

THE *London Times* reports an interesting piece of almost premedieval architecture was brought to light at Würzburg a few days ago. In the process of enlarging a shop the workmen came upon a considerable portion of an old cloister which had been partly built up into modern walls, and which presented, when cleared of all excrescences, many features of great beauty. Careful comparison satisfied the local architects that it was older than the church, still standing, built by Bishop Henry in the year 1000, and it must have been an appendage to the "new minster" of St. Saviour, built about 746, and destroyed by lightning in 854, in the course of a terrific storm which swept over all southwestern Germany with such violence that people thought the end of the world was at hand. The proprietor of the place has handed the remains over to the architect of Würzburg cathedral, Herr Friedreich, with instructions to clear the whole space around, so as to allow this monument of the earliest middle age to be studied by all lovers of art. Romanesque pillars of singular elegance alternate with clusters of slender shafts, all bearing small round arches. The whole is of striking beauty. The capitals are quaintly sculptured, and some of the pillars have carvings in relief. It is pretty certain that this is one of the oldest, if not the oldest, piece of Romanesque architecture in Germany. Walter von der Vogelweide, the celebrated German mediæval poet, was a canon of Würzburg about the year 1230, and probably often traversed this cloister. In the exploration of the site, which was at once carried out, a stone sarcophagus was found close to the spot where it is recorded that he was buried. In it were some fragments of a skeleton. Time had effaced whatever inscription the lid once bore, and there was nothing within to identify the tenant. Imagination at once declared these bones to be the remains of the famous Minnesinger. But a scientific examination decided that some of them belonged to a young man, some to an old man; even some skull fragments were shown not to have been portions of the same skull.

New Publications.

ROUGH SKETCHES FROM NATURE. Price \$5. Published by J. O'KANE, 4 College Place, New York.

The object of this work, to afford suggestions and study for the designer, is prepared under a method of treatment of the subject which the author may be congratulated upon. In the fifty plates that comprise the series, beside the customary and indispensable groups of lilies, passion flowers, fox-gloves, poppies, etc., he has very successfully handled more difficult subjects, such as orchids, laburnums, ferns, etc. The effects which may be derived from the harmonious mingling of several species in one group is admirably shown in a number of plates, notably Nos. 1, 31, 40 and 41. Everywhere there is to be seen a careful accuracy of delineation, a truthfulness of shading and veining of the foliage, and such graphic and faithful rendering of plant physiognomy as to command praise. Mr. Ryan is to be congratulated on the results which must attend this happy venture.

THE INLAND PRINTER, an operative journal conducted by workmen. Published monthly by the Inland Printer Company.

The publication of this journal opens a new branch of journalism in the West, though in a few cases it has been practiced in the East, namely, the publication of a trade paper by operatives, and the effort deserves success, for no line of work so surely requires an exponent as this, "the art preservative of arts." The *Inland Printer* is full of practical suggestions and news matter relating to the work of the printing craft, and in typographical appearance is all that the most thorough knowledge of the business can produce, and shows, to use a pun, on its "face" that its proprietors are practical men, and their production fitly represents them in every way. We hope to see it flourish, and even reach that degree of prosperity and fame enjoyed by its celebrated prototype the operative journal published by the Lowell mill operatives in Massachusetts.

THE AMERICAN JOURNALIST.

The second number, bearing date October 15, of an attractive monthly bearing this title, and published at St. Louis, has reached us. As may be inferred from the title, the object of the publication is to furnish a medium of intercourse between the journalists of the country and to draw them closer together. If the object is not attained, it evidently will be through no fault of the editor or the "chirrupy" quality of its contributions—judging from this second number. We not only wish the venture may be a success, but will say the honor of the profession cannot afford to let it be anything else. The following is the table of contents of the October number: "Illustrated Journalism," by E. J. Biddle; "Reporting in New York—Hard Lines," by Stanley Huntley; "Chicago Journalism—Some Earthquakes," by Chas. D. Wright; "Dramatic Critics," by John J. Jennings; "Wm. F. Switzer, with portrait"; "The Chicago Herald Trouble"; "Papers Edited by Educated Mutes"; "Editorial Notes"; "Newspaper Notes, by States"; "National Editorial Directory."

A PRACTICAL TREATISE ON LIGHTNING PROTECTION. By HENRY W. SPANG, with illustrations. New and Revised edition. New York: D. Van Nostrand, 23 Nassau and 27 Warren streets. Price 75c.

This little work treats of the subject of lightning protection in a popular manner. The author, after a few introductory remarks, takes up the discussion of electricity, and explains the meaning of various technical terms, treating on electrical induction, formation of thunder clouds and storms, height of thunder clouds and area of storms, electrical induction during a storm, atmospheric electrical discharges, lightning and thunder, accumulation of electricity in the subterranean water-bed, action of electricity of air and earth during a lightning discharge, the path selected by a lightning discharge, the origin and function of lightning-rods, under which division metal roofings, leaden pipes, gas and water pipes are discussed, with a list of the best materials for use as lightning conductors. What he terms the radical system of lightning conductors is explained. His system of ground connection seems philosophical, and his theory of air terminals is supported by arguments that are strong in its favor. In a word, this little work is a valuable addition to the literature on this subject.

Buildings That Resist Earthquakes.

THE volcanic eruptions in Java, the earthquake in Ischia, the liability of earthquakes on the Pacific coast, and our own Western tornadoes has called attention to the methods of construction of buildings in Japan, where shocks of earthquakes are frequent. It is not the custom in that country to dig foundations for any building, no matter how large or important it may be. Rocks slightly rounded at the top are placed where the four corners of the house are to be. The corner posts, also rounded at the end, rest on these. The timbers are all pinned together, not nailed, so as to allow of considerable movement without coming apart. In the central portion of the building the timbers are particularly heavy, and act as ballast. In high towers there are sometimes huge beams swung from the roof and reaching to within a foot of the ground, which prevent the building from being overturned either by earthquake or storm. The oldest building in Japan, the Treasury at Nara, is built in this manner, without the swinging beam, but with a very heavy ballast in the framework of the center of the floor.

A New California Resort.

W. E. WILLMORE, of Los Angeles, California, is in Chicago, and exhibits plans of a seaside resort which is being built for him by architect W. R. Norton, of Los Angeles, at Willmore city, on San Pedro bay, a beautiful inlet from the Pacific ocean, three miles east of Wilmington. The pavilion, which is 400 feet long, and varies in width from 40 to 65 feet, is designed in three stories, the upper to include the pavilion, promenade, etc.; the second floor is laid out in refreshment, dining and sleeping rooms, while the lower floor will be devoted to bathhouses. The structure is located on a bluff 25 feet above the beach, which is very wide and of hard fine sand. The convenient arrangement of this building, and its location, will make it a valuable addition to California seaside resorts.

Inventive Genius in Building.

- 286,176. Fireplace Grate. Albert Chase, Boston, Mass.
- 286,224. Fastener for the meeting-rails of sashes. George W. Reeve, Milburn, N. J.
- 286,234. Lumber Drier. John Owen Smith, Jamison, Ala.
- 286,250. Reversible store-door latch. August Arens, New Britain, Conn.
- 286,255. Roofing Paint. Mead Blake, Compton, Quebec, Can.
- 286,270. Overflow connection for bath-tubs. Allen P. Creque, New York, N. Y.
- 286,321. Pavement and floor. Elijah B. Martindale, Indianapolis, Ind.
- 286,345. Vise. George Thorp, South Bay City, Mich.
- 286,365. Spring-compression Faucet. Joseph Zane, Boston, Mass.
- 286,376. Clamp and Vise. Charles L. Bellamy, Arlington, N. J.
- 286,385. Adjustable Drawing Knife. John S. Cantello, Taunton, Mass.
- 286,388. Ratchet Bit-brace. Wm. R. Clarkson, Buffalo, N. Y.
- 286,393. Fire-alarm. Frederick A. Copeland, La Crosse, Wis.
- 286,401. Fire-proof building. Wm. H. Dolman, St. Helen, Oreg.
- 286,405. Paint-brush holder. Albert T. Edwards, South Kingston, R. I.
- 286,434. Imitation stained glass. F. Benedict Herzog, New York, N. Y.
- 286,539. Door-hanger. George W. Hey, Syracuse, N. Y.
- 286,542. Illuminating vault-covers or grating-tiles and surfaces made of the same. Thaddeus Hyatt, New York, N. Y.
- 287,552. Lumber Drier. David F. Noyes, Lewiston, Me.
- 286,555. Ventilating screen for windows. Emmeline W. Philbrook, Boston, Mass.
- 286,558. Skylight. John C. Ryan, Detroit, Mich.
- 286,559. Sash-holder. Edson E. Shepard, Watertown, N. Y.
- 10,391. (Reissue). Steam-heater. William B. Dunning, Geneva, N. Y.
- 286,584. Window Frame. William W. Boyington, Highland Park, Ill.
- 286,597. Chimney Top. Wendelin Faulstich, Belleville, Ill.
- 286,648. Hot-air magazine. Joseph H. Spurrier, Joplin, Mo.
- 286,714. Door-bell. Enoch Lawson, San Francisco, Cal.
- 286,774. Door-hanger. Caleb Brinton, Chicago, Ill.
- 286,842. Wrench. Granville W. Pittman, Keokuk, Iowa.
- 286,847. Pipe-tongs. Henry Rhyn, Cincinnati, O.
- 286,850. Fire-escape. Albert N. Sande, Chicago, Ill.
- 286,858. Liquid Paint. Roderick H. Smith, Dunkirk, N. Y.
- 286,892. Brick-machine. William Andrus, Keokuk, Iowa.
- 286,894. Plane. Fortune L. Bailey, Freeport, Ind.
- 286,912. Gate-hanger. Charles Daniel, Butler, Mo.
- 286,535. Door-latch. Frederick J. Lee, Oswego, Kan.
- 286,951. Stench-trap. Randolph McBee, Washington, D. C.
- 286,964. Hollow Auger. Jas. A. Rodman, Lebanon, Tex.
- 286,884. Mould for glass tiles for floors, etc. Laurin D. Woodworth, Youngstown, O.
- 10,393. (Reissue). Apparatus for Drying and Seasoning Lumber. John Owen Smith, Jamison, Ala.
- 287,013. Endless Hod Elevator. Oliver N. Eaton, New York, N. Y.
- 287,021. Levelling Rod. William Gurley, Troy, N. Y.
- 287,065. Door Hanger. Sidney M. Stevens, De Kalb, Ill.
- 287,071. Automatic Fire Extinguisher. Caleb C. Walworth, Boston, and Osborn B. Hall, Malden, Mass.
- 287,099. Steam Radiator Attachment. R. T. Crane, Chicago, Ill.
- 287,142. Fire Escape. Charles J. Lung, Rochester, N. Y.
- 287,145. Spacing Instrument. James O. Madison, New York, N. Y.
- 287,149. Radiating Drum for Hot-Air Furnaces. Jacob Miller and Daniel Mager, Allentown, Pa.
- 287,193. Pipe Wrench. James L. Taylor, Ishpeming, Mich.
- 287,194. Revolving Wrench. Samuel A. Thomas, Charleston, Mo.
- 287,219. Hatchway Protector for Elevators. Robert T. Bean, Mount Sterling, Ky.
- 287,230. Two-Room-Heating Fire Back and Frame. Jas. H. Burnham, Fayetteville, Tenn.
- 287,233. Fire Escape. William S. Cassidy, Kelley's Station, Pa.
- 287,245. Weather Strip. Peter Cool, Manhattan, Kans.
- 287,246. Sink. George Frederick Coomber, Kansas City, Mo.
- 287,257. Fire Escape. Dennis P. Edgar, Jackson, Mich.
- 287,271. Vise. Porter A. Gladwin, Boston, Mass.
- 287,286. Lightning-Rod Joint. Wm. Hewitt, London, Ontario, Can.
- 287,287. Safety Appliance for Elevators. John Hodges, Westfield, N. J.
- 287,369. Mercury-Seal Trap for Lavatories, Bath Tubs, etc. Abraham Edwards, Asbury Park, N. J.
- 287,371. Joiner's Plane. William B. Fenn, Meriden, Conn.
- 287,373. Tile Hearth or Vestibule Floor. Isaac L. Frankem, Indianapolis, Ind.
- 287,378. Pipe Tongs and Cutter. Henry Herbert, Cincinnati, O.

Ricker's Calorific Positive Pump.

THIS latest invention in pumps is so wide a departure from usual methods, a brief description will not be uninteresting, as it is without moving parts, needs no lubrication, and has nothing to get out of order. Its capacity is to throw 200 gallons 50 feet high per hour, and is automatic in action, being operated by steam from the combustion of gas as follows: A steam generator, contained within a cylindrical base, supplies steam to the cylinder above it displacing the water therein, until three-quarters of the contents have been driven out, when the steam suddenly condenses and forms a vacuum, the result of which is, the cylinder becomes again filled with water from the source of supply (well or cistern) and the operation is again repeated, and will continue to be, until the water fails or the gas gives out to supply it with fuel. It vaporizes about one tablespoonful of water at each discharge, and the construction is such, that it is impossible to generate a greater amount of steam than is just sufficient to effect each intermittent discharge.

It is difficult, says the *Mississippi Valley Lumberman*, to ascertain the exact condition of the log drive on the main Mississippi. There is now some 15,000,000 feet in the main boom at Minneapolis which are being sorted. Between the city and St. Cloud there are two crews driving with each from 10,000,000 to 15,000,000 feet coming along slowly. At St. Cloud is the rear of the main drive having in it from 75,000,000 to 100,000,000 feet. They have left above Sauk Rapids some 15,000,000 feet hung up. It is now sure that the mills of Minneapolis will have a full stock of logs and plenty to carry over.

In his report on the trade and commerce of Venice, Vice-Consul de Zuccato gives many particulars illustrating the remarkable revival in that city of the art industries for which Venice was so renowned in other times. The most noteworthy are glass manufactures, mosaics, colored enamels, pottery, artistic castings, furniture, lace, and the copying of ancient brocades and damasks, recalling the glorious days of the Republic when the Venetian looms produced magnificent stuffs, embroidered with gold, silver, or silk, which the Doges sent as gifts to foreign potentates. The art, which was entirely lost, was rediscovered in 1857, and is now recovering some of its ancient splendor. Bead making alone, which, in spite of all efforts to manufacture this article elsewhere, has always been the special privilege of the Venetians, gives at this time, in Venice, employment to about 15,000 persons.

The Sewerage of Paris.

AFTER a full discussion on the subject, the Technical Sanitary Commission of Paris passed a resolution embracing thirty-four articles, the most important, or rather those which throw out suggestions that might be followed in most American cities with good sanitary results, we append, omitting such as are already practiced in this country or are impracticable, at least to Chicago sewerage. Those requiring the discharge of water-closet matter into sewers passed by a vote of 21 to 6.

Art. 2. Every water-closet shall be supplied from a reservoir by a supply-pipe or by other means, with a sufficient quantity of water to insure a minimum supply of 10 liters per person per day.

Art. 4. The waste-pipes of sinks must be trapped near the upper end.

Art. 5. All leaders should be intercepted so as to prevent direct communication with the sewer.

Art. 6. Every soil-pipe or sink waste should be carried above the roof to establish active and permanent ventilation.

Art. 7. It is desirable that these soil-pipes carried above the roof, as before said, should be flushed by automatic intermittent flush-tanks, located on the highest story where there are closets.

Art. 8. In order to insure a hermetic and permanent interception between the sewer and the house, the outlet-pipes shall be supplied with traps at their lower ends before entering the public sewers.

Art. 10. It is necessary to continue the suppression of the system of fixed vaults. To that end new vaults will not be established, except in cases to be determined by the administration, where the absence of a sewer, the arrangement of the existing sewer, the insufficient supply of water, etc., will not permit the direct discharge either into the existing sewer or a special sewage system.

Art. 11. A basin with sloping sides should be sunk at the bottom of the vault, under the manhole cover, to render the work of emptying easier and more rapid.

Art. 12. In vaults now existing ventilation should be accomplished by inlet-pipes, and by pipes open at their upper ends, and carried above the roof of the house.

Art. 14. The emptying of vaults should not be authorized, except by aid of the most perfect apparatus, especially such as creating a vacuum in the chambers, have arrangements for the disinfection of the escaping gases.

Art. 20. The total discharge of excremental matters into the sewers may be authorized in the case of sewers having a large and constant flow of water, not subject to an accumulation of sand, and in which matters are carried without halting to the point of discharge in the collecting sewer.

Art. 21. It may be permitted also in sewers less abundantly supplied than the above, but having fall and flow sufficient for the removal of all matters, on condition that the improvements be carried out, which are indicated in Articles 23 and following.

Art. 22. In sewers which do not satisfy the conditions specified in Articles 20 and 21, or in which the back water of the collecting sewers may check the flow, the discharge of excremental matters can be made only in tight pipes placed inside of the large sewers, and carried far enough to reach sewers which do meet the prescribed condition.

Art. 26. To insure the cleansing of the sewers, independently of the water admitted at the inlets and such as comes from habitations, there will be established a system of flushing by means of reservoirs discharging 10 c. m. of water, placed at the head of each sewer, and at maximum intervals of 250 m. along its course.

These reservoirs will be emptied instantaneously once or twice each 24 hours.

Gangs of workmen will follow the movement of the water discharged, to cause deposited matters which remain attached to the walls of the sewer to be carried on with the flow.

The length of the sewers in which this mode of cleansing by flush-tanks may be employed, is about 424,000 m.

Art. 27. There will be established in the collecting sewers a certain number of sand boxes (15 at the outside) in such a way that the cleaning boats or wagons may secure the removal of these matters with a delay of not more than 24 hours.

Art. 28. Movable catch-basins will be established at the inlets of sewers under-paved streets, or others which discharge sand, manure or heavy matters into the sewers. The number of these catch-basins is estimated at 2,000.

Art. 32. The waters of the sewers of Paris taken in their present condition—that is to say, containing a large proportion of excremental matters—can be subjected to processes of purification by the soil without danger to the public health.

Art. 34. A study will be immediately undertaken as to the purification of the waters of the departmental collectors of the Seine and of the sewers of Paris, which will be connected with them by the irrigation of the plains bordering the river above Paris.

Synopsis of Building News.

Chicago, Ill.—The stage of the season is marked by fewer commencements of new buildings, yet there are few idle hands as yet among the builders, while the outlook is quite encouraging, as this department of activities does not seem to be affected in the remotest degree by the depression in some other branches of business.

Architect W. L. B. Jenney: For Sears estate, two additional stories to the Sears building, Nos. 99 and 101 Washington street, with elevator and other internal improvements for a first-class office building, completed October 1, at a cost of \$24,000. For Mary E. Hall, dwelling, No. 22 Walton Place, 25 by 61 feet, cost \$6,000. For R. B. Walford, four-story dwelling, 24 by 32 feet, cost \$5,200. For L. R. Giddings, Downer's Grove, ornamental cottage residence, cost \$7,000. For H. D. North, same place, residence, cost \$4,500. The above all under way. Projected: F. M. Sanger, Muskegoe, I. T., villa, stable, ice house, fruit house, and other outbuildings (taking proposals). Eastern parties, additional story to No. 126 Kinzie street. For president of Seminary of the Northwest, southern Missouri, four-story dormitory, with study and bedrooms, for fifty pupils (to be commenced immediately).

Architect Lucian F. Plympton: For Elijah Coombe, two three-story double houses, walls of southern Ohio brick, slate roofs, 71 by 45 feet, cost \$10,000 each, under way; Douglass, contractor. For Frederick Hassaureck, three-story residence, walls of Indiana limestone, pitched face for first floor, second floor, brick plastered on exterior, slate roof, area 65 by 65 feet, cost \$30,000 (projected).

Architect J. M. Van Osdel: Two three-story houses on Ashland avenue, for S. D.

Stanbro, cost \$9,000 each. Also a dwelling for Mrs. Spry, corner Monroe and Loomis streets, three-story, 33 by 76 feet, cost \$25,000. Also planned dwelling for J. M. Adsit, corner Dearborn avenue and Elm street, three-story, 34 by 55 feet, cost \$35,000. Also plans for B. L. Crumb's house, corner Adams and Leavitt streets, two-story, 25 by 46 feet, brownstone front, cost \$7,000. Also planned a warehouse for Ewing estate, on Milwaukee avenue, near Lake street, three-story, cost \$12,000.

Architect H. Sierks has planned two buildings for George Raithe, on the corner of Hoyne avenue and Lexington street, containing six flats; materials, Anderson pressed brick, with terra-cotta ornaments; cost in the neighborhood of \$15,000. Mr. Sierks has also planned for Mr. Multig two buildings on Lexington street, two-story and basement, containing six flats; material, pressed brick front, with stone trimmings; to cost \$10,500. Also a \$25,000 warehouse at No. 146 North Water street, to be five stories high; material, brick. Mr. Sierks has planned four buildings at the corner of Division and Wells streets. They will be two-story and basement, and constructed of pressed brick, with limestone trimmings. They will be built for C. F. Gray, and will cost about \$20,000. The same architect has planned a residence at No. 2612 South Park avenue, three-story and basement, with Berlin stone front, at a cost of \$18,000, for Bletner Bros. Also a three-story apartment building, and livery-stable in the rear, at a cost of \$22,000. Also a \$20,000 structure on Wood street and Chicago avenue, three stories and basement, designed for an apartment-house and stores on ground floor. Also, at No. 26 Lowe avenue, a three-story apartment-house, to be constructed of Anderson pressed brick, with limestone trimmings, to cost \$10,000, for Theodore Dyckman.

Architect L. G. Hallberg has drawn plans for a four-story factory, 61 by 100 feet, to be erected on Goose Island for Amos & Frost, to cost \$15,000. The building will be used for the manufacture of spring beds. Also made drawings for a handsome frame house for Mr. H. H. Rountree, to be built at Plattsville, Wis. The structure will be 40 by 55 feet, two stories and attic high, and the style will be Queen Anne. Also plans for a house for Mr. Otto Peitch, 31 by 47 feet in size, and two stories high. The style is Swiss villa, and is very unique and attractive. Also completed drawings and begun the construction of a residence for Mrs. Mathilda Hale, on Jackson street, near Ashland avenue. It will be 25 by 87 feet, three stories high, and will have a front of rock-faced brown-stone. Also will erect two houses for Mrs. Eliza L. Williams, on South Park avenue, near Thirty-fifth street. They will be 50 by 64 feet in size and three stories high, with fronts of Anderson brick, which will be ornamented with brown-stone and terra-cotta. Completed they will cost \$15,000. Also has plans made for two houses for Henry W. Leman, on Erie street, near the lake-shore drive. They will be three stories and basement high, and 32½ by 50 feet in size, with fronts of New York blue sandstone, rock-faced. They will cost \$10,000.

Architect C. C. Miller has planned for J. B. Storey and E. A. Clarke a warehouse on State street, near Fourteenth street. Also four flats for Peter McDonald on Leavitt street, near Ogden avenue, for \$6,000. Also two flats for Artemus Blake, on Pauli a near Madison street, to cost \$6,000. Also a fine porch and bay window for Honsinger's house, on Park avenue, near Leavitt. Also the extensive remodeling of Dr. A. B. Clarke's house, No. 68 Ogden avenue. Also the same service for Mr. B. L. Pease's residence, between Lincoln and Robey streets.

Cincinnati, O.—The present condition of building is good; both architects and builders are busy. The outlook for the coming season is cheering.

Architect Geo. W. Rapp: For C. Moerling Brewing Co., corner of Henry and Dunlap streets, four-story and basement brick stable, with asphalt roof, 100 by 100 feet, cost \$25,000; Wm. Miller, contractor. For F. Ezekiel et al., one or more three-story brick dwellings on Myrtle Avenue, Walnut Hills, 38 by 50 feet, cost \$6,500; Kemme and Rensselaer, contractors. For same parties, two or more three-story brick dwellings on Myrtle Avenue, Walnut Hills, 29 by 55 feet, cost \$6,000; same contractors. For F. Thauwald, two and a-half story pressed brick dwelling, with slate and tin roof, on Gilbert Avenue, Walnut Hills, 41 by 56 feet, cost \$12,000; same contractors. All of the above are under way.

Architect S. E. Des Jardines: Cincinnati Sanitarium—amusement hall, billiard room and conservatory—brick walls with slate roof, 52 by 72 feet, cost \$3,500; W. Cummings, contractor. For W. R. Teasdale, two dwellings, nine rooms, two stories and attic, slate roof, 25 by 53 feet, cost \$5,900 each; J. Griffith & Sons, contractors. For H. H. Finch, two-story frame dwelling, seven rooms, slate roof, 32 by 35 feet, cost \$4,500 (projected). For J. W. Leiben, frame dwelling, seven rooms, cost \$3,200. For W. H. Blymer, alteration and additions to frame dwelling, cost \$4,000. All the above under way except where noted.

Clinton, Ia.—The Building status is satisfactory, and the outlook fair. Quite a number of cheap cottages are being built, ranging in cost from \$1,000 to \$1,800.

Architect W. W. Sanborn: For S. B. Gardiner, two-story and attic brick, stone trimmings, slate roof, 53 by 71 feet, cost \$20,000; L. Upton and E. Deeper, contractors. For G. M. Custis, two-story brick, stone trimmings, slate roof, 50 by 69 feet, cost \$16,000; J. Anthony, contractor. For J. Morris, two-story frame, 34 by 60 feet, cost \$5,000; A. E. Wright, contractor. For F. Sutton, two-story frame cottage, 32 by 55 feet, cost \$3,000; same contractor. For A. Sutton, two-story frame cottage, 32 by 50 feet, cost \$2,500; same contractor. For City of Morrison, Ill., two-story addition (brick) to schoolhouse, 53 by 53 feet, cost \$7,000; J. B. Mason, contractor. For First Presbyterian Church Society, Morrison, Ill., church building, brick and stone, 58 by 92 feet, cost \$12,000; same contractor. All of the above are under way.

Evansville, Ind.—The building for this season is approaching a finality, and very little work will be commenced from this date until spring.

Architects Reid Bros.: For Crawfordsville Building Association, Crawfordsville, Ind., opera house, brick walls, 86 by 165 feet, auditorium 60 feet diameter; contract not yet let, but building to be commenced at once.

Indianapolis, Ind.—Building continues quite active. Within the past week or so quite a number of medium-sized buildings have been begun. The outlook is encouraging.

Architect C. A. Wallingford: For A. A. Hazelrigg, frame dwelling, 30 by 45 feet, cost \$3,500. For Carrie Anderson, Van Wert, Ohio, frame dwelling, 32 by 50 feet, cost \$5,000. For E. M. Doty, Columbus, Ohio, frame dwelling, 38 by 50 feet, cost \$5,000. For Jas. M. Kerr, same place, frame dwelling, 31 by 51 feet, cost \$5,000. For J. S. Catherwood, Hoopeson, Ill., frame dwelling, cost \$3,000. E. M. Doty's building is already contracted; J. B. Coulter, contractor. The others are projected.

Kansas City, Mo.—The present outlook for building is rather encouraging after the long spell of rainy weather.

Architect S. E. Chamberlain: For M. F. Tullis, two-story dwelling, 33 by 51 feet, brick walls, slate roof; cost, \$5,000; Remic & Stone, contractors. For C. W. Whitehead, five three-story and basement brick dwellings, 43 by 94 feet, cost \$21,000; Remic & Stone, and Baker & Dunlap, contractors; all under way.

Minneapolis, Minn.—Architects and builders are reasonably occupied with encouraging prospects for the future. The past season has been good, and unless all signs fail next will be better.

Architect T. B. Long: For W. W. McNair, brown-stone residence, two-stories and attic, interior walls brick, tile roof, 50 by 106 feet, cost \$75,000; L. C. Bisbee, contractor. For S. W. Lusk, two-story and attic frame store building, cost \$5,000; R. E. Trofion, contractor. For Clark & Linton, three-story residence, pressed brick front, cost \$12,000; Bingland & Turner, contractors. For H. V. DeMott, two-story and attic frame residence, cost \$10,000; L. C. Bisbee, contractor; two-story frame residence, cost \$3,000; B. E. Trofion, contractor. For E. A. Upham, two-story frame residence, slate roof, cost \$5,000. For T. W. Hoyt (Redwing, Minn.), two-story and attic frame residence, cost \$12,000. For S. W. Serl, two-story and attic frame residence, cost \$3,500. For H. W. Huntington, two-story and attic frame residence, cost \$6,000. For S. B. Mattison, livery and "bus" stable, frame, cost \$7,000; S. C. Cutter, contractor. For D. Fish, double brick tenement, English basement, cost \$10,000; T. S. Seaver, contractor. For D. W. Cassidy, block of four houses, brown-stone fronts, cost \$25,000; R. E. Trofion, contractor. For Humphrey, Dagget & Lang, three-story double store, pressed brick front, cost \$10,000; — Robinson, contractor. For F. C. Ball, two-story and attic frame residence, cost \$5,000. For L. C. Coleman, two-story and attic frame residence, cost \$12,000. For G. M. Naylor, two-story frame residence, cost \$4,000; — Robinson, contractor. For Albert Smith, two-story frame dwelling, cost \$5,000; L. C. Bisbee, contractor. For St. Mark's Church, alterations, cost \$8,000. For W. W. McNair, green-house and stock barn, cost \$3,000 and \$10,000 respectively; L. C. Bisbee, contractor.

Richmond, Ind.—Builders are quite busy, but have been much delayed by wet weather. The outlook for the coming season is not clearly defined, but architects and builders are hopeful.

Architect John A. Hasecoster: For Mrs. Johns, two-story brick, stone-front, business building, 50 by 35 feet, cost \$8,500; T. W. Roberts, contractor. For D. Wheelan, two-story brick residence, stone front, slate roof, cost \$4,500, same contractor. For W. Grottenick, two-story brick dwelling, stone trimmings, cost \$3,200; Bartel & Co., contractors. Steeple for German Lutheran Church, Dayton, O., brick and stone and slated, cost \$4,000; J. C. Peters, contractor. All under way.

St. Louis, Mo.—Building moderately active at this stage of the season.

Architect Ramsey: For Adolph Kummerer, two-story brick building with slate roof, 44 by 90 feet, cost \$9,000; projected and about to be started; sublet.