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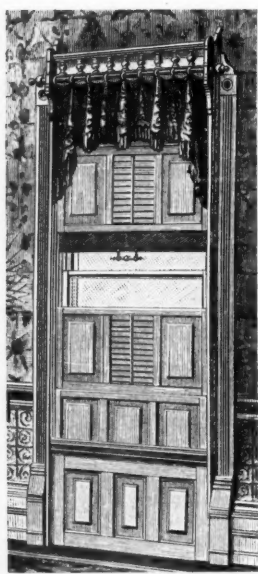
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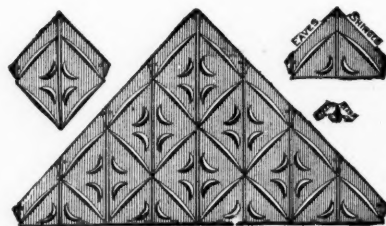
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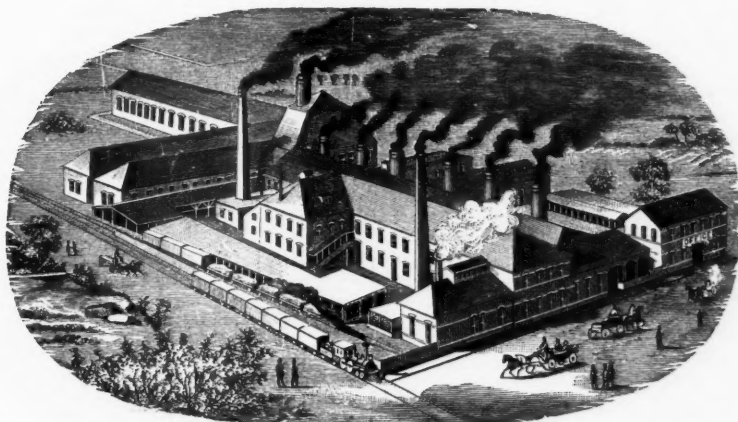
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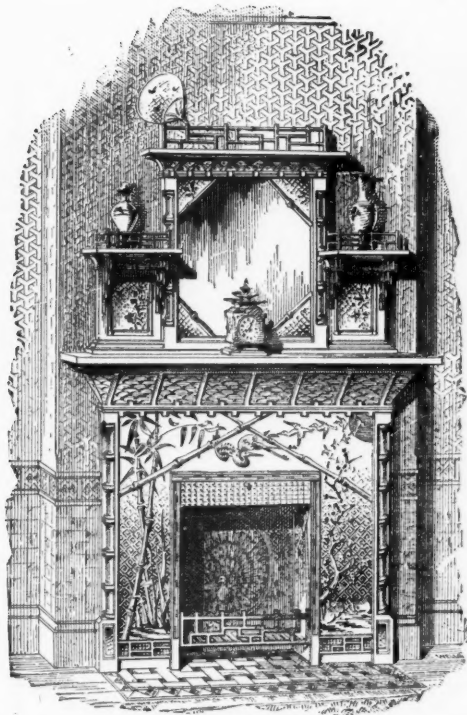
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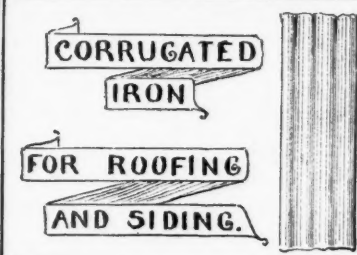
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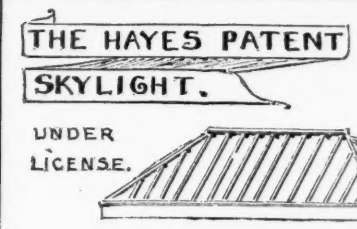
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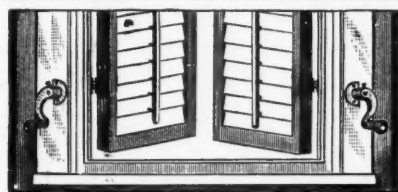
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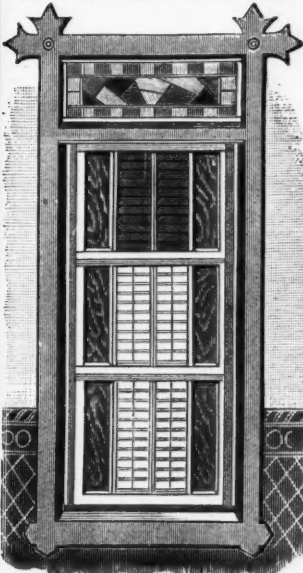
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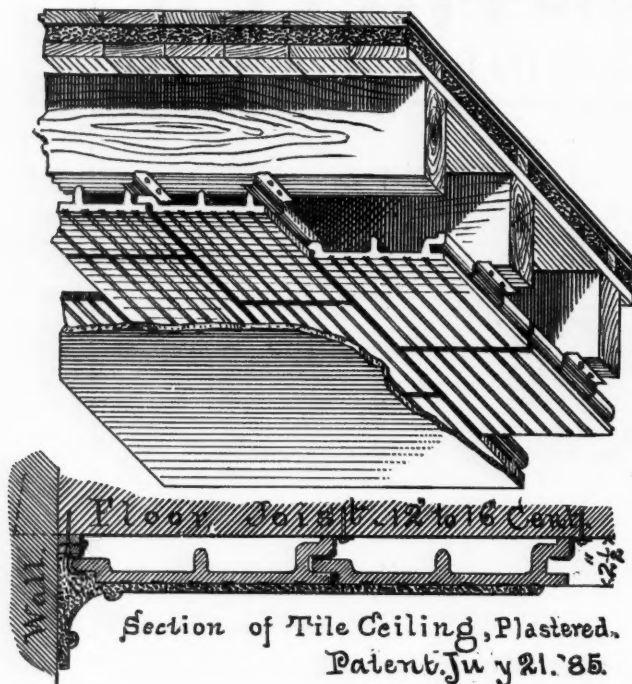
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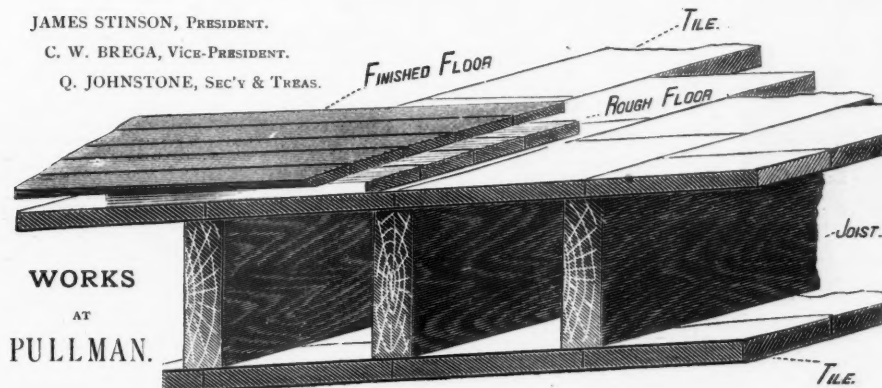


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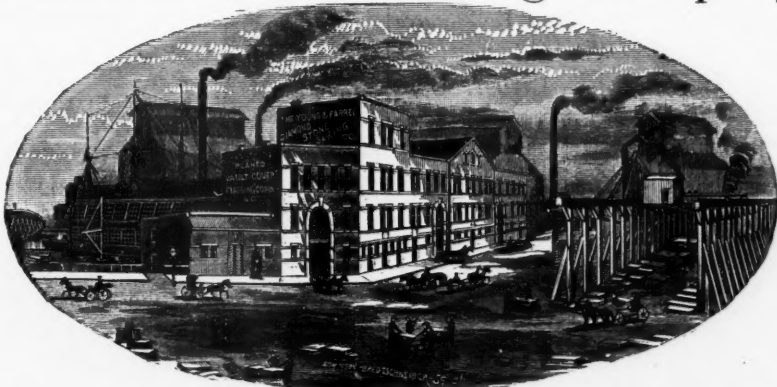
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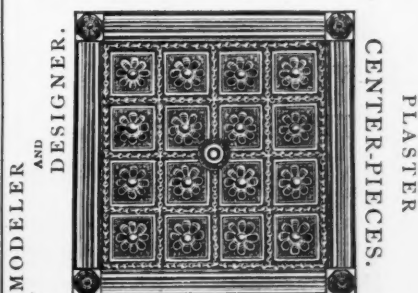
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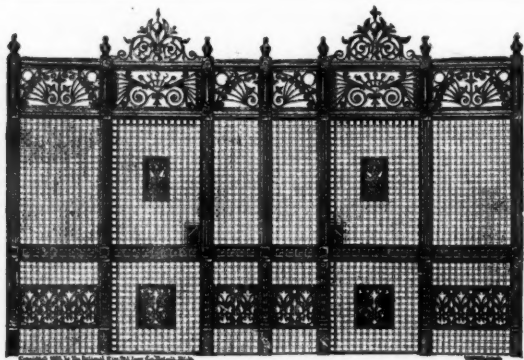
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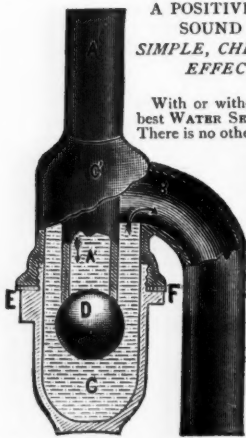
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Sealed proposals will be received at this office until 2 p.m., on the 20th day of October, 1886, for furnishing and putting in place all the iron furring, lathing and plastering required for the Postoffice, etc., building at Baltimore, Md., in accordance with plans and specification, copies of which, and any additional information, may be had on application at this office, or the office of the Superintendent, after September 15, 1886. Bids must be accompanied by a certified check of \$300 for iron furring and lathing, and \$1,000 for plastering.

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## PROPOSALS.

The Board of State House Commissioners for the State of Kansas will receive competitive plans for the completion of the central portion of the State house at Topeka, Kansas, at their office in Capitol square, Topeka, Kansas, on the fourth day of January, 1887, at 4 o'clock p.m.; said plans to consist of first, second and mezzanine floor plans, south and east elevations and transverse and longitudinal sections, all to a scale of eight feet to an inch, size of plan to be governed by plans of basement story, already adopted, to be seen at the office of the Board, style of architecture to be in harmony with the wings already built.

The Board of State House Commissioners will employ such skilled assistants as they may deem advisable to sit with them as an awarding committee. The Board of Commissioners will pay \$3,000 for the best plans submitted and \$1,500 for the second best, the plans for which premiums are awarded will become the property of the State of Kansas, with the right to use the whole or any part or any modification thereof without further claim from the authors for compensation or employment. Carefully prepared estimates of the cost of erecting and finishing the building will be required to accompany each plan submitted.

The Board reserve the right to reject any and all plans submitted.

By order of the Board of State House Commissioners of the State of Kansas.

E. B. ALLEN, Secretary of the Board.

## STONE.

Sealed proposals, in duplicate, will be received at this office until 2 p.m., on the 10th day of October, 1886, for furnishing stone for use at the Des Moines Rapids Canal and Dry Dock. Proposals will be accompanied by a written guarantee that in case the bid be accepted, contract will be entered into with good and sufficient security within ten (10) days after notice of such acceptance. Blanks, on which proposals must be made, containing specifications and detailed information, may be obtained on application.

A. MACKENZIE,  
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## WAREHOUSE.

Sealed proposals, in triplicate, subject to the usual conditions, will be received at this office, on the 12 o'clock noon on the 10th day of October, 1886—at which time and place they will be opened in the presence of bidders—for furnishing all labor and material necessary in the construction of a warehouse for the Quartermaster's Department at Custer Station, Montana Territory.

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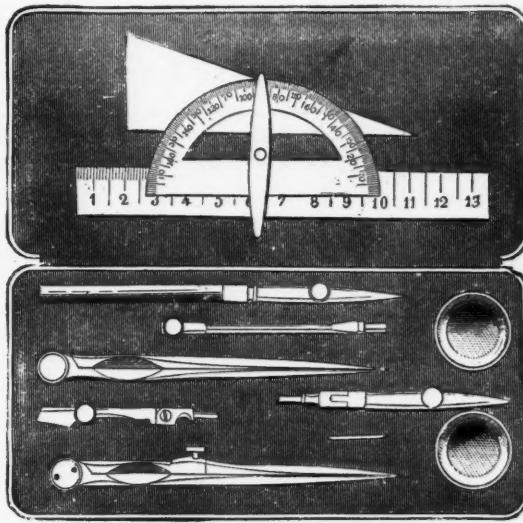
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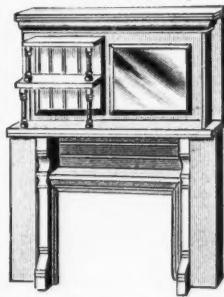
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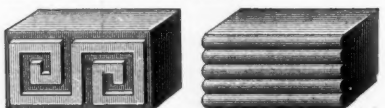
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| Stonemason.....         | 3 00           | 4 00          | 3 50           | 3 25           | 3 00             | 3 75              |                | 4 50              | 3 50               |                  | 4 50@5 00   | 3 00            | 2 75           | 3 00            | 4 00           | 3 50       | 2 75             |                   |
| Carver.....             | 5 00           | 4 50@5 00     | 5 50           | 5 00           |                  |                   |                |                   | 4 00               |                  | 5 00        |                 | 4 00           |                 | 3 00           |            |                  |                   |
| Stonecutter.....        | 3 50           | 3 75@4 00     | 3 50           | 3 50           | 75               |                   |                | 9 00              | 4 00               |                  | 5 00        | 3 50            | 3 00           |                 | 4 00           | 4 00       | 3 00             |                   |
| Stonesetter.....        | 3 00           | 4 00          | 4 00           | 3 50           | 3 50             |                   |                | 5 00              | 4 00               |                  | 4 00        | 4 00            | 5 50           |                 | 4 00           | 4 00       | 75               |                   |
| Roofer (Tin).....       | 75             | 75            | 75             | 1 25@2 25      | 2 75             | 3 00              |                | 3 00              | 2 50               |                  | 2 50@3 00   | 2 50            | 2 25           |                 | 2 50           | 2 50       | 2 25             | 2 00              |
| Slater.....             | 3 00           | 3 00          | 3 25           | 1 75           | 2 50             | 2 75              |                | 3 50              |                    |                  | 3 00        | 3 00            | 2 50           |                 | 2 50           | 3 50       | 2 50             | 2 00              |
| Stairbuilder.....       | 3 00           | 2 25@3 75     | 2 75           | 2 75@3 00      | 3 00             | 4 00              |                | 2 50              |                    |                  | 5 00        | 3 00            | 3 00           | 3 00            | 3 00           | 3 00       | 3 00             | 2 50              |
| Steamfitter.....        | 3 50           | 3 50          | 50@2 50@3 00   | 3 00           | 3 50             | 3 50              |                | 8 00              | 3 50               |                  | 4 00@5 00   | 2 50            | 2 75           |                 | 3 50           | 2 50       | 2 50             | 3 00              |



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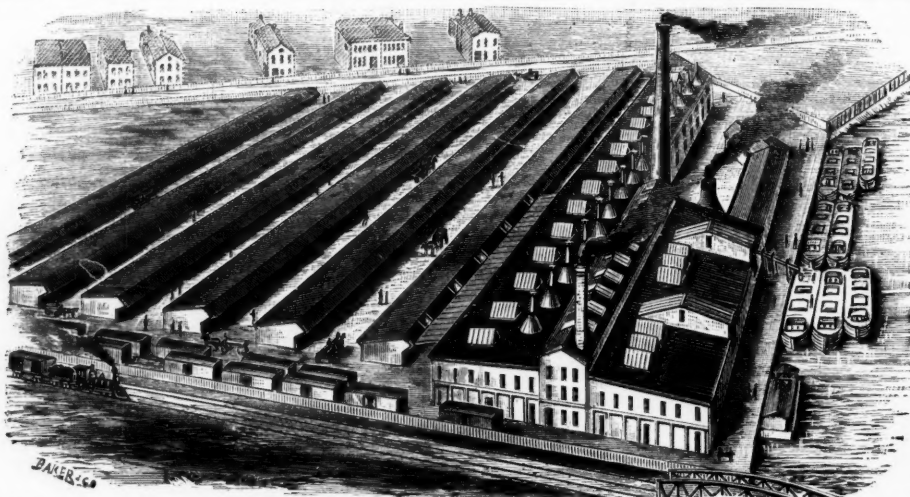
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# THE INLAND ARCHITECT AND BUILDER.

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**IN THE WEST.**

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THE Third Annual Convention of the Western Association of Architects will meet in Chicago on the third Wednesday (17th) of November next, and be in session three days. The convention will be held in the Weber Music Hall, corner of Wabash avenue and Jackson street. The Illinois State Association has taken upon itself the entertainment of the visiting architects, and every effort will be made to make the entertainment of visitors not only most enjoyable but profitable. Beside the regular notice to members, a special invitation to architects generally has been issued, as the intention is to make this convention a general reunion of all members of the architectural profession in the United States. The entertainment committee of the Illinois State Association, consisting of architects Samuel A. Treat, Louis H. Sullivan and Wm. Holabird, of Chicago, is well chosen, and nothing will be left undone that will contribute to the entertainment of visitors. In our November issue we will publish further full official information, but it is not too soon for every architect, whether a member of an architectural association or not, to arrange for his presence in Chicago upon the 17th day of November next, according to the invitations issued by the secretary of the association, published elsewhere in this issue.

THE annual meeting of the Chicago Architectural Sketch Club occurs November 8. In reviewing the year's work we feel that the club deserves words of congratulation. No kindred association in the country has shown a like amount of work performed, or general earnestness among its members. The adjudicating committee upon the club competition drawings has, by suggestion and criticism, influenced the members to use their best efforts, and while the competitions have not been all they could be in number of competitors, or in carefulness of study, there is a strong feeling that the work of the coming year will make up for any deficiency in the past. In behalf of the club we would not only voice its appreciation of the adjudicating committee—architects J. W. Root, L. H. Sullivan and W. L. B. Jenney—but also of the Builders' and Traders' Exchange, of Chicago, to which the club has for the past two years been indebted for a commodious meeting hall.

THE French government officially announces another *Exposition Universelle* to be held in Paris in the year 1889, from the fifth of May till the thirty-first of October. It will be located principally on the Champ-de-Mars, and will extend on both banks of the Seine for a considerable distance. The management will be vested in a council of three hundred members, sub-divided into twenty-three sections. In every department of France there will be, in addition, a local commission to develop and direct a universal participation in the exposition, and to raise funds for the special purpose of enabling mechanics, pupils, overseers and workmen of all kinds to visit the exposition for study and self-improvement. The exhibits are classified in nine groups, of which works of art constitute the first class, and education forms the second. The works of art are sub-grouped in seven divisions, painting, water-color and pastels, sculpture, engraving, architecture, carving and lithography. At this, all exhibits will be admitted free of duty, and will be protected from theft and depredation, by a special police provided by the administration. Care will also be exercised to prevent the unauthorized copying or reproduction of any article displayed, and especially to protect



patented goods. Water, gas, steam and all other motive power are furnished free to exhibitors, and no charge is made for space or the admission of goods. The selling price is to be marked, where possible, on every article, for the benefit of owner and visitor, and sales may be freely made, on condition that nothing sold shall be removed before the close of the exposition without a special permit. These and all other regulations seem to be on a scale of great liberality, and a distinguished success may be anticipated notwithstanding the frequency of expositions in these modern days.

THE "signs of the times" are that architecture in this country is just now in a transition state, whose outcome is to be regarded with peculiar interest. It seems quite within the range of possibilities that the distinctive American style, the absence of which has so long been a reproach to us, may be one of its results. The sudden, almost dramatic, termination of H. H. Richardson's remarkable career was apparently the one thing needful to establish him permanently on the pinnacle of fame and as the great exemplar for American architects. For some time past the growing impress of his influence has been marked in the designing of younger practitioners; now, the tide of imitation promises to sweep everything before it. Queen Anne and Victorian Gothic will disappear before Richardsonian Romanesque in all degrees and varieties of adaptation, imitation and appropriation; and while, as in all popular crazes, there will be much that is foolish and ludicrous, no doubt, the general result will be valuable and creditable. Hitherto, the style of American architecture has, on the whole, been English somewhat out of date, much as the fashions in this country used to be those which had prevailed in Paris a few seasons before. There has been of late a growing French influence, and, even, in some cases, a trace of German tastes in our style, but the substance of it was English, and many have thought, in view of our community of origin and tastes, that the day when American architecture would be emancipated from English leading strings was very far distant, if indeed it should ever arrive. Richardson's tastes, associations and training were distinctively French, and his style was the French Romanesque; yet his genius seems to have proved "stronger than blood" and to have severed American architecture for the time, at least, from English precedent. He has thus apparently taken the position in this country which Charles Eastlake and Norman Shaw occupy in England, and it is not impossible that the style he seems to have created here may in time perceptibly affect the architecture of England itself. That would be a friendly "turning the tables" on our mother country of which we might excusably be proud.

THE Art Institute of Chicago exhibits the energy and activity characteristic of the institutions of that city. The new building on Michigan avenue, corner of Van Buren street, approaches completion, and arrests attention by its beauty and imposing character. It is connected internally, though not architecturally, with the older building fronting on Van Buren street, and the two together constitute a considerable building devoted to the interests of art. The new building is thoroughly fireproof, and will contain the collections of pictures, statuary, and ornamental objects, while the school of drawing, painting and modeling will continue to occupy the present excellent rooms in the older building. The school rooms however are beginning to be crowded, the number of students last year approaching 250, and additional rooms will be provided in the new building. The long vacation terminated October 4, and all the

classes have begun again. A serious effort, which ought to be supported by the architectural profession, is in progress to establish a department of instruction in decorative designing. An evening class, under the very competent instruction of Mr. Louis J. Millet, of the firm of Healy & Millet, was maintained last winter, and the class will be continued with the same teacher both day and evening during the coming season.

THE instruction covers the principles and practice of designing as applied to house decoration, manufactures, illuminations, and the manifold uses of the present day. It includes free-hand practice, with pencil and charcoal, the symmetrical arrangement of patterns, the conventionalization of natural forms, the use of water colors, the study of historical ornament, in a word the essentials of the education of a designer. This work, of course, bears a close relation to the academic studies which have hitherto chiefly engaged the school. Fine art practice and decorative designing are properly supplementary to each other, and the closer the relations of the artist and the designer the better the productions of both. The best students of designing are often found among those who have had a severe training in drawing in the antique and life classes. This subject is well discussed by F. W. Moody, of the South Kensington school, in a little book called "Lectures and Lessons on Art," which ought to be read by every designer. In the present exposition there is an exhibition of students' work at the Art Institute, illustrating the usual branches of instruction in drawing and painting from the antique, and from life in various mediums, but we do not observe any examples from the designing class, perhaps because the work is as yet elementary. Mr. Lorado Taft, the sculptor, is to take the direction of the modeling classes this season, and has a plan of teaching design in relief, the success of which must depend greatly upon the demand for such instruction.

A RECENT dispatch from Washington, D. C., reads as follows:

In tearing out the plumbing in Secretary Manning's private office today, the workmen found, in a closet, a four-inch pipe and several smaller ones leading directly into the head of a sewer, without any trap or other contrivance to prevent the flow of sewer gas into the room. Mr. Manning's physicians pronounce his disease blood-poisoning from sewer gas, and say it was brought on, beyond doubt, by his sitting in that little room.

There are few cities in the country that have had a more terrible experience with sewer gas in buildings than Chicago. But there are other things which help to swell the mortality in our cities quite as much as sewer gas, and for which the latter is held responsible. Science and mechanism are guilty of many blunders, if their popular application can be taken as an evidence of their truthfulness. In no particular is this point so well shown as in the manufacture and use of base-burning stoves. We know that we take some risk in using these stoves as an illustration of this subject, but that risk is slight compared with the benefits which may arise from a proper understanding of the points which we wish to make. The convenience, the cleanliness, the cheerfulness, and the uniform temperature resulting from the use of anthracite base-burning stoves, are advantages of undisputed excellence. The economy is also a power in favor of these stoves. But mark the difference in the suppleness of motion, the flash of the eye, and the action of the mind, between those who spend their time in close rooms, heated by this process, and those who breathe a pure air, which has not been robbed of its oxygen, or charged with carbonic acid gas, by artificial heat, and the fetid exhalations of lungs and body.

TO awaken in the morning with a dull head, a parched throat, and a stomach which needs extra persuasion before it will manifest an affinity for food, are some of the evils

of breathing an air which, if manufactured at all, should only be applied to a lumber-drying kiln; but, worst of all, which renders the body as sensitive to the action of cold drafts and atmospheric changes as a needle to the pole. Without pointing out the remedy—too plain to all—or elaborating upon the science of this evil, it should be enough for all to be reminded of the fact that but few, if any, winter evils exist between Boston and the Mississippi which are so great as this. Further, the microscope demonstrates that typhus and typhoid fevers, and all their genera, diphtheria, etc., are generated by malarial poison. New York is an example, where the sewers and stoves murder 18,000 or more people annually, the death rate being over 34,000, while the normal rate should be about 12,000. The same evil prevails throughout the territory we have mentioned, and we do not believe that we can do a greater service than to urge a reform in stoves, sewers and ventilation. In the former we are glad to see a vast improvement within the past three years, but furnaces constantly fed by pure air and open grates are for the reasons given better methods of heating.

IT has long been supposed that steampipes and hot-air tubing used for house warming, were incapable of igniting wood by any temperature to which they could be raised, and such pipes are still often placed in the closest proximity to wooden joists, studding and flooring, with no more thought of danger than from the plumber's soilpipe and wastepipes. Yet in the light of recent discoveries this practice must be condemned as highly dangerous. Mr. James Braidwood, chief of the London fire brigade, states that wood exposed for some years to a temperature not exceeding 212° Fahrenheit, is partly carbonized, and will ignite without contact with flame. He cites, among other evidence, a fire in the Bank of England caused by a stove which stood on a cast-iron plate one inch thick, resting on a concrete bed of two and one-half inches thickness. The floor timbers beneath this concrete took fire from the heat of the stove. While water in the open air boils at a temperature of 212° F., the temperature of the boiling point rises under pressure. In the piping of a tall house, the pressure in the boiler of a steam-heating apparatus must be considerably increased, and with it the boiling temperature necessary to production of steam, and consequently the danger of fire.

ONE theory of the spontaneous combustion of wood is as follows: The wooden fibre long exposed to heat, as from steam or hot-air pipes, becomes slowly carbonized on the surface. In warm weather, this carbonized surface absorbs moisture from the atmosphere. On the approach of cooler weather, this moisture is given up, and the emptied pores absorb oxygen with a rapidity which produces a considerable rise in temperature, and may cause ignition. It is well known that substances in a finely powdered state burn much more easily than otherwise. This is illustrated by the ready combustion of iron filings in the flame of a spirit lamp. The same is true of wood in the form of shavings or sawdust, and the fact emphasizes the danger of packing steampipes in charcoal, as was formerly done, to prevent condensation. Another source of danger is illustrated by the following incident reported in the *Vienna Building Journal*: In the drying-room of a woolen factory a pine board was placed about four inches above a steampipe as a cover, and to prevent woolen fibres from lodging on the pipe. The building took fire, and the consequent investigation showed that the heat had distilled the resin from the pine board which, dropping on the hot pipe, ignited and set the premises on fire.

### The Disposal of Sewage of Isolated Country Houses.\*

BY WM. PAUL GERHARD, C. E., CONSULTING ENGINEER FOR SANITARY WORKS.

A SERIOUS and all-important problem presents itself to all builders of suburban and country residences, not located within reach of sewers. I refer to the question what method should be adopted by architects or householders to get rid of the liquid wastes from the household in a manner calculated to avoid at once all nuisance to sight or smell, all danger to health arising from the pollution of the soil, the water and the air, and all causes of contamination of water-courses, whether flowing streams, or ponds, lakes, estuaries and harbors. The problem is not at all a novel one, for nearly two thousand years ago Hippocrates discussed the same subject of the relation existing between health and soil, air and water, yet, if we contemplate, for a moment, the numberless filth reeking and disease-breeding privies and barbarous leaching cesspools which we encounter everywhere, and which apparently are accepted as necessary adjuncts to farm houses, summer residences, mechanics' dwellings, etc., we hope to be considered justified in again calling attention to the evil results of improper methods of sewage disposal, and in discussing briefly the proper remedies.

Let us begin with a consideration of the smaller farm houses, mechanics' cottages and laborers' dwellings. The crude methods usually adopted to get rid of all filth from these are the discharge of the liquids into some open ditch, or into some neighboring water-course, brook or pond, and the accumulation of the excreta in privy vaults. In other cases, slops are retained on the premises by pouring them directly in front of the kitchen window onto the surface of the ground, which is thus kept continually wet, and quickly becomes saturated with filth, or else the liquid sewage is stored in leaching cesspools or poured into disused wells. It seems unnecessary to explain at length the disadvantages and dangers of privies vaults and stagnant pools of slops, from a health point of view. The objections against them are well recognized, and hence such devices are now utterly condemned by all sanitarians as relics of primitive stages of civilization. The proper disposal of the slop-water of such small houses is so easily accomplished, wherever, as is almost always the case, a small vegetable garden, or lawn, or grape vine trellis, or an apple orchard adjoin the house, as to make us wonder why better methods than those indicated above are adopted as yet in comparatively rare instances. In all such cases, the sewage may, with advantage, be used to feed plants and fruit trees, or to irrigate the soil. The ruling principle should be to keep solid and liquid waste matters, as much as possible, apart, for this will facilitate the disposal of both. The kitchen water, soapsuds from washing, chamber slops, urine, and other fouled water, are easily disposed of, by a daily distribution in the garden, either by irrigation, or by subsurface irrigation. The slop-water should be collected every day in a tight tank and carried by hand, or carted in a wheelbarrow, to the garden, and there used to water plants, shrubbery and fruit trees, or to cultivate garden vegetables. Instead of by surface irrigation, the slop-water may be discharged into one or more lines of absorption drains, laid with open joints under the surface. For the smallest cottage, fifty feet of absorption tiles are sufficient, and in proportion, as the quantity of household sewage increases, the amount of tiles should be increased. The principal points of importance are that the sewage be applied to the soil while *fresh*, and before decomposition sets in, that it should be applied in moderate quantities only, to prevent oversaturation of the soil, that the sewage be applied on or near the surface of the soil, within reach of the oxidizing influence of the air and of the bacteria in the soil, and, finally, that the application be made intermittent, so as to give the soil, after each discharge, a chance to breathe, as it were, and to allow the finer solid particles to be oxidized and destroyed. An easy method of accomplishing the disposal of slop-water, where the house contains no plumbing fixtures, is to have near the house a hopper or receiver of wood or rustless iron, or, better, of earthenware, and provided with a strainer and a proper cover. From this a pipe may be carried underground to the absorption tiles, while the house sewage may be carried to and discharged into the hopper by means of a pail, thus sending rapidly a full volume of slops at proper intervals into the absorption tiles.

The solid excrements are taken care of in the case of small cottages quite as readily and inoffensively by adopting an earth or ash closet, in place of the usual privy, still so much *en vogue*, although long ago unanimously condemned by practical sanitarians. In the application of the dry earth system sufficient dried earth, garden loam, or sometimes coal ashes are mixed with the excreta to absorb all foulness, keep down all odor, and prevent putrefaction. Such earth closets work quite satisfactorily with only a little attention, and form a simple and cleanly substitute for the privy nuisance. They are manufactured in various

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grades, and with more or less complicated mechanism. As a rule, the simpler the arrangement, the better. If placed out of doors, the earth closet should not be located too far away from the house. The outer structure should be strong, substantial, with a good roof to protect it against rain or dampness, well lighted, well ventilated, not too much exposed to the rays of the sun, and preferably plastered on the inside as a protection in cold weather. A carefully kept, dry walk should lead to it from the house, and it is better to have the walk and the closet shed screened from view and from the prevailing winds. The excreta should be received in a movable wooden box, well tarred, or else in a galvanized iron pail, not too large, and of such shape and construction that it can easily be carried. The box or the pail should fit close up under the seat, and each time the closet is used, ashes or dry earth should be used as deodorizers, being thrown down either by a hand-scoop or by a mechanical apparatus. There can be scarcely any doubt about the economy, efficiency, and convenience of such apparatus in the case of small houses. The property of dry earth, of not only deodorizing, but also absorbing, and rendering harmless excreta of animals has long been well known. Some difficulty has been experienced in cases where the earth was kept too damp. According to recent observations a much smaller quantity of earth is required for earth closets, if the separation of the liquids and solids is at once effected. This may be accomplished by intercepting the urine under the seat, and removing it by a waste pipe. The closet is thereby more easily kept free from smell, and if properly used and well taken care of, it can be located in an extension of a dwelling without becoming a nuisance. The dry earth manure ought to be removed at frequent intervals, and in summer time used and dug under the soil in the garden attached to the cottage. In winter time it may be dried in outhouse and can then be applied over and over again. Ashes are sometimes used in place of earth, or else finely powdered charcoal, which latter is a well-known deodorizer. The latter can be applied with a mechanism similar to the one used in earth closets, and it is claimed that only about one-fourth the quantity will be needed. As charcoal is rather expensive this is an important consideration. Some also claim that removal need not be so frequent in the case of charcoal closets, but this is, at best, a doubtful advantage.

In cottages, or suburban residences of somewhat more pretension, the earth closet is sometimes located, for conveniences sake, in an extension of the cottage, and it then usually becomes desirable to have also a somewhat more convenient method of disposal of the slop-water, which would avoid exposure of the housewife or servant to the inclemencies of the weather. This may be secured by arranging a properly ventilated and trapped waste-pipe—a pipe two inches diameter is plenty large enough—to carry the waste from the kitchen sink, the laundry tub, and wherever this is provided for, from the bathtub, into a small receiving tank, located outside of the house, and placed below the depth to which frost usually penetrates. This tank may be a plain wooden box, or an earthen or iron tank, or finally a tank built of brickwork. It may be emptied in the plainest kind of an arrangement by hand, or else it may be discharged by an automatic device, such as a siphon, a tumbler tank, or other mechanical appliance. It may become useful, even in the case of small houses, to build some sort of a grease trap to prevent the grease from being discharged and finally clogging the small absorption pipes. It is, of course, assumed that the general topography of the lot is favorable to such an arrangement, in other words, that there is not a slope from the garden, or absorption field, toward the house, in which case disposal by gravity becomes impossible. If the earth closet is placed inside of a dwelling the same precautions should be observed which are taken in the case of water-closets. The ventilation of the apartment is an important matter, and should receive careful attention. As a rule, it is better to locate an earth closet in an isolated or detached part of the cottage. While an earth closet is inferior to the best water-closet, I have no hesitation in pronouncing it, if well taken care of, superior to many water-closets as usually arranged and kept.

The question whether a farm house or laborer's small cottage should be provided at all with plumbing work, and above all, whether it is wise to have a water-closet indoors, which we know requires a more or less complicated system of service pipes and a service cistern, is, more than anything else, one of convenience and comfort. The annoyance and cost of frequent repairs, and the difficulty in country districts of getting a mechanic to fix such apparatus when out of order, the danger of exposed pipes and traps freezing in mid winter, or sometimes the lack of an abundance of water for flushing, or the necessity of raising it by hand-pumping,—all these are considerations which may deter many from putting any plumbing work into their homes. It is undoubtedly much easier and less troublesome to deal with the sewage problem of cottages, if the strict separation of solids and liquids is adhered to. A water-closet in a house not only requires a larger discharge pipe than the two inch waste pipe for slop-water, but it complicates at once the whole arrangement. That it can be made quite safe, perfectly inodorous and inoffensive it is

not necessary for me here to assert. Those who have followed the recent improvements in house drainage and plumbing work will know that it is possible to select a good water-closet and fit it up in such a way as to be in all respects satisfactory. In point of cleanliness, I think it certainly stands ahead of any other device. Its advantages are many, but its disadvantages under certain conditions ought not to be overlooked. If a water-closet is used in a cottage, the solids should not enter the outside tank for slop-water, for they would soon clog the siphon or the absorption tiles, but they should be intercepted in a settling chamber and frequently removed. How this may be done will be explained later on when detailed reference is made to larger country houses.

(To be continued.)

### Architectural Ironwork.\*

BY C. W. TROWBRIDGE.

STRUCTURAL CAST-IRON WORK—CONTINUED.

**B**EDDING in and open sand requires a special floor, different from the ordinary clay floor on which flask and snap work are done. As the iron is poured into molds made directly in the sand floor, considerable depth of sand is required. Below the sand a layer of coarse cinders or other porous material is required, through which the gases can pass off. Sometimes lines of tile drain pipe are laid to points beyond the foundry wall. In other cases the gas is expected to come up around the molds through the floor wherever it gets a chance, but the porous layer at the bottom is important as furnishing a convenient place for the gas to go when the mold is full. Open sand is used only for rough footing plates or other pieces which can have one rough side. As an example I will describe the molding of a footing plate for a wall, such as mentioned when speaking of iron foundation.

Suppose we made our footing in 6-foot lengths; this would require each piece to be 6 by 12 feet, with six ribs running the 12 foot way. To mold this the patterns of the ribs only would be made, and bedded in the floor, spaced 12-inch centers, perfectly level, the sand rammed and leveled up between the ribs, and the top smoothed off with a straight edge. On the lines of the edges of the large bottom plate of the footing (which would be the top, as it is cast in the floor), boards would be placed and sand walls built up all around, say three inches high; then all ribs and all other patterns drawn out, leaving a mold in the floor, which only needs to be filled up with iron till it stands in the mold the proper thickness for the bottom of the footing, which is two inches in this case. What would in future be the bottom of the footing is now the top of the liquid iron, and exposed to the air. Any dirt, loose sand or bubbles will float to the top, and there is less probability of blow-holes in this than in any other kind of casting. Soon after the mold is poured it is customary to throw a few shovels of sand on the surface of the iron to retard radiation of the heat, and to make a skin on the casting. This sand floats on the top of the iron much the same as cork floats on water.

Bedding-in is similar in the first part of the process to open sand molding, but a cope or covering is added six inches or more thick, containing the shape of projecting parts, moldings, panels, or anything molded on top of the casting. This cope has pouring gates down through from the top, and risers, in which the fluid iron stands, giving additional pressure to the metal in the mold, which, in case of a cope six inches thick, is considered 225 pounds per square foot of surface of iron pressing against the cope. By calculating the amount of surface molders estimate how much pig they will have to pile onto the cope to keep it from floating off, or letting iron run out at the joints. Columns and cored work are often bedded in. Some eastern foundries are doing most of their architectural work that way. This is a very good method for lintels and heavy work where the metal is thick, but if there are thin places in the castings, the heat has a tendency to pass rapidly into the ground; so thin places cool faster than they can draw heat from thicker portions of the cast, resulting in shrinkage strains and trouble of various kinds. Where work is thin it is almost universally molded in flasks, which consist of a bottom board, the drag or bottom box, and a cope or top box, which lifts off the bottom box and allows the pattern to be withdrawn. These flasks usually conform approximately only to the size of the work molded, one flask often being used for several different kinds of patterns. They are generally made of wood, and while the cost of flasks is quite an item in the expense of a foundry, it cuts no such figure as it would if we cast columns on end and had to have iron flasks capable of standing high pressures. Suppose we want to cast a square interior column with ribs on the corners, flanges for bolts at the ends, and brackets on four sides for beams, girders, etc., the whole to be fireproofed when the building is finished. A wood pattern is made the size and shape of the outside of the column, allowing one-eighth of an inch in all directions for shrinkage. Brackets would be made loose, but their place is indicated by dowels, so they can be set in their exact positions. The end of the patterns would be continued out the whole length of the flask, the size and shape of the interior core of the column. This would mold a bearing for the ends of the cord in the sand mold to keep it in the proper place. The pattern would also be divided diagonally from corner into two halves, each the whole length of the pattern. The half of the pattern to go in the drag or bottom half of the flask would be laid on the smooth, plain board, called the follow-board, and the drag, which is open at both top and bottom, laid on it. Facing sand is now put in a thin layer over the whole pattern, and packed into the corners and odd-shaped places by hand; next comes a thick layer of coarser sand, then the molder shovels in a lot of filling sand, and proceeds to ram to an even pressure. It looks like a very simple matter if you watch a molder ramming a flask, but this is something that has to be done very skillfully. One hard stroke in the wrong place would surely spoil the cast. For instance,

\* Paper read before the Chicago Architectural Sketch Club, August 30, 1886. Commenced in Vol. VIII, No. 3.

the sand must be firm enough to stand the wash and flow of the iron entering the mold. When the mold is full, the pressure of the fluid metal, say two feet below the top of the pouring gate, is 900 pounds per square foot, and wouldn't fail to discover any soft places in the mold. The sand must also be porous enough to allow all the moisture to pass from the sand immediately surrounding the iron at once, as soon as the mold is filled, for it won't do to have the gas and steam blowing up through the iron, leaving blow-holes and cavities in the metal.

On one of the large buildings now in course of erection in this city, the foundryman discovered a little hole in the top rib of a column, and being of an inquiring disposition, he stuck a straw into the hole and found it went in nearly a foot. He then investigated, with a sledge hammer, and was surprised to find cavities nearly the whole length of the top rib. Evidently the molder had rammed the second layer of sand too hard above and around this rib, some of the gas was unable to escape, and had collected in this upper rib, making a long hole, which, of course, weakened the column. A small skin of sand and a little metal had formed around the outside of this cavity, consequently there was no outside indication of the defect, and only by accident this little hole showed where the trouble was. Similar investigations on other columns revealed the same trouble, and several of them got into the scrap heap. If the sand had been rammed harder still, the face next to the mold would have been loosened by the gas back of it, and an ugly scab come on the casting. After ramming the first layer of sand, others follow till the drag is full, then the bottom board is laid on top and the whole clamped together and rolled over into a nice level sand bed prepared for it. If this bed is not level the drag gets sprung and the column crooked. When the drag is nicely set in position, the clamps are taken off and the follow-board removed, the half pattern in the drag is exposed and the surface of the sand surrounding the pattern nicely faced with the trowel, and the upper half of the pattern set in place. Dry parting sand is sprinkled on to keep that in the cope from sticking to that in the drag. The cope is now set over the pattern, and the same operation in facing sand and different layers of backing gone through with as before. The cope differs from the drag in having bars crossing from side to side, every few inches, to hold the sand in place and allow the cope to be lifted off without any sand dropping out. These cope bars are cut out so that they clear the projections on the pattern an inch or so. Unless the molder is particular in ramming his cope he will leave soft places under each cope bar, which, when the cast is poured, will force a little, making ridges across the face of the work. Anyone passing along the streets in Chicago, when the sun is shining across the faces of columns, can see lots of cope bar marks even on our best buildings, making them look as if the columns thought of putting on state's prison garb. Round pins are put in through the cope for pouring gates and risers. Risers are usually put on the top of the highest points of projecting flanges or brackets, and the iron poured in at the other end of the cast. In this way any dirt collected in the mold will float along on top of the iron, and rising up come out at the riser.

The cope is lifted off and turned over, the patterns drawn out of both cope and drag, any broken places patched up and the facing powder of black lead, or some similar composition, dusted over the face of the mold and dressed down with hand tools. I saw a curious instance of the bad result of a mistake in facing powder. An apprentice mixed sea coal facing powder with facing sand for the first layer in the drag of a twelve-inch round column. When the mold was poured the facing swelled, making the sides of the mold wavy from the side joints down. Iron ran in over behind the little waves of the facing, so when the casting came out there was a lot of little tails hanging down from the joints. These were divided from the column by a thin film of facing so that they broke off, leaving a row of hollows in the sides of the column.

In some foundries when they have fine ornaments to cast onto thick heavy columns they skin burn the molds. This is done by dusting on a good, thick coat of ground rosin, mixed with flour, smoothing it down with hand tools, then sprinkling thoroughly with naphtha or gasoline and setting fire to it. This forms a hard crust, say  $\frac{1}{8}$  or  $\frac{1}{4}$  of an inch thick on the mold, and prevents iron washing off any of the fine lines of the ornament. I have heard men say that nice ornaments with fine lines could not be cast onto thick pieces; that the great heat would burn the ornament all out of shape. When anyone tells you such a thing as that ring your "chestnut bell" and bet them something fine they "don't know what they are talking about." Skin-burning is sometimes resorted to by molders who cannot run a big sill plate without it, as it prevents the mold chilling the iron as quickly as it would without that preparation. While speaking of sill plate let me say right here that it is a skillful man that can make a sill plate 6 by 12 feet,  $\frac{3}{4}$  inch thick, and have it come out straight. If the flask springs, which is quite common, the center will be  $\frac{1}{8}$  to  $\frac{1}{4}$  inch thicker and cool last, which is sure to warp the sill more or less. There are also lots of other things to make the sill come crooked. This trouble is so common that I have heard experienced ironfounders say they never saw a sill over 3 to 5 feet that was straight. Fortunately these sills can be sprung straight when the columns and other work come on them. Architects should be lenient in the matter of superintendence in such things.

(To be continued.)

THE following recipe for a waterproof coating to prevent dampness in walls is given by a German technical paper. Take ten parts caoutchouc, ten parts pulverized chalk, twenty parts oil of turpentine, ten parts bi-sulphide of carbon, five parts colophonium and five of asphalt; mix thoroughly and shake, and subject to moderate heat until all soluble ingredients are dissolved. Brush the wall surfaces perfectly clean and apply this preparation with a broad brush as high as the dampness is likely to extend. It is said that if this coating is made and applied with proper care the wall will become permanently dampproof, and may thereafter be painted or papered with perfect security. It seems worth a trial.

## An American Institute Competition Code.

CHICAGO, September 7, 1886.

Editors *Inland Architect and Builder* :

I inclose copy of schedule of competitions adopted by the American Institute of Architects sixteen years ago, which I promised to send you as soon as I could find a copy.

It will be observed that the competition for the Kansas City Chamber of Commerce was very nearly in accordance with the conditions therein expressed.

Yours truly,

P. B. WIGHT.

AMERICAN INSTITUTE OF ARCHITECTS.

SCHEDULE OF TERMS regulating Open and Close Competitions for Architectural Works, adopted by the American Institute of Architects in Convention assembled, November 8 and 9, 1870, and recommended to all Architects, Building Committees and Proprietors throughout the country.

1. The instructions must not require more drawings or estimates than are necessary in order clearly to explain the design, and should require that all the designs submitted be drawn to a uniform scale, which must be clearly defined, and that all perspectives required be drawn to the same scale as the geometrical drawings, and on a plane at the corner of the building nearest the point of sight; a deviation from which will cause their rejection.

2. In case the amount to be expended is limited, the instructions must state that an excess of ten per cent on the expense of executing any design, over and above the sum mentioned, will exclude it from the competition, the amount of expense to be determined by the professional experts in the jury; and in case the amount to be expended is not fixed, then the competitor may use his own discretion as to the costliness of the design which he makes.

3. A design will be excluded from the competition if sent in after the stated period, and if it contains deviations from the instructions. If, from any of the above reasons, all submitted designs are rejected, then the jury are bound to publish reasons which led to their verdict.

4. The period given for preparing the design must be long enough, not only for perfecting it and preparing the necessary drawings, but must make some allowance for the ordinary occupations of competitors. An explicit statement must be given as to the time when the decision on the merits of the designs is to be rendered, and that all designs shall be returned to the authors of the same. An architect's drawings are his own private property, unless paid for, in which case they are for the sole use and benefit of his client; but the actual drawings still belong to the architect who made them.

5. The designs should be submitted to a jury of experts, whose decision is to be final. One-half of the jury should be architects, and, in the case of an open competition for a public building, they should be selected by the Institute of Architects or by its Board of Trustees; the other half to be appointed by the Building Committee or owner. The jury must be named in the instructions, which they shall have sanctioned before publication. No person can be competent to serve as juror who submits a design, or is in any way interested in any design submitted, or who has not renounced all intention of participating in the execution of the work.

6. All designs submitted, in open competitions for public buildings, should be publicly exhibited two weeks before the decision is made.

7. In the case of open competitions the first premium must not be less than the amount which the architect would have received had there been no competition, and at least an equal amount should be divided among the other competitors, according to the merits of the designs submitted.

8. It is recommended that, in close competitions wherein the number of competitors is limited, a sum equal to the full value of one design be divided equally among the authors of all except the premiated design, which shall be compensated for as provided in the last preceding rule.

9. The instructions must state that in case the building is erected after any of the designs submitted in competition, it must be given in charge of the author of the first premiated design, who is to be employed at the usual compensation; and if any other designs, or part of designs, are used, it can only be done with the consent of the authors of the same; and they must be compensated for the full value of the designs or parts of designs used, irrespective of the premiums that may have been awarded.

10. The premiums must be awarded under all circumstances, for the designs which may have been admitted in competition.

11. It is recommended that in the schemes of competition it shall be provided that the names of the competitors shall not be known to the jury.

## An Immense Railway Transfer.

THE recent conclave of Odd Fellows at Boston occasioned one of the largest transfers of passengers which has ever occurred in this or any country. The Chicago & Grand Trunk, and the Grand Trunk railways demonstrated their capacity for handling the largest passenger business called for by the transfer of 6,500 passengers in safety from Chicago to Boston, the only accident which occurred being the breaking of one pane of glass in a Pullman car by a tree which was blown over by the storm. To understand the enormity of this problem in railroading it is only necessary to state that there were required one hundred and sixty locomotives to carry the trains through to Boston. There were ten sections of seventeen cars each, one of which left every twenty minutes until all were moving. They all arrived at Suspension Bridge on time. The principal point of interest is the fact that this was performed without accident. There are other points of general interest, however, such as the checking and handling



of 1,600 pieces of baggage, the exchange of tickets for the 6,500 people, which required about twenty-four extra ticket sellers, and the marshaling and assigning to proper cars and seats, of this throng in one not over-large depot. The general passenger agent of the Chicago & Grand Trunk railway at Chicago, Mr. W. E. Davis, and his aids undertook and successfully carried out this task, which many prominent railroad men have said they would not wish to attempt.

### Our Illustrations.

Design for "Tuscan Lodge" building, St. Louis, Mo., Ramsey and Swasey, architects.

High School building, Rockford, Ill., M. L. Beers, architect, Chicago. The plan is nearly square, about 80 by 80 feet, two-stories and basement, walls of pressed brick set in red mortar, with terra-cotta trimmings, shingle roof, painted; finish of clear pine; hardwood floors, deadened; a perfect system of ventilation, and every convenience and improvement make this a model school building; cost about \$30,000.

#### KANSAS CITY EXCHANGE BUILDING COMPETITION.

The descriptions here given accompanied the drawings submitted in the competition.

*Design submitted by Architect James W. McLaughlin, Cincinnati, under the device of a letter K inclosed by a circle.*

In submitting the accompanying design for your proposed Exchange Building, I have endeavored to adhere as strictly as possible to your printed instructions.

My plan was made before I received your bulletin, stating that the areas could extend out on the sidewalk, but I think it better to set back on the south and west sides of building, as neither the sidewalks nor the streets are very wide, and the effect of the building would be enhanced.

I propose fireproof construction throughout, iron floor beams, with hollow fireclay arches between, and columns and girders protected with porous terra-cotta.

The exterior of the basement to be roughly-hewn red Missouri granite, and the dressings of superstructure either of granite, or of Long Meadow brownstone; staircases of iron with slate or Medina stone treads. The public spaces in banks, the waterclosets and corridors to be tiled, and the remaining floors of yellow pine on strips, the interstices being filled with concrete mortar.

*Design submitted by Architect W. W. Boyington, Chicago, under the device of a star.*

Basement of brownstone, first story of brownstone and brown brick, the balance dark red brick with brownstone and terra-cotta trimmings; purple slate roof; corridor floors marble tiling; corridors wainscoted with marble; large and small halls are entirely surrounded by brick walls, so that if floors were built of wood, fires would be confined to parts of the building only.

It will be further observed that most of the partitions, and all the principal division and supporting walls are to be built of brick, as they are mostly direct bearings from the foundation up.

The plans have been carefully studied with a view to secure a permanent structure, to be erected on practical principles as well as theoretical. With the principal interior walls of brick dividing the floors into separate sections, the building can be made comparatively fireproof with wood floor joists, deafened above, and tiling on the lower or ceiling surfaces.

Waterclosets are placed nearly one above the other, simplifying the plumbing and sewerage.

Provision has been made for space for perpendicular elevator cylinders if that style elevator is used. If horizontal, then locate cylinders in sub-basement.

Each half of the building on every floor has two spacious vaults for general use.

If the restaurant should be required larger, there is plenty of available room under the sidewalk on that side which might be utilized.

The boilers will be located in the court nearest Wyandotte street.

There will be a track laid from in front of boilers to the front on Wyandotte street under sidewalk, where the coal can be dumped directly into car.

The heating of main hall will be by both direct and indirect radiation. Indirect, by coils in sub-basement, over which passes fresh air, conducted from thence to flues in the piers and delivered in the main hall about five feet above the floor. Direct, from coils placed under the windowsills with circulation from within the room.

Natural ventilation for both halls will be through the corner turrets.

The artificial ventilation will be by the Exhaust system, namely, by fans in the attic, discharging above the roof through the flue in right hand octagon of stair hall; also, fans in the basement, exhausting from the floors, so arranged to force air drawn through spray of water into the hall in summer.

Basement, first and principal stories to be ventilated in the same manner. Fresh air to supply the indirect coils can be brought from the top of the building through the left hand octagon flue of stair hall.

Please observe other vent flues of large dimensions, namely, the one in which the smoke flue is placed, and a corresponding one opposite on the other side of the building.

Janitor and watchman's rooms are to be placed in the attic, or they can occupy some of the rooms on the fifth floor about the courts.

NOTICE has been received that Erskine W. Fisher, whose specialties are Stettin Portland cement, German Asphalt mastic, etc., has removed from No. 78 Beekman street to the Wells building, No. 18 Broadway, New York.

### Association Notes.

WESTERN ASSOCIATION OF ARCHITECTS.—Convention will be held November 17, 1886, at Chicago. John W. Root, Chicago, secretary; W. L. B. Jenney, Chicago, secretary of foreign correspondence.

ILLINOIS STATE ASSOCIATION OF ARCHITECTS meets the first Thursday of every month, at 15 East Washington street, Chicago. Annual meeting first Thursday in October, 1886. Louis H. Sullivan, Chicago, secretary.

MISSOURI STATE ASSOCIATION OF ARCHITECTS meets at St. Louis on the second Tuesday in January, 1887. Thomas B. Annan, St. Louis, secretary.

KANSAS CITY SOCIETY OF ARCHITECTS meets Monday afternoon of each week, at 4 o'clock. Annual meeting second Saturday in April, 1887. F. B. Hamilton, secretary.

THE ARCHITECTURAL ASSOCIATION OF IOWA, annual meeting, second Wednesday of January, 1887. C. H. Lee, Des Moines, secretary.

THE ARCHITECTURAL ASSOCIATION OF MINNESOTA meets every other Tuesday at Minneapolis and St. Paul alternately. Annual meeting January 4, 1887. Irving W. Kelley, Minneapolis, secretary.

KANSAS STATE ASSOCIATION OF ARCHITECTS meets at Topeka on the third Tuesday of January, 1887. H. M. Hadley, Topeka, secretary.

ASSOCIATION OF OHIO ARCHITECTS meets semi-annually. Next meeting third Thursday in January, 1887. O. C. Smith, Cincinnati, secretary.

ASSOCIATION OF TEXAS ARCHITECTS meets at Austin on the third Tuesday of January, 1887. S. A. J. Preston, Austin, secretary.

NEBRASKA STATE ASSOCIATION OF ARCHITECTS meets first Wednesdays in January, April, July and October each year. F. M. Ellis, Omaha, secretary.

THE CHICAGO ARCHITECTURAL SKETCH CLUB meets every alternate Monday, Builders' and Traders' Exchange. W. G. Williamson, secretary.

THE WESTERN SOCIETY OF ENGINEERS meets the first and third Tuesdays of each month at 4 o'clock P.M., at 15 East Washington street, Chicago.

THE MASTER PLUMBERS' SOCIETY, of Chicago, meets first and third Wednesdays of the month, 7:30 P.M., at 15 East Washington street.

#### ILLINOIS STATE ASSOCIATION.

At the annual meeting of the state association on the 7th instant, through a misunderstanding, a quorum was not present. A special meeting will be called for Saturday, 16th inst., at 2:30 o'clock. Beside the election of officers for the ensuing year, the sanitary law will be finally discussed, and the arrangements for the entertainment of members of the Western Association attending the convention, November 17, 18 and 19, will be made.

#### AMERICAN INSTITUTE OF ARCHITECTS.

A telegram has been received from Architect George C. Mason, Jr., secretary of the American Institute of Architects, stating that the place and date of the annual meeting of the Institute has not yet been decided upon, but will be at a meeting of the trustees at New York next week.

#### THE WESTERN ASSOCIATION OF ARCHITECTS' CONVENTION.

Four circular letters have been issued by the secretary of the Western Association of Architects. They should be read and noted by not only members of the association, but by members of the profession generally. Each is equally important.

The general notice to members as issued by the secretary, reads as follows:

##### WESTERN ASSOCIATION OF ARCHITECTS, SECRETARY'S OFFICE.

The third annual convention of the Western Association of Architects will be held in this city on November 17, 18 and 19. It is the expectation of the officers of the association that every member who can make it possible will be present. Every effort will be made by the officers to make this convention of the utmost interest to the members attending it.

The work of the local committee of arrangements will be greatly facilitated if members desiring to attend the convention will send notice of such intention to my address at as early a date as possible.

It would also be desirable if members who have business or matters of interest to present, would at once send notice of the same to me, so that it can be acted upon by the Executive Committee before the opening of the convention, and so that if found expedient such business or suggestions can be made a part of the fixed business of the convention.

JOHN W. ROOT, Secretary W. A. A.,  
Chicago, October 5, 1886. 115 Monroe street, Chicago.

That calling for a general contribution of drawings to the exhibit in connection with the convention, should be responded to by every architect, and to the limit of the possibilities of his office. It reads:

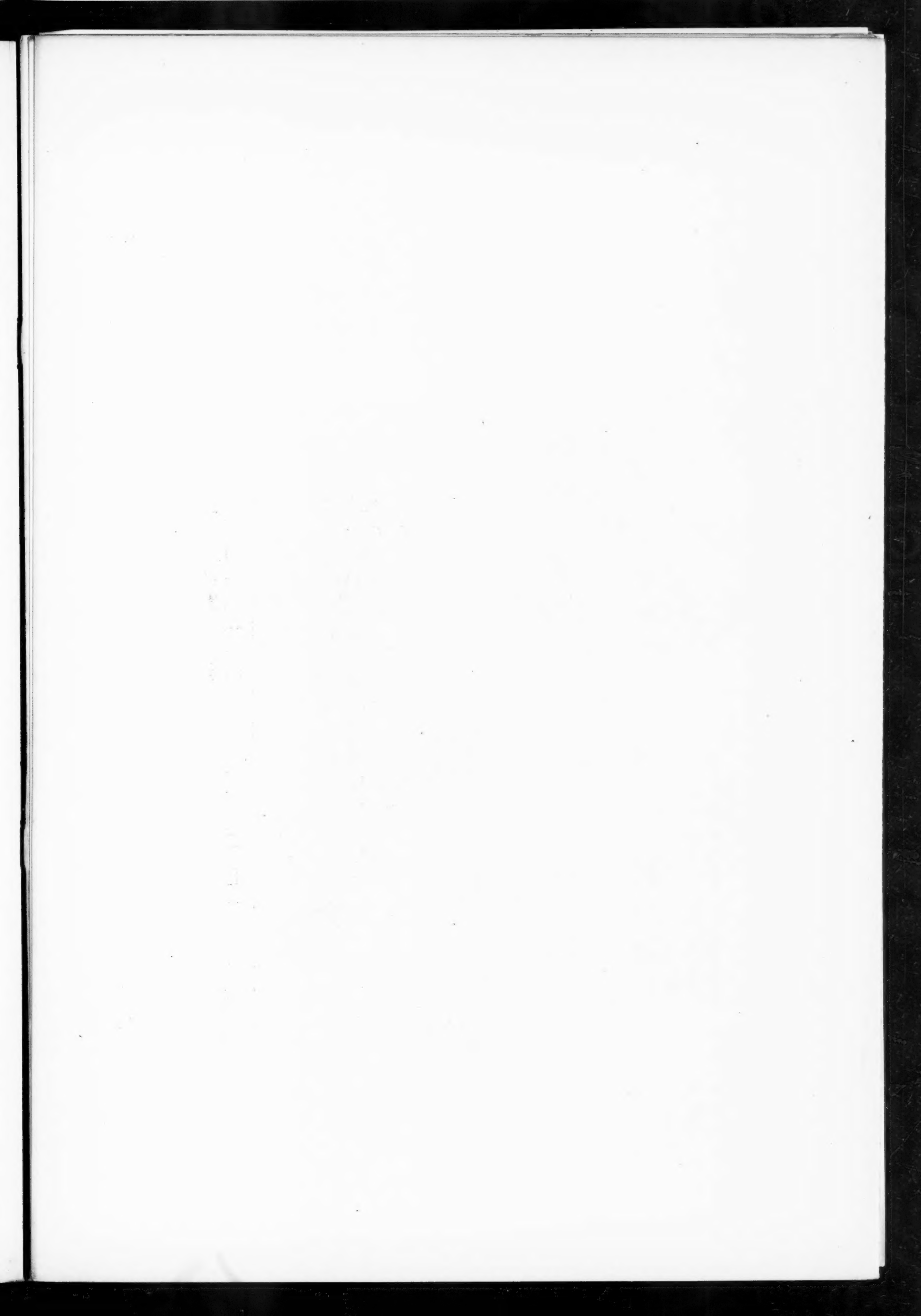
##### WESTERN ASSOCIATION OF ARCHITECTS, SECRETARY'S OFFICE.

At each annual meeting of the Western Association of Architects, there has been an exhibition of drawings illustrating work executed by the members. Hitherto this work has not been as adequate as it should have been.

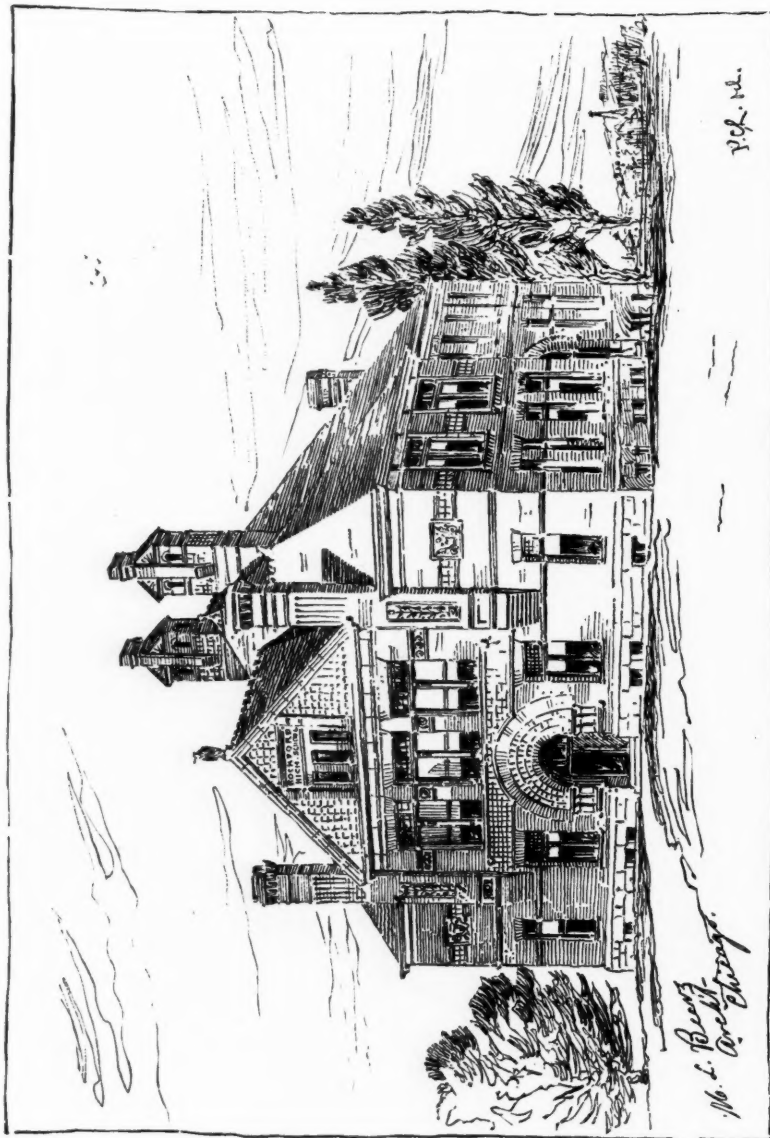
It is hoped that at the November meeting this year, each member will see that his contribution will fully illustrate his own work for the past year; for by this means we will have an admirable opportunity for study and comparison. Such a full exhibition, moreover, will tend to increase the *esprit de corps* and good fellowship of the association. In selecting subjects, it should be borne in mind that water color, pen and ink, and pencil drawings will be acceptable; and that the object of the exhibition is not so much to show beautiful drawings, as the general character and interesting details of work actually executed.

The secretary of the association will be glad to receive all drawings, which should be boxed and shipped prepaid, to W. S. Thurber, 210 Wabash avenue, between November 7 and 14. Mr. Thurber will, after the convention, box and reship the drawings, charging only the cost.

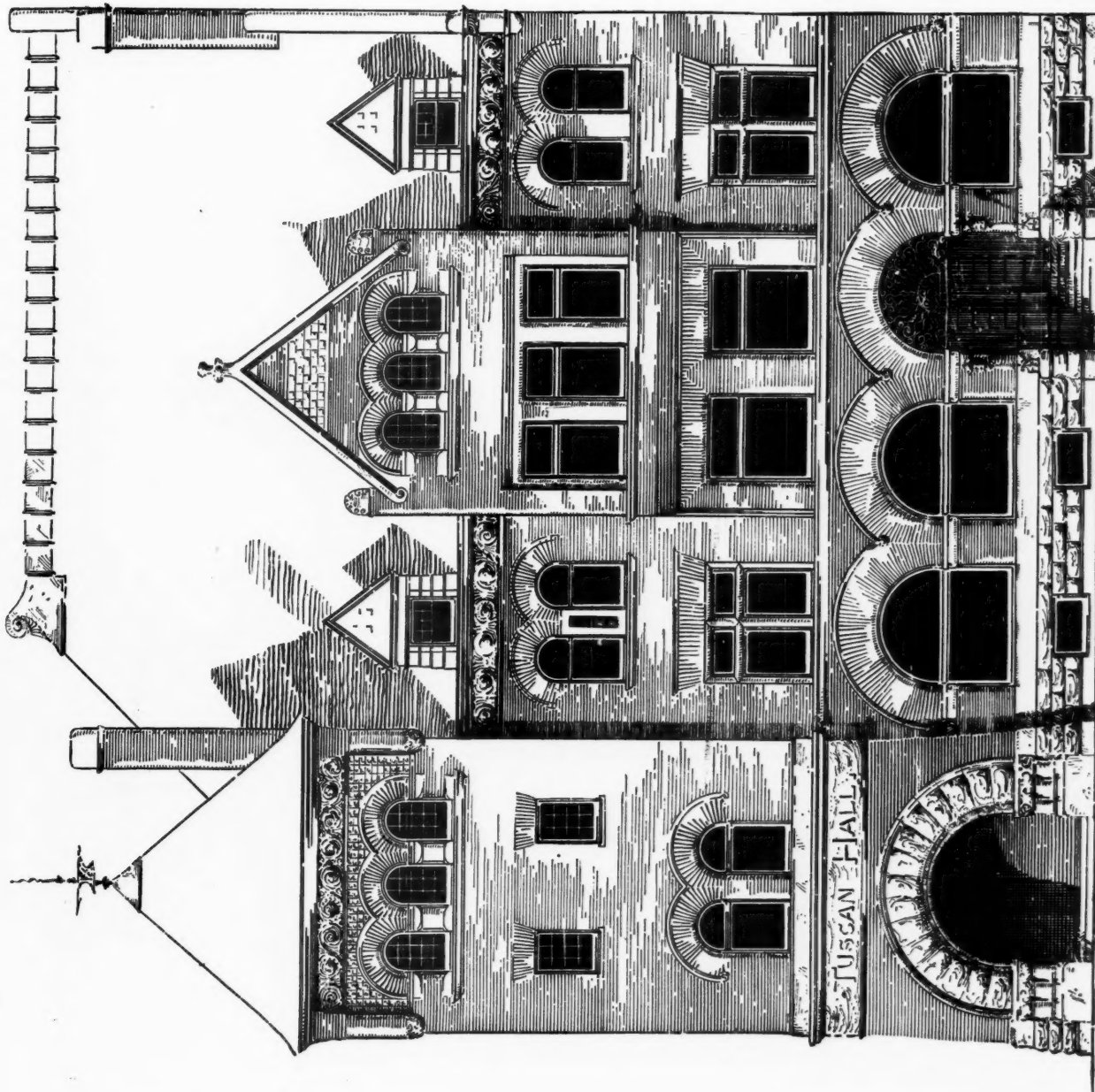
JOHN W. ROOT, Secretary W. A. A.,  
Chicago, October 5, 1886. 115 Monroe street.







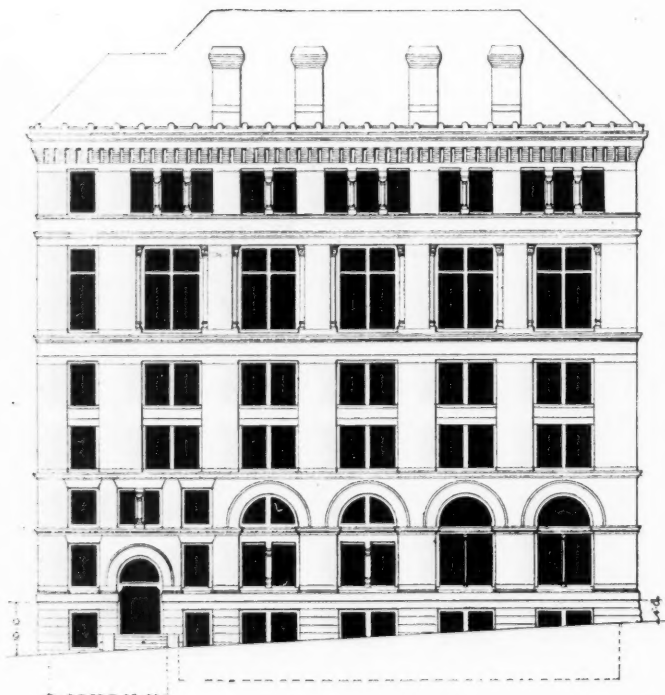
ROCKFORD HIGH SCHOOL.



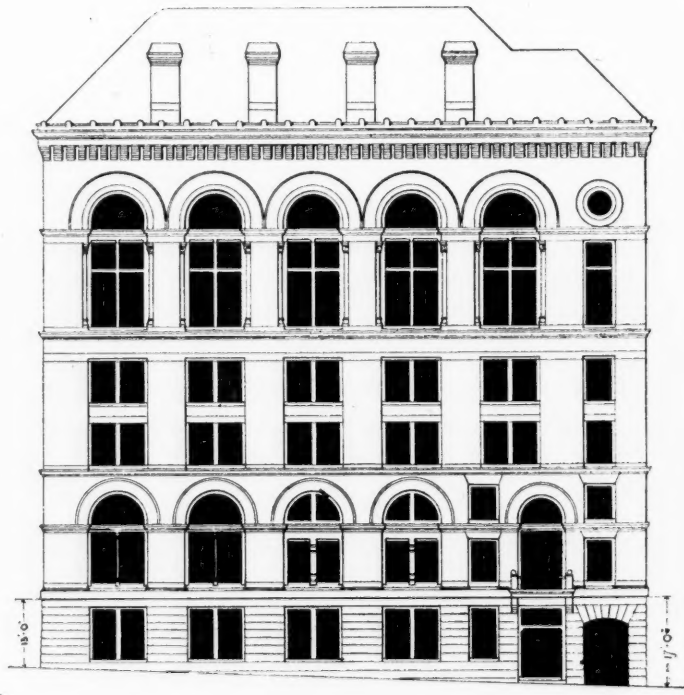
DESIGN FOR "TUSCAN LODGE" BLDG. ST. LOUIS, MO.

RAMSEY & SWASEY — ARCHITECTS





ELEVATION ON CENTRAL STREET



ELEVATION ON WYANDOTTE STREET

(K)

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COMPETITIVE DESIGN FOR KANSAS CITY EXCHANGE BUILDING,

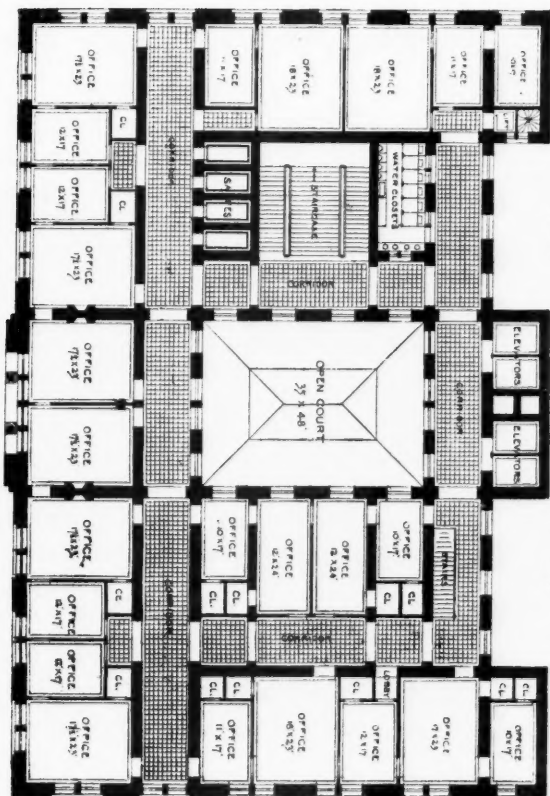
SUBMITTED BY "K," JAMES W. McLAUGHLIN, ARCHITECT, CINCINNATI.



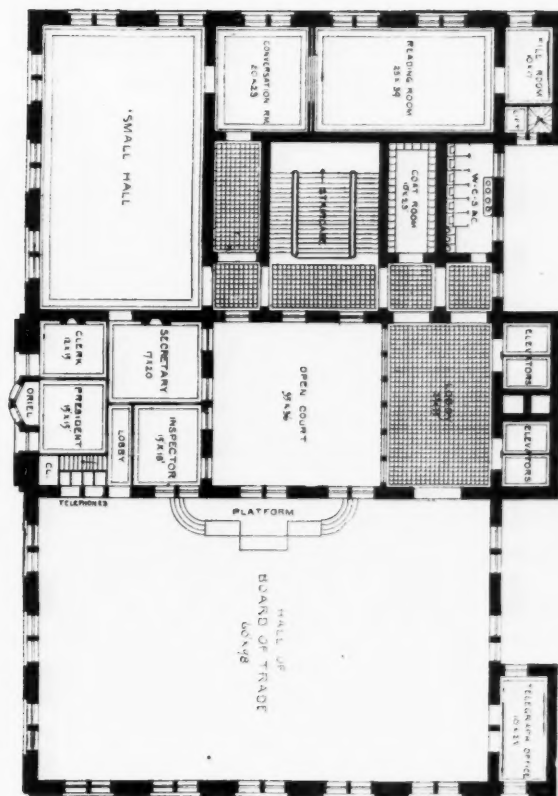
TRANSVERSE SECTION  
THROUGH C-D



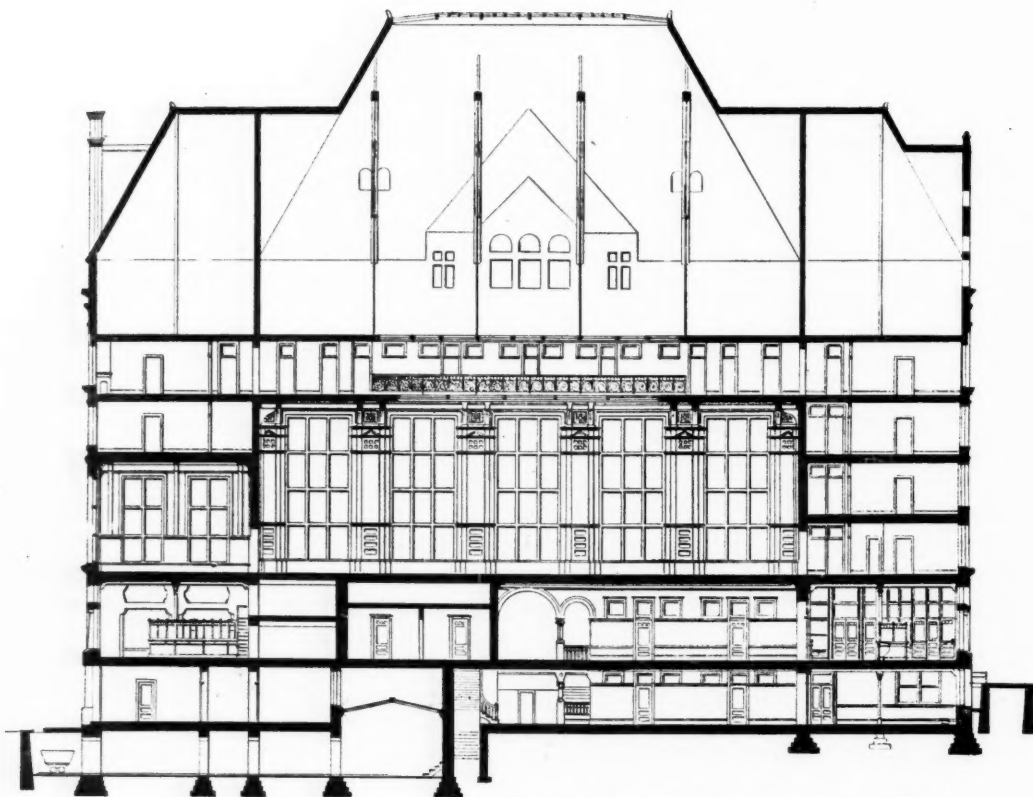
LONGITUDINAL SECTION  
THROUGH A-B



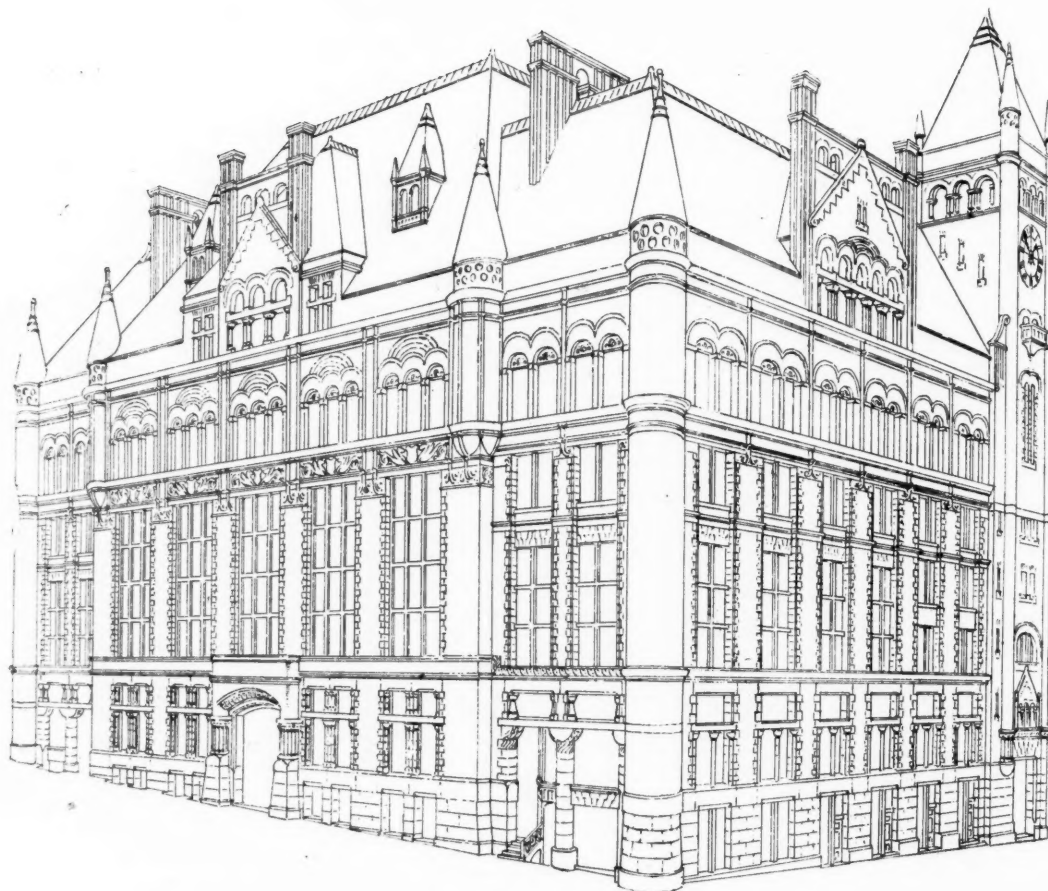
PLAN OF 2d & 3d FLOORS



PLAN OF FOURTH FLOOR



LONGITUDINAL SECTION ON LINE "A"



PERSPECTIVE VIEW

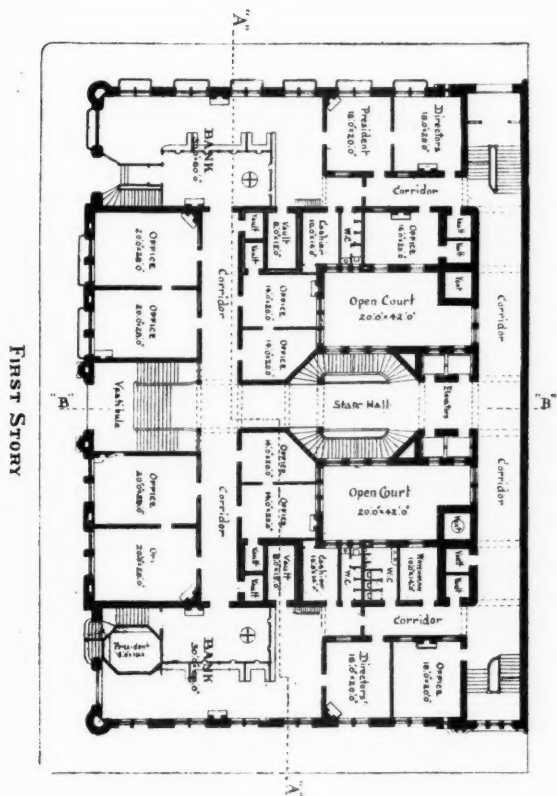
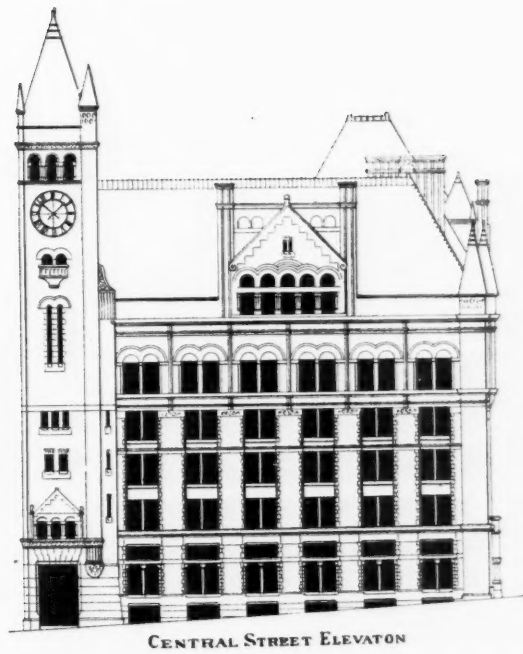
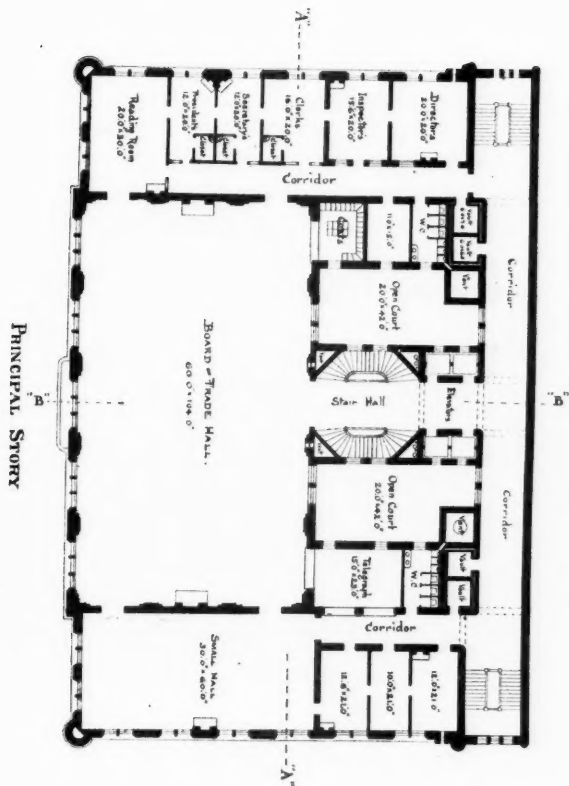
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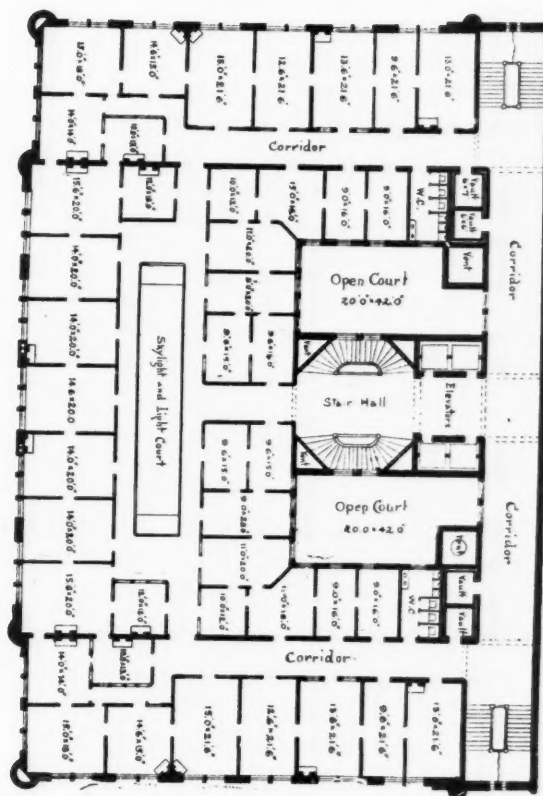
COMPETITIVE DESIGN FOR KANSAS CITY EXCHANGE BUILDING,

SUBMITTED BY "STAR," W. W. BOYINGTON, ARCHITECT, CHICAGO.





FIFTH STORY





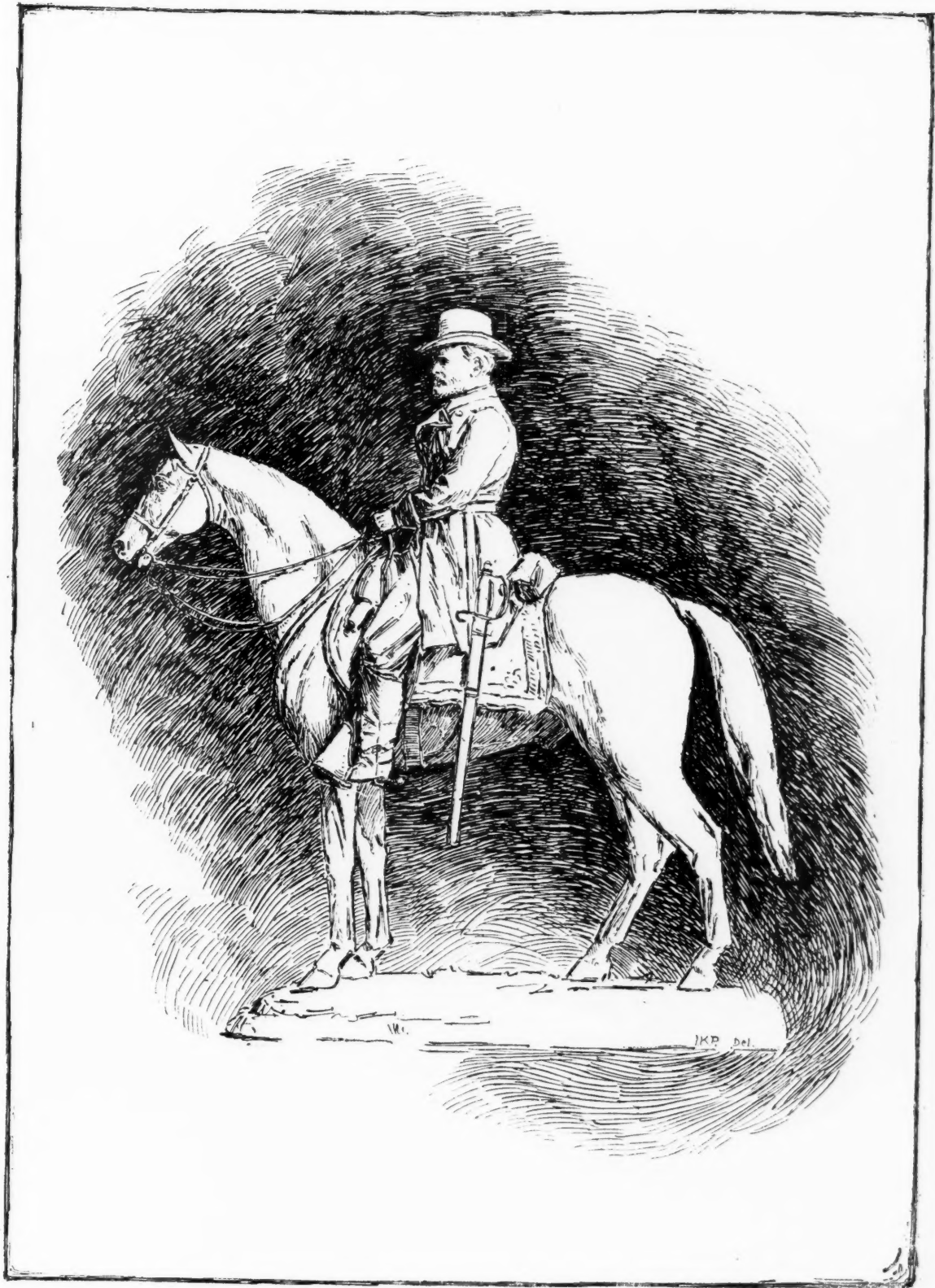
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*Inland Architect and Builder Print.*

SECOND PREMIATED DESIGN OF EQUESTRIAN STATUE FOR GRANT MEMORIAL, CHICAGO.

By J. H. MAHONEY, SCULPTOR,

*The accepted artist of the Hon. Morton McMichael Statue, Fairmount Park, Philadelphia; the Hon. Chas. West Statue, Cincinnati; the Chisholm Bas Reliefs, Cleveland; the Minard Group, Springfield, Illinois; the Statuary of the National Pilgrims, at Plymouth, Massachusetts, and others.*



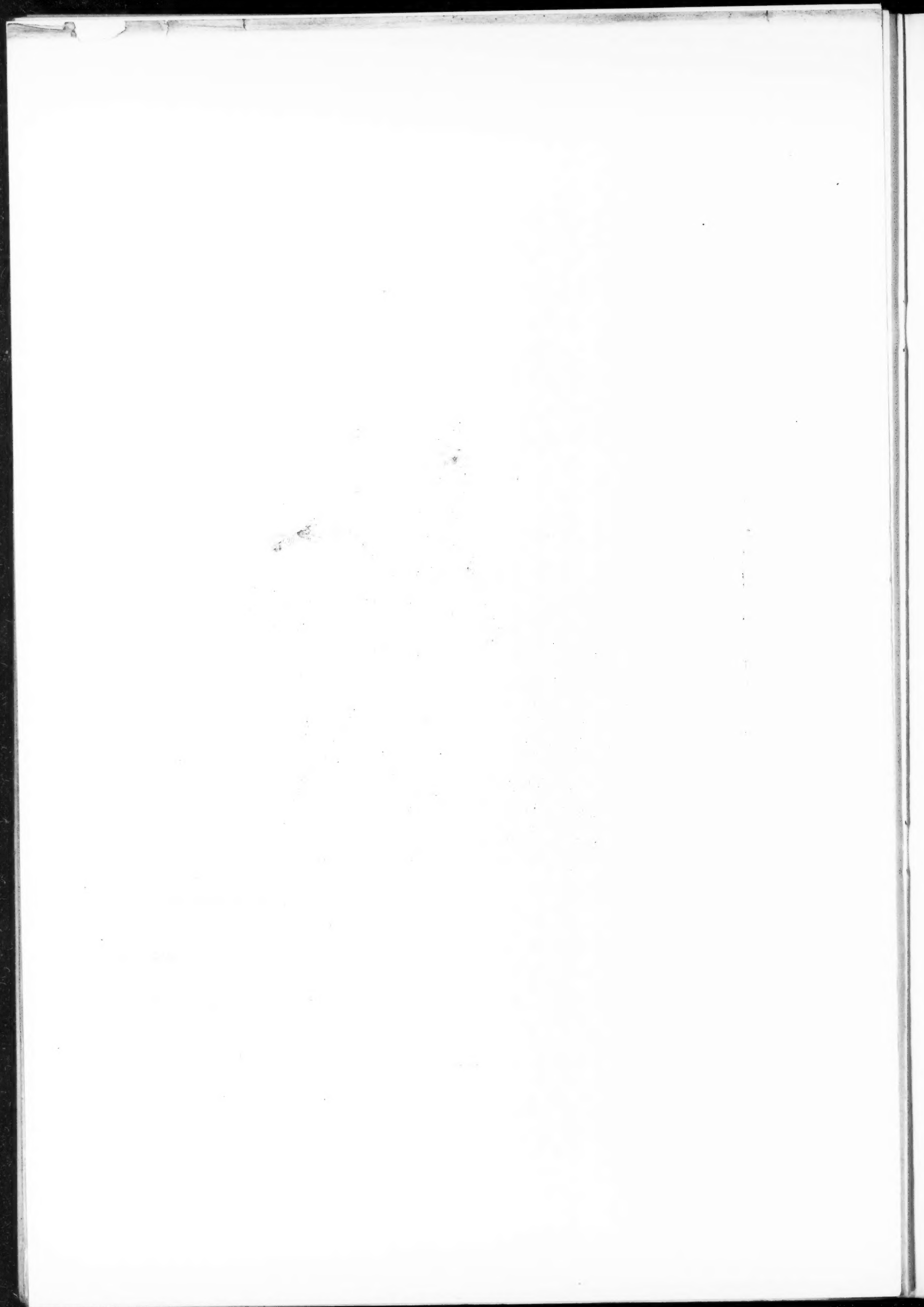
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FIRST PREMIATED DESIGN OF EQUESTRIAN STATUE FOR GRANT MEMORIAL, CHICAGO.

BY LOUIS T. REBISSE, PROFESSOR OF SCULPTURE, CINCINNATI UNIVERSITY, CINCINNATI, OHIO.





The following is especially directed toward the members of the American Institute of Architects, and extends a cordial invitation to all such to be present at the Western Association Convention in November:

WESTERN ASSOCIATION OF ARCHITECTS, SECRETARY'S OFFICE.

Two years ago the Western Association of Architects was formed. Its object was to accomplish in the West the work already being performed by the American Association in the East, and then to cooperate with the American Institute in all questions relating to the higher character and increased influence of the profession.

To most perfectly realize these ends, the Western Association desires to be in the fullest accord with the older organization; so that, although each shall have such special regulations as best adapt it to its particular section of country, in all essential respects the sentiment and influence of the two bodies shall be identical.

The next convention of the Western Association will be held in Chicago, November 17, 18 and 19. The convention will feel honored by the presence at its deliberations of any members of the American institute who can be in Chicago at this time.

October 6, 1886.

JOHN W. ROOT, Secretary W. A. A.

A general invitation to all architects in regular and honorable practice in the United States has been issued. It cordially extends to these a hearty welcome to Chicago, and concludes the list of invitations, which are so general and so broad in scope as to make any architect within the Association or out of it an honored guest at this great convention. It reads:

WESTERN ASSOCIATION OF ARCHITECTS, SECRETARY'S OFFICE, CHICAGO.

The Western Association of Architects was formed two years ago, and now embraces about two hundred of the leading architects from all of the southern and western states. To accomplish most perfectly its ends in the increased influence and higher culture of the profession, the Association would like to enroll among its members as many practicing architects in good standing as possible. You are cordially invited to attend the next convention, on November 17, 18 and 19, with a view of identifying yourself with the Association.

October 8, 1886.

JOHN W. ROOT, Secretary W. A. A.

### Notes on the Chicago Exposition.

It is not the intention to enter into a description of all the various exhibits that I saw displayed in the annual exposition, but merely to confine myself to those that are mostly interesting to the architects and building trades. That there is a sameness in many of the exhibits is not to be denied, and it can hardly be expected otherwise when it is considered that the goods exhibited are nearly all from local firms, and come under our observation during the entire year; but, nevertheless, the articles exhibited have been selected with great care, and show the wonderful improvements that have been made in the various branches of trade. As usual, the parlor stoves, furnaces and ranges occupy a large space in the building, and the display is very commendable, the novelty of the designs, with the free use of nickel-plate ornaments, make this department an attractive one for owners of buildings. Prominent among the exhibitors is the old firm of Fuller & Warren Co. and the Abram Cox Stove Company. In connection with the display made by the Fuller & Warren Co., is a very handsome wood mantel, manufactured by the Butler Co., showing a happy combination of parlor stove and wood mantel.

A new invention, which is attracting considerable attention from builders generally, is located in the gallery over the main entrance. It is a mason's scaffold, which operates automatically and hoists the scaffolding, workmen and material as the wall is constructed. The working model has been utilized by Messrs. Lockwood and Kimbell to present an excellent exhibit of St. Louis hydraulic pressed brick, arranged so as to illustrate the utility and purpose of the scaffold. The pressed and molded brick, so well known to builders and residents of Chicago through the many handsome office buildings and residences constructed of this material, is, with the scaffold, well worth a special visit to the Exposition, the scaffold being so simple and practical as to call for its general adoption by mason contractors.

The Goodwin Gas Stove and Meter Co. have a display of their celebrated gas stove heaters and ranges, and their value is fully demonstrated by seeing them in practical operation. Gas, as a fuel, is claiming the attention of all householders, and this firm has advanced the manufacture of gas stoves to such an extent that they stand ahead in their line.

As from winter we glide into summer, so from the heat suppliers we drift into the refrigerators, which have become a necessity in our modern construction. Various firms make good exhibits of this class of goods, but for merit of novel devices, combined with all the improvements known to our day, the attention is specially called to the exhibits of the Chicago Refrigerator Manufacturing Cold Storage Co., and the Jackson Refrigerator Co., of 249 South Canal street. This latter refrigerator claims to have no equal for preserving perishable goods and to keep them uniformly cold, dry and sweet.

The Brown Bros. Manufacturing Company make their usual fine display of ornamental glass for vestibule doors, transoms, and bank and office counters, showing many new and attractive designs. A special feature of their exhibit is an obelisk made of their celebrated sidewalk and vault lighting material.

Wadsworth, Howland & Co., have a very fine exhibit of the various colors and varnishes in which they deal. This firm handle the Masury's railroad colors, and have built up an extensive trade in architects and engineers supplies, mathematical instruments, and all goods required by architects and engineers.

E. B. Moore & Co., of Chicago, have on exhibit their patent parquetry flooring which is becoming very fashionable, their various designs and combination of the different woods make an endless variety.

The Chicago Wire and Iron Works have on exhibition a section entirely fitted up with goods manufactured by this company, also a good display of garden chairs, flower vases, and wire nettings. In the safe department, the Diebold Safe and Lock Company, and the Hall Safe

and Lock Company are prominent, the many new features introduced in the ornaments of their ponderous safes making this display very attractive.

An exhibit of great interest to owners of buildings, is the one made by the Scranton Manufacturing Company, of Chicago, their anti-friction steel hangers for barns, elevators, freight depots, etc., have acquired a well-deserved reputation, and the large sales of these goods reported by the leading hardware firms of the city, are a sure guarantee of the estimation they are held in the building trade.

For interior decoration, Edward Krispin, of New York and Chicago, have on exhibit samples of their perfect Solid Relief new decoration for walls and ceilings. This material can be made in any shape and design, and it is claimed by the manufacturers that it is durable and impervious to atmospheric influences.

The Somersworth Machine Company have on exhibition one of the heaters complete, set in brickwork and ready for use. The following letter was received by Mr. E. R. Ware, the western agent of this company: "I have had occasion a thousand times to thank you for what you have added to the comforts, not to say luxury of my home, by inducing me to adopt and introduce your system of heating. It gave more than satisfaction in every emergency last winter, and the knowledge of our having it in our house takes away all the dread of the approaching winter. Since I have been using your radiators, I have traveled a good deal, and have given some attention to the different kinds of heating apparatuses in use, and have yet to find one that I would exchange for mine in neatness and efficiency. Your furnace and boiler proved equal to my highest expectations. In connection with this exhibit, Messrs. A. Northrop & Co., of Pittsburgh, Pa., have a model of an iron ceiling which is fireproof, and easily applied in old buildings without removing plaster. This firm also manufactures all kinds of iron roofing."

The visit to the Exhibition would be deemed incomplete by our country cousins if they did not ascend to the dome and enjoy a birds-eye-view of Chicago. This is rendered comfortable and safe by a swift elevator placed by the Crane Bros. Manufacturing Company.

### Obituary.

WILLIAM WALTER, the veteran architect of Cincinnati, died at his home, on Walnut Hills, on Wednesday morning, September 29, in the seventy-first year of his age. Mr. Walter was born in Hanover, Pa., December 28, 1815. The family removed to Cincinnati in 1828. His early education began at Hagerstown, Md., and was continued in the public schools of Cincinnati, he being among the first attendants. He served a regular apprenticeship to the builders' trade, thus having a practical experience combined with his study of architecture. In the year 1836 he was taken into partnership by his father, Henry Walter, the well-known architect of that day, and with him prepared the plans of the capitol building at Columbus, in 1840, and of that beautiful architectural structure, the St. Peter's Cathedral of Cincinnati, in 1842. Many prominent public and private buildings, in Cincinnati and other localities, bear testimony to the skill of this master architect. Close study and application to his profession for so long a time had its effect in a stroke of paralysis eight years ago. He partially recovered, but a second stroke left him very feeble, and the remainder of his days were passed at home, surrounded by a loving family.

### Highly Recommended Brick.

THE Tiffany Pressed-Brick Company exhibit at the Exposition a wall of their pressed brick, of which, for the purpose of contrast, a part is set in black mortar and a part in white, the rich dark-red of the bricks harmonizing very effectively with both. The company have a large bed of very superior clay, and their machines and kilns are of their own invention, and especially designed and adapted for the peculiar quality of clay used. Thus it will be seen the Tiffany bricks are manufactured under the most favorable conditions possible, and as a result they are preëminent in form, closeness of grain and richness of color. So perfect are the workings of the machines and kilns that an unusually large proportion of high-grade brick is produced.

The company's works at Momence, Illinois, have been recently enlarged and are now capable of supplying in any required quantity brick uniform in color and graded to shade. The company has unsolicited testimonials from architects of the highest reputation testifying to their belief in the superiority of the Tiffany pressed brick. Among these are the following:

From William W. Clay, architect, Chicago, September, 14, 1886:

Since the Tiffany Pressed Brick Company commenced to supply our market I have used many thousands of their fine pressed bricks, and they have given me great satisfaction. I prefer them to any other red pressed bricks that I know of. Their compactness of texture, and perfection of surface, and beauty of color all combine to make them a building material of the highest order.

From M. L. Beers, architect, Chicago, July 21, 1886:

I have used the Tiffany pressed brick in several buildings that have been under my supervision as architect, and I am highly pleased with them. I take pleasure in recommending them.

From Col. Arthur Crooks, architect, New York, January 25, 1886:

I consider the "Tiffany" one of the best bricks I have ever examined, and I feel confident that a ready market would be found here for such a perfect material.

From D. Adler, architect (President of Western Association of Architects), Chicago, August 25, 1886:

The Tiffany bricks that I have seen as samples in your office and in use as facing bricks on many buildings in this city are so remarkable for regularity of shape, smoothness of finish, firmness and uniformity of texture, and richness of color, that I must recognize them as the equals of any and the superiors of most of the high-grade facing-bricks manufactured in this country.

The Chicago office of the Tiffany Pressed-Brick Company, J. Van Inwagen, president, is at 175 Dearborn street, where samples of their product, testimonials and records of tests may be seen, and the full process of manufacture examined.

### Mosaics.

THE Ainsworth covering has been adopted by the Holly Manufacturing Company, of Lockport, N. Y., for the Chicago Waterworks. The desire of the Holly Company to present as good a showing for their machinery, of course made the selection of a covering of great importance, and in the selection of the Ainsworth they indicate a decided preference and implied opinion of its superiority.

It is not generally known to members of the Western Association of Architects that a new lady member has been recently added, not only to its membership, but to its executive committee. Such might be the interpretation, however, of a card which reads: "Eugene H. Taylor, Mary M. Woodworth, married September 7, 1886, at Berlin, Conn. At home after September 23, at 42 Seventh street, Cedar Rapids, Iowa."

ARCHITECT M. SAKAMOTO, of Tokio, and M. Shimizu, of the Shimizu firm of contractors, of Yokohama, Japan, were in the city a week ago and were entertained by Architects Burnham and Root. This architect and contractor are making a tour of the world preparatory to the building of a palace for the Mikado, extensive public buildings and other works at Yokohama. After visiting the principal cities of the United States, these Japanese gentlemen will return home by way of Europe and India.

It is said to be a fact that there is a better demand in Chicago for building materials of the best quality than in any other city. An illustration of this is shown in the large orders being placed with Simpson Bros., for their Seyssel and Neuchatel rock asphalt work. The firm have secured the contract for the basement floor and the roof of the new Phoenix building. Among other work are 10,000 feet of flooring in the bottling department of the Schoenhofen Brewing Co., and the sidewalk of a block of twelve houses, northeast corner North Wells and Eugenie street, H. M. Hansen, architect.

THE works of the Illinois Terra-Cotta Lumber Company, at Pullman, were destroyed by fire on the third instant. From many indications the fire was pronounced incendiary in its origin. Fortunately the company have a large stock of their fireproofing material on hand, recent orders being in the kilns and little if any delay will be experienced in the filling of orders. During the short time this company have been manufacturing and placing fireproofing material in the West, their success has been phenomenal and the quality and adaptability of their product has received favorable recognition among architects generally. The company has commenced rebuilding their works upon a much larger scale than before and expect to turn out material within thirty days, and meanwhile have enough in stock to supply any ordinary and immediate demand.

### Trade Outlook.

OFFICE OF THE INLAND ARCHITECT AND BUILDER,  
October, 1886.

There is no difficulty in arriving at a fairly accurate understanding of building and trade interests at this time. We have before us the records of nine months' progress, and the evidence of the requirements of the next three months, at least. The volume of this year's business has been, up to date, sufficiently in excess of last year's as to suggest the inquiry, Why are prices for material and manufactured products better? Such an inquiry suggests another, viz.: Are they not good enough, would not higher prices lead to an undesirable industrial activity? Possibly. The salient features of the markets of the country are firm prices, strong demand, increasing capacity and threatening higher prices. The probability at this writing lies in favor of slightly stronger prices. Producing capacity everywhere is preparing to take advantage of it, and in that way preparation will prevent it from taking place. A study of prices of lumber for nine months exhibits very little fluctuation; railroad rates have been comparatively uniform. Supply in the Northwest has not expanded in proportion to demand. There is no accumulation of stocks, no sluggishness from failures, and no threatened depression. Buyers are making liberal purchases in all lumber markets. The iron and steel manufacturers are also exceptionally busy. During the past month business has been quietly expanding. So great is the capacity, that prices do not quickly respond to the improving demand. Mills west and east, and furnaces south and north are crowded with business as they never have been, and the manufacturers of motive power and of rolling stock have as much business as they can possibly execute this year. Everywhere the same reports continue to be made, consumption has reached an unprecedented limit. Builders have had a season that stands out boldly from all others in results. Work has been continuous, with the exception of a few weeks last spring. Work will be offered all winter, sufficient to engage a much larger force than usual during the dull season. A fair winter's activity is assured by the multitude of midsummer and early fall permits taken out. In all northwestern cities there is activity in building, and architects are not backward in predicting much winter and more spring work. Of course, the relative abundance of money is a stimulus. Then houses rent and sell readily. Real estate is not high except in certain central localities where buyers can afford to pay even exorbitant prices. The financial outlook is especially encouraging. The West is a constant borrower. The supply of money this year has been greater and the rate of discounts more reasonable. Banking facilities are extending. The list of new national and private banks which have started business in the West during the past twelve months shows the good progress made, and is indicative of a still greater expansion of financial capabilities. Our future building and industrial activity depends largely upon the abundance of money and the confidence of its holders in the productiveness of investments in any and all of the channels of trade and industry. With a continuance of abundant money, cheap material, satisfied labor and healthy industrial conditions, we may confidently rely upon another year of even more promising results than the one through which we are passing.

### Synopsis of Building News.

**Atlanta, Ga.**—Architect Gust E. Leo reports: No work for next season has been ordered yet, but there are several orders in for fall and winter work, which I will report later. Have at present under way a two-story frame residence, 48 by 70 feet; cost \$7,000, for George S. Lowndes. For B. F. & R. Lee Walker, three-story basement house, 48 by 108 feet; cost \$20,000.

**Boone, Iowa.**—Architect W. L. Plack of Des Moines, reports: Opera House improvements, to cost \$4,200; under way; E. C. Culver, contractor.

**Buffalo, N. Y.**—Architects R. A. & L. Bethune report: For city of Buffalo, addition to police station No. 5; cost \$3,000; James Boland, builder. For same, public school No. 18; cost \$35,000; Thos. Savage and C. Kraft, builders. For same, public school No. 24; cost \$40,000; Schneider & Kraft, builders. For W. Guenther, store building; cost \$10,000; L. Leinest, builder. For Carl Lautz, residence; cost \$4,000; E. M. Hager, builder. For George Bell, residence; cost \$4,000; B. C. Dean, builder.

Architects Swan & Falkner report: For E. Husted, brick residence, to cost \$8,000; Wm. Schumacher, builder. For Emory Close, frame residence; cost \$4,500; Emory Close, builder.

Architect R. A. Waite reports: For David W. Burt, iron front building; cost \$40,000; H. C. Harrower, builder.

Architect F. W. Caulkins reports: For E. B. Smith, brick residence; cost \$10,000.

Architect F. W. Humble reports: For John D. Larkin, frame residence; cost \$7,000, also stable, to cost \$1,500; Jacob Jaekle, builder.

**Carey, Ohio.**—Architect F. K. Hewitt, of Tiffin, reports: For School Board, two-story brick building, 76 by 83 feet, brick, cutstone and terra-cotta trimmings, slate roof; cost \$18,000; under way; J. P. Myers, builder.

**Chicago, Ill.**—There has been a considerable falling off in new work in the architects' offices during the past two weeks. How much of this is due to the trouble between the bricklayers and stonecutters cannot be estimated, but this certainly has had some effect. The trouble will probably be settled on a fair basis, and though there will be no large excess in building this fall and winter over that of last year, a fair amount may be looked for.

Architect John H. Wagner is preparing plans for Mr. Tomlinson for a five-story factory building, 123 by 50 feet, to be erected on the corner of Arnold and 23rd streets; cost \$30,000.

Architects Jenney & Otis: For E. Tolman, three-story residence, 30 by 70 feet, at 538 Dearborn avenue, Vert Island stone front, rock faced, hardwood finish, steam heat; cost \$20,000.

Architects Patton & Fisher report: For Philip D. Armour, two blocks of flats, 360 by 56 feet, on corner of Dearborn and Thirty-third streets; apartments of six and seven rooms each, three-story and cellar; cellar and first story faced with mottled brown sandstone, upper stories, St. Louis pressed brick and terra-cotta; cost \$90,000; under way.

Architect Clarence L. Stiles reports: For Walter L. Newberry, three three-story residences, 50 by 68 feet, on Superior street, near the lake; brick, brownstone and terra-cotta trimmings, copper cornices and bays, slate and felt roof, skylights, closets and bath, stained glass, hot-air heat, hardwood finish and tiling, wood and marble mantels, electric bells, speaking tubes, etc.; cost \$15,000; contracts not let.

Architect Wilh. Griesser reports: Additions and improvements for P. Schoenhofen Brewing Company; cost \$30,000; contracts not let.

Architect Wm. Thomas reports: For T. M. O'Brien, three-story store and flats, 24 by 74 feet, Anderson pressed brick, brownstone trimmings; under way; Wm. Price, mason; A. Forten, carpenter.

Architect Julius H. Huber reports: For H. Unzicker, two-story dwelling, 26 by 57 feet, on Frederick street, Indiana pressed brick, terra-cotta trimmings; cost \$5,500; under way; J. P. Flick, mason; E. Ivins, carpenter. For F. Riedele, two-story dwelling, 28 by 50 feet, on Washington avenue, near Fifty-ninth street, Indiana pressed brick, terra-cotta trimmings; cost \$4,000. For B. Webber, alterations, etc.; cost \$2,500.

Architect L. G. Hallberg reports: For Julien Bros., two-story apartment house, 28 by 60 feet, on Larrabee street, Indiana pressed brick, Buff Bedford stone trimmings; cost \$7,000. For V. T. Parson, two-story dwelling, 25 by 27 feet, on West Jackson street, Indiana pressed brick, Bedford stone trimmings; cost \$3,000.

Architect R. G. Pentecost reports: For Henry Sweet, block of three-story stores and flats, 100 by 158 feet, corner of Wentworth avenue and Twenty-second street, Anderson pressed brick, Lemont stone trimmings; cost \$75,000.

Architect J. F. Doerr reports: For Mr. Strauss, three-story and basement brick and stone store building, 25 by 48 feet, corner Twenty-third and Portland; cost \$7,500. For J. Jochem, three-story brownstone and pressed brick building, corner Thirty-seventh and State streets, slate towers; cost \$10,000. For D. Fuller, three-story and basement building, 25 by 87 feet, Milwaukee pressed brick, brownstone trimmings; cost \$10,000. For Miller Bros., two frame cottages, 22 by 48 feet, Fifty-seventh and State streets; cost \$5,000. Two-story school building, 48 by 97 feet, at Humboldt, brick, stone trimmings; cost \$9,000. For Ferdinand Kreutzburger, two-story and basement building, corner of Portland and Bushnell, Indiana pressed brick, stone and terra-cotta trimmings; cost \$9,000.

Architect G. Bloedner reports: For C. Royalske, three-story flats, 22 by 65 feet, at 411 West Chicago avenue, Indiana pressed brick; cost \$4,500; under way; H. Hesse, builder.

Architect L. Lutken reports: For A. Mahlum, three-story flats, 21 by 72 feet, at 302 Ohio street, Indiana pressed brick, Lemont stone; cost \$6,000; under way; Tobias & Co., masons; W. A. Stephens, carpenter. For A. Johnson, three-story flats, 21 by 72 feet, at 308 Ohio street, Indiana pressed brick, Lemont stone; cost \$6,000; under way; Tobias & Co., masons; T. J. Reynerton, carpenter.

Architect Gregory Vigeant reports: For himself, three three-story dwellings, 50 by 68 feet, at 19 to 23 Scott street, St. Louis pressed brick; cost \$21,000; under way; Geo. Lehman & Son, masons.

Architect W. G. Barfield reports: For Hickson & Jukes, seven two-story apartment houses, corner of Fullerton avenue and Burling street, Indiana pressed brick, Buff Bedford stone, and terra-cotta trimmings; cost \$20,000; under way; Thos. Kleating, mason; Peter Jensen & Co., carpenters.

Architect John Krivanek has prepared plans for Max Kirkman, two-story and basement building, 24 by 80 feet, on West Twelfth street, near Wood; pressed brick, Lemont stone trimmings; cost \$5,300. For F. Silmanen, a three-story and basement building, 21 by 80 feet, at 142 West Taylor street; Anderson pressed brick, Lemont stone trimmings; cost \$7,300.

Architect P. F. Verges has prepared plans for August Berni for a three-story and basement building, 24 by 65 feet, on Bissell street; pressed brick, Lemont stone trimmings; cost \$6,000.

Architects Sprague & Newell report plans for the following new buildings: For Chas. G. French, one two-story and basement residence, 36 by 55 feet, at Hyde Park, frame and pressed brick; cost \$9,000; also stable for same, 23 by 32 feet, frame; cost \$1,000. For W. J. Lukens, one two-story cottage, 22 by 44 feet, in Town of Lake, frame, cost \$1,500. For Mrs. N. F. Nickerson, two three-story and basement flats and stores, on 30th street, 40 by 82 feet, pressed brick with stone trimmings; cost \$15,000. For Wm. H. Mosher, four two-story and basement dwellings, 78 by 40 feet, on Jackson street, pressed brick and stone; cost \$10,000.

**Cincinnati, Ohio.**—Reported by Mr. L. Mendenhall: Everything seems to be going along, at least for the present, in a satisfactory manner, and if the laborer knows what is to his interests, no new questions will be opened up.

The new chamber of commerce building is progressing slowly, but satisfactorily, under the able superintendence of Mr. O. E. Elzner, who is fast becoming recognized, although a very young man, as a conscientious, painstaking architect, and one who is an ornament to the profession. Other imposing buildings, without particularizing as to place and architect, are in a satisfactory state of progress.

Architects Forbush & Green report as follows: For Matt. Ryan, two brick dwellings, slate roof, ten rooms each, with modern improvements. Frame church, at Madeira, Ohio, which, though small, is quite ornamental. For Geo. E. Day, Idlewild, Ohio, residence of seven rooms, two and a half stories, shingle roof, and cement and shingle front. For Alex. Reid, College Hill, frame house of nine rooms and shingle roof. For Chas. Aiken, College Hill, a similar house, of ten rooms. Prospects good.

Architects Plympton & Trowbridge have executed and have under way the following: For J. C. Carpenter, Home City, Ohio, frame, shingle and half timber, tile or slate roof, pine finish; cost \$3,500. For Mrs. M. Graff, Glendale, Ohio, cottage, six rooms, frame and shingle, shingle roof, pine finish; cost \$2,000.

Architect E. Buddeneyer has executed the following: For B. Barr, alterations, city; cost \$5,000. For H. S. Longley, Walnut Hills; cost \$6,500. For B. Whiteman, Sycamore street, city; cost \$7,000. Since the consolidation, Messrs. Buddeneyer, Plympton & Trowbridge have prepared drawings for the following: For L. C. Voight, Walnut Hills, frame and shingle residence, slate roof, pine finish; cost \$5,000. For H. Q. Clemy, Cavagna farm; complete half timber house, eleven rooms, bath, grand hall, tile roof, etc.; hardwood finish, first floor rooms; leaded cathedral and clear glass, casement sashes, with French espagnolette bolts, etc., very unique; cost about \$9,500; contracts not let. For A. B. Ashman, State avenue, city; brick house, eleven rooms, shingle gables, slate roof, pine finish; cost \$6,500. For John A. Pitts, brick store and dwelling, two and a half stories, shingle roof; cost about \$2,700; not let. For John A. Pitts, brick dwelling, two and a half stories, shingle roof, seven rooms, plain finish; cost \$2,300; not let. For Otto Reich, Wyoming, Ohio; drawings being prepared for an eight or nine room stone, cement and half timber residence, tile roof; style, southern French; cost



about \$9,000. Have prepared sketches for the following: For C. C. Waite, lake cottage, Lake Chautauqua; cost about \$2,300; shingle and plaster. For C. C. Waite, double house, Glendale, Ohio; cost about \$6,000; shingle roof, etc. For Wm. Owen, Jr., Avondale, Ohio; cottage; cost about \$3,500; half timber and cement, shingle roof; besides other work. Prospects for the coming season decidedly good.

Architect H. E. Siter, Lincoln's Inn Court building, reports: Making plans for Fleischman's distillery at Riverside, to be erected on site of old distillery recently burned. There will be six different buildings, engine, boiler, yeast and other departments; common brick, and will cost \$30,000; also remodeling front and putting in new foundation for Odd Fellow's hall at 107 Martin street, to cost \$3,000.

Architect Gustave W. Drach, Lincoln's Inn Court building, reports: Block of four five-story brick stores, to be erected on site of old Henry House, for Wm. Miller, to cost \$25,000. Frame dwelling and stable for John Auel, to be erected in Clifton, to cost \$7,500.

Architect S. E. Des Jardins reports: Large five-story brick hotel, with freestone basement, at Kearney, Neb., to cost \$40,000. The hotel will have seventy-three bedrooms, besides office, baggage and store-rooms, also two semi-detached three-story brick dwellings on Park avenue, Walnut Hills.

Architect Jas. W. McLaughlin is making a sketch for the Carnegie Free Library to be erected at Allegheny, Pa., being one of the paid architects selected in that competition.

Architect Geo. W. Rapp reports: Four-story pressed brick store and flat on McMillan street, near Gilbert avenue, for Joseph Goldschmidt, to cost \$16,000; remodeling and building addition to Wm. Dair's dwelling in Harrison, Ohio, to cost \$10,000; remodeling front of Kaufman's brewery on Vine street; also building new malt kiln for same, and alterations for interior of Volksblatt office.

Architect Emil F. Baude reports: Germania Protestant Church, Price Hill, made changes in plan and enlarged from former design, to cost \$16,000. Bids have just been taken on this building. Ten-room pressed brick dwelling for George Weller, to be erected on Cutter, near Betts street, to cost \$6,000; eight-room pressed brick dwelling for Paul Kessler, to be erected on State avenue, near Liberty street, and double fourteen-room frame dwelling for Wm. Oberhellman, to be erected at Riverside, to cost \$5,700.

Architect Wm. Martin Aiken, reports: Block of three two-story brick dwellings for Anderson Estate, to be erected on Mt. Adams; three-and-a-half story brick store and flat for Daniel Feeney, to be erected in Cumminsville. For A. D. Bullock, Esq., on Walnut Hills, a residence built as follows: First story brick, second story plastered, with slate roof; house contains eleven rooms; also stone dwelling for Charles Anderson, to be erected on the Grandin road.

Architect Emil G. Reuckert reports: Two and a-half-story brick dwelling for Edward Schrieffer, to be located on Wheeler between Warner and McMillan streets, to cost \$12,200; block of five three-story pressed brick dwellings for August Beck, to be erected on the north side of Fifth street, east of Broadway, to cost \$30,000; four and a-half story pressed brick flat and store for Stewart Shillito, to be located on the east side of Vine street, between Twelfth and Canal, to cost \$14,000; double three-story stone front dwelling for F. G. Huntington, to be located on the northwest corner of Saunders and Lewis streets, Mt. Auburn, to cost \$9,000; double two and a-half-story frame dwelling for Henry Carnes, to be erected on State avenue, near Brighton, to cost \$5,000; two and a-half-story frame dwelling for Henry Meyer, to be located on Harvey avenue, Avondale, to cost \$3,700; four and a-half story pressed brick store and flat for Arend Kattenhorn, to be located on Main opposite Court street, to cost \$10,000; three-story brick hall etc., at Twelfth and Jackson streets for L. Schneider, to cost \$6,000; two and a-half story brick dwelling for George Albert, to be erected on Madison, near Boone street, to cost \$4,000; two-story pressed brick synagogue, to be erected on Carlisle avenue, near Park street, to cost \$5,300; two and a-half-story pressed brick and California red shingle dwelling for John Schneider, to be located on Carthage pike, Clifton, to cost about \$15,000; two-story brick dwelling to be erected at 45 Mulberry street for a Mr. Becker, to cost \$3,000. He also drew the plans for sheds and stable fixtures for The Jung Brewing Company's new stables on Freeman avenue. Mr. Reuckert says business has been better with him this season than last.

Architect Charles Craspey reports: Frame parsonage for M. E. church at Hartwell, Ohio, to cost \$4,000; frame dwelling at Delta station for F. L. Stegemeyer, to cost \$3,500; four-story brick store and flat for J. F. Baldwin, to be erected at Spring and Liberty streets, to cost \$7,000, and six-story brick factory, under way, at Broadway and New streets, for Perkins, Campbell & Co., to cost \$20,000.

Architect W. R. Brown reports the following: M. E. Church, at Liberty, Ind., to cost \$10,000; Baptist church at Maysville, Ky., contract just let, to cost \$20,000, and brick dwelling at Helena, Ky., for James M. Mitchell, to cost \$15,000.

Architect Samuel Hannaford reports: Eight-story stone office building for W. H. Blymyer, to be erected on Main between Fifth and Sixth streets; the material will be Georgia marble; seven-story, material probably stone, store for Louis Seasongood, to be located on Race between Fourth and Fifth streets; extensive additions to Baum Street Convent; two frame dwellings to be erected at Westwood; fountain to be located in Clifton and presented to the citizens of that suburb by Henry Probasco, Esq.; the material will be bronze and granite, and will contain basins for drinking and also for watering animals; Children's hospital, Walnut Hills, material, brick with stone trimmings; Turner Hall, at Terre Haute, Ind., and some private dwellings, the plans for which are not quite completed.

Architect Theodore A. Richter Jr., reports: Two and a-half story brick dwelling of ten rooms, to be located at Cedar Grove, for F. W. Kallmeyer, to cost \$6,000; six-room

frame dwelling for John A. Johnson, Hartwell, to cost \$3,000; addition to brick dwelling at No. 4 Sherman avenue, for Henry Steinmeyer; two and a-half-story frame dwelling for Albert Squire, to be located at Eighth and Hawthorn avenues, Price Hill, to cost \$6,000, and two and a-half-story brick dwelling for A. Morrison, to be erected on Mt. Auburn.

Architect W. W. Franklin reports: Three-story brick school house, to be located in Hartwell, to cost \$25,000, stock brick and will be thoroughly ventilated; blue river limestone dwelling and stable for Henry Meyer, now in course of erection in Clifton, to cost \$18,000; brick dwelling at Mt. Lookout, for H. Zeigler, to cost \$12,000; frame dwelling for Mrs. D. H. Mears, to be erected on Rockdale avenue, Avondale, to cost \$8,000; frame dwelling at Ivanhoe, for Robert Lang, to cost \$8,000; three-story brick dwelling for Dr. C. O. Wright, to be erected on Seventh, near Smith, to cost \$6,000; Newort, Ky., school house, stock brick, to cost \$15,000; William Andrews, frame dwelling at Gholson and Main avenues, Avondale, and frame hotel, to contain one hundred and fifty rooms, to be erected near Latonia race course at a cost of \$35,000.

**Cleveland, Ohio.**—Architect John Eisenmann reports: Brick and stone Sanitary Hospital building; cost \$5,000.

**Colorado Springs, Col.**—Architects Varian & Sterner, of Denver, report: For Dr. S. E. Solly, a \$20,000 stone residence.

**Columbus, Ohio.**—Architects Kremer & Hart report: An infirmary to be built in Wapakoneta, Auglaize County, Ohio. Estimate \$34,800. To be let October 21, 1886. It will be brick, two stories high and basement; also an ice house, to be built for Brun's Brewery, size 75 by 21 feet, built of brick, three stories high; cost \$4,000; under way; Chas. Guthelt, contractor; also the completion of two new engine houses from second story up; cost, each one, \$3,000; under way. House at Bucyrus, Ohio, for Mr. Kearsley, alteration and addition, frame; cost \$2,300, under way.

Architects Burnham & Root report: For W. C. Turner, on Lake Shore Drive, residence, Pennsylvania mica stone, tile roof, 60 by 80 feet; cost about \$70,000. For Charles Counselman, at Kenwood, residence, Pennsylvania stone, tile roof 60 by 75 feet; cost about \$60,000. For David K. Hill, on Michigan avenue, residence, Georgia marble, slate roof, 40 by 80 feet; cost about \$50,000. For J. H. Winterbotham, at Woodlawn Park, residence, pressed brick, slate roof, 40 by 70 feet; cost about \$20,000.

**Denver, Col.**—Architects F. E. Edbrooke & Co. have prepared plans for the Unity Church, brick and stone; cost \$18,000.

Architects Varian & Sterner report: For L. Bamberger, two-story and basement stone dwelling; cost \$16,000. For R. Curtis, two-story brick dwelling; cost \$10,000. For E. Dewey, two-story brick dwelling; cost \$5,300.

Architect John Roberts reports: For Chain & Hardy, three-story brick and stone store building; cost \$28,000.

**Des Moines, Iowa.**—Architect W. L. Plack reports: Present outlook is not very promising. The architects, as a rule, have no new work on the boards. For F. W. Thornton, frame cottage, 32 by 48 feet; cost \$3,500; contract let. Stuttsman & Gilbrick, builders. For "Seventh Day Adventists," frame church, 50 by 73 feet; cost \$5,500; under way; L. F. Gardner, builder. For John Watt, frame cottage, 32 by 46 feet; cost \$3,100; under way; R. H. Baldrick, builder. For Wm. M. Bartholomew, brick tenement, 40 by 45 feet; cost \$5,300; under way; John Bailey, builder. For John Harley, frame cottage, 26 by 40 feet; cost \$1,700; under way; A. Penisen, builder. For J. M. Davis, rebuilding store rooms; cost \$2,500; under way; A. Connelly, builder. For A. H. Marshall, two-story frame dwelling, 35 by 51 feet; cost \$5,400; under way; Roberts & Smith, builders. For Lehman & Bell, two-story and basement brick tenements, 48 by 88 feet, tin roof, galvanized iron cornice; cost \$14,000; under way; John Bailey, builder.

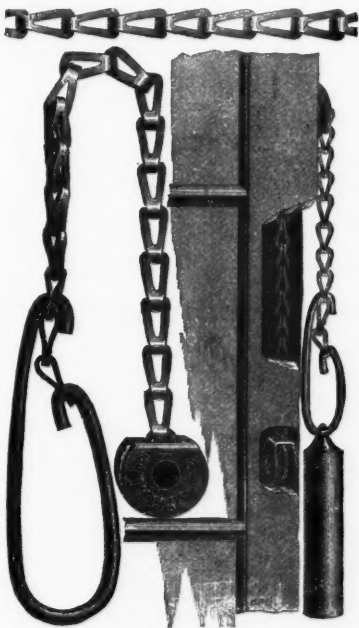
**Elgin, Ill.**—Architect Clarence L. Stiles, of Chicago, reports: For W. M. Du Bois, rebuilding of the Du Bois block, recently destroyed by fire; new building will be three-stories high, 80 by 80 feet; pressed brick front, stone trimmings; designed for stores and offices; cost \$20,000; work has been commenced on clearing away the debris, and plans for new building are under way.

**El Paso, Tex.**—Architects Stewart & Carpenter report: For Judge J. F. Crosbie, two-story brick residence; cost \$8,000; also stable, Carter & Lindsey, contractors. For P. E. Kern, two-story brick residence; cost \$5,000; Dalton & Schumacker, contractors. For W. J. Ames, preparing drawings for residence; to cost \$3,000.

**Fort Wayne, Ind.**—Architect H. W. Matson reports: For S. Hard, two three-story brick stores, 40 by 75 feet, tin roofs; cost \$5,000; under way. For Fred Roth, two-story double dwelling, 40 by 60 feet, brick, slate roof; cost \$5,000; projected. For the Keller Medicine Co., two-story and basement factory building, 40 by 85 feet, brick; cost \$6,000; taking figures. For Henry Schone, two-story brick dwelling, 24 by 60 feet; cost \$2,000; under way. Wm. Hiegemann and Miller & Schale, builders. Also eight district school houses in this (Allen) county; cost about \$1,000 each; situated in St. Joseph, Jefferson, Marion, Springfield, Eel River, Madison, Monroe and Adams townships. Also school house at New Haven; to cost \$5,000; nearly completed.

**Hamilton, Ohio.**—Architect Max Reutti reports: For F. Whitaker, two-story brick dwelling, slate roof; cost \$3,000; under way; Eisel & Mefford, builders. For Henry Lotz, two-story brick dwelling; cost \$1,600; under way; Jac. Rapp, builder. For Wm. Rembler, two-story brick dwelling, slate roof, bath, etc.; cost \$2,500;

[Continued on page 44.]



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## PROPOSALS.

### IRON WORK.

[At St. Joseph, Mo.]

OFFICE OF THE SUPERVISING ARCHITECT,  
TREASURY DEPARTMENT, WASHINGTON,  
D. C., September 27, 1886.

Sealed proposals will be received at this office until 2 P. M., on the 13th day of October, 1886, for furnishing and fixing in place the iron columns, girders and beams required for the postoffice, etc., building at St. Joseph, Mo., in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the superintendent. Bids must be accompanied by a certified check for \$500.

M. E. BELL,

Supervising Architect.

### SCHOOL HOUSE.

Sealed proposals will be received at the office of the Board of Education, third floor, City Hall building, Chicago, up to the hour of 12 o'clock at noon of December 1, for the various branches of labor and material required in the erection of an eighteen-room building to be erected on Twenty-third place, near Portland avenue, in accordance with the plans and specifications prepared by J. J. Flanders, Esq., architect of the Board, and which may be seen at the office of said architect, and at the office of the Board of Education, as follows: Masonry, cutstone, carpentry, lathing and plastering, plumbing and gasfitting, galvanized iron, gravel and slate roofing, painting and glazing, sewerage, cement paving, wire window guards, iron pipe railing, and for steam heating and ventilation by the fan system.

Proposals must be made on the regular printed form to be obtained at the office of the architect and be in strict conformity with the instructions to bidders printed thereon.

THOMAS BRENNAN,  
PAUL O. STENSLAND,  
JOHN W. GARVY,  
Committee on Buildings and Grounds.

under way, Math. Arent, builder. For Geo. W. Hughes, brick stable, slate roof; cost \$1,900; under way, F. Crompton, builder. For St. Stephen's Church, cemetery vault; cost \$800, Geo. Getz, builder.

**Hot Springs, Ark.**—Judge Boyle, of Memphis, Tenn., has let contract for the erection of a two-story frame hotel building to P. J. Ledwidge for \$5,575.

**Jonesboro, Ark.**—G. W. Culberhouse is erecting a two-story brick store; to cost \$6,000; H. G. Seymour & Bro., architects and builders.

**Moberly, Mo.**—Architect E. Cook reports: Present condition quiet, and outlook for building very poor.

The Florence Hotel, recently damaged by fire, is being rebuilt at a cost of \$6,000; Jas. Sandison, builder. Moore & Kimmel are building a two-story brick building, 25 by 70 feet; cost \$2,500; for Mr. Fisher. Plans are being prepared for Werner Fennel, for two-story brick business block, 25 by 50 feet; cost \$3,000.

**Mobile, Ala.**—Architect James H. Hutchisson reports: Present condition and outlook for building good. For Adam Glass, repairs, elevator, etc.; cost \$3,500. For P. D. Barker, repairs; cost \$2,000; Rosette & Fincher, contractors. For Colored Baptist Church, repairs; cost \$1,200; John Smith, contractor. Miscellaneous repairs on three buildings; cost \$4,300.

**Monroeville, Ind.**—Architect H. W. Matson, of Fort Wayne, reports: For G. W. Brandeberry, two-story frame dwelling; cost \$2,500; under way; Fred Boester, builder.

**Mount Vernon, Mo.**—Architects Abbott & Hohenschild, of Springfield, report: Two-story brick school house, 44 by 64 feet, furnace heat; cost \$6,000; E. H. McEwin, builder.

**New Corporations.**—The New England Anderson Pressed Brick Company, at Chicago; capital stock \$200,000; incorporators, James C. Anderson, Stillman K. Bingham, Frank D. Everett, and John C. Cushman. The Cool-Air Drying and Ventilating Company, at Chicago; capital stock \$500,000; incorporators, Francis A. Riddle, George A. Brine, and John S. Stevens. The Decorative Design and Color Company, of Chicago; capital stock \$15,000; incorporators, Frederick N. Atwood, George Barry, and Francis M. Nichols. The Tiffany Pressed Brick Company of Chicago filed a certificate of increase of capital stock from \$200,000 to \$250,000. The Detroit Motor Company, of Detroit, Mich., has been incorporated. Capital stock \$100,000; F. A. Beades, John T. Liggett, 525 Second street, and Wm. C. Mayberry, incorporators. The Watersmeet Lumber Company, of Menominee, Mich., has been incorporated; capital stock \$100,000; Jas. A. Crozer, Julius Ruprecht, and H. P. Bird, incorporators.

**Omaha, Neb.**—Architect J. W. Ross, of Davenport, Iowa, reports: Plans in preparation for house for C. Orcutt, to cost about \$15,000.

**Ottumwa, Iowa.**—Architect Edward Clark reports: For Street Car Company, two-story frame car barn, 27 by 53 feet; cost \$750; projected. For H. P. Graves, remodeling Hotel Bristol; cost \$650; under way. For J. B. Jeffries, two-story brick, stone and iron business block, 41 by 60 feet; cost \$2,400; A. D. Smilt, stone work.

**Oxford, Ohio.**—Architect Max Reutti, of Hamilton, reports: For Board of Education, two-story brick school house, slate roof; cost \$20,000; Lloyd & Hewitt, builders.

**Pittsburgh, Pa.**—Present condition is quite encouraging. Architects Bickel & Brennan report: For H. G. Imhoff, frame stable, 52 by 32 feet; cost \$3,000; under way; Geo. H. Rodgers, builder. For Jonas R. McClintock, two

and one half-story frame dwelling, 34 by 56 feet, slate roof; cost \$5,000; under way; Geo. H. Rodgers, builder. For Eva Wolf, two-story and mansard brick dwelling, 21 by 56 feet; cost \$5,000; under way; Wm. Bowersmith, builder.

Architect Wilh. Griesser, of Chicago, Illinois, reports: For Winter Bros., brewery, to cost \$50,000; contracts being let. For Nic Kessler, brewery, to cost \$45,000; contracts let.

**Richmond, Va.**—Architect B. J. Black reports: Present outlook is gloomy, little or no work in office at this time; expect a very dull fall. For Charles H. Whitlock, two three-story and basement dwellings, 25 by 96 feet each, brick, with brownstone trimmings, tin roof; cost \$7,000 each; contracts not yet closed. For Alvis Rick, two-story brick, 18 by 60 feet, tin roof; cost \$2,000; under way; Joseph Heppert, builder. For Charles Gasser, two-story brick, 18 by 60 feet, tin roof; cost \$2,000; under way; Joseph Heppert, builder.

**Springfield, Ill.**—Architect Geo. H. Helmle reports: For B. M. Griffith, pressed brick and stone building, 80 by 60 feet; cost \$18,000; plans completed; builders estimating. For Chas. H. Helmle, three-story pressed brick and stone building, 20 by 80 feet; cost \$6,000; under way; Buck & McKee, builders. For Joseph Irwin, two-story brick dwelling, 30 by 50 feet, furnace heat; cost \$3,500; projected; Joseph Irwin, builder. For Edward Brown, two-story frame dwelling, 32 by 36 feet, furnace heat; cost \$3,500; under way; James L. Powell, builder. For Wm. Rapps, two-story brick and stone dwelling, 36 by 40 feet; cost \$3,000; under way; N. Ritter, builder. For Mrs. A. Ammann, two-story frame dwelling, 30 by 30 feet; cost \$2,000; projected. For Board of Education, two brick and stone school houses, eight rooms each; cost when completed, including steam heating, \$20,000 each; buildings under way; \$7,000 to be expended this fall; Wm. White, builder. For First Congregational Church, stone addition, 40 by 80 feet, for lecture room and parlors; cost \$16,000; under way; John T. Rhodes & Bro., builders.

**Springfield, Mo.**—Architects Abbott & Hohenschild report: Building outlook fair, several plans on the boards. For school board, two-story brick building, 48 by 72 feet, galvanized iron cornice, slate roof, Ruttan furnace; cost \$7,920; under way; Anderson & Smith, builders. For Norman Gibbs, two-story dwelling, 30 by 50 feet, steam heat, electric bells, plumbing, etc.; cost \$5,400; under way.

**St. Paul, Minn.**—Architect Geo. Wirth has prepared plans for the Jackson street M. E. Church, Rev. Robert Forbes, pastor, for two-story stone building, 89 by 106 feet, to be built of stone; cost \$70,000; foundations laid; Mr. Roach, general contractor for entire work.

**Toledo, Ohio.**—Architect J. L. Stratton reports: For William Metzger, two-story and basement residence, 25 by 90 feet, brick, stone basement and trimmings, galvanized iron cornices, tin roof, hardwood finish and tiling, closets, bath, stained glass, skylights, hot-air heat, marble mantels, dumb-waiters, conservatory, etc.; cost \$8,000; under way; general contractors, Dawson & Anderson; masons, Toledo Stone Co.

**West Bay City, Mich.**—Architect D. P. Clark reports: For the city, two-room addition to Second Ward school building, frame; cost \$1,500; Sylvester Bard, contractor. Same for Fifth Ward school building; cost \$1,900; E. J. Pfeifer, builder. Two-story brick addition to First Ward school building, 36 by 28 feet; cost \$4,000; receiving bids. Four-room frame school building for Third Ward, 100 by 65 feet; cost \$5,000; plans under way. For Thomas Walsh, two-story frame dwelling, 30 by 52 feet; cost \$1,600. For West Bay City Manufacturing Company, frame cottage, cost \$9,000; Plans in preparation.

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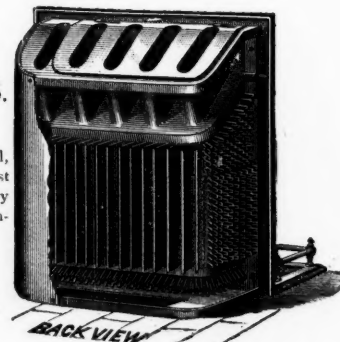
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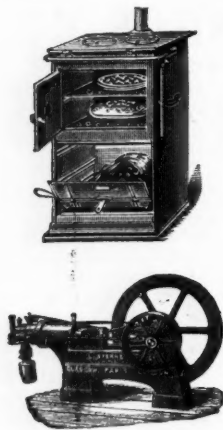
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" " molded ..... 65 00 @ 300 00  
Indiana, Hinchliff ..... 16 00 @ 22 00  
" " molded ..... 25 00 @ 50 00  
Perth Amboy Buff ..... 50 00  
" " mottled ..... 50 00  
Standard Purington & Kimball ..... 24 00  
Tiffany ..... 22 00 @ 30 00

(Quotations furnished by Lockwood & Kimball.)

St. Louis pressed ..... \$ 27 00  
" " molded ..... 50 00 @ 200 00  
Trenton pressed ..... 40 00  
" " molded ..... 65 00 @ 200 00  
Philadelphia pressed ..... 45 00  
" " molded ..... 65 00 @ 200 00  
Baltimore ..... 55 00  
Milwaukee ..... 25 00  
Zanesville ..... 30 00  
" enameled ..... 85 00 @ 100 00  
Toledo, red common ..... 12 00  
" stock ..... 17 00  
Fire Brick ..... 25 00 @ 30 00

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Chicago Lime ..... \$ 65 @ 75  
Wisconsin " ..... 90 @ 1 00  
Milwaukee, Utica, Louisville, Akron ..... 1 00 @ 1 25  
Portland ..... 3 25 @ 3 50  
Keene's coarse ..... 7 50 @ 9 00  
Keene's fine ..... 11 00 @ 12 50  
Plaster of Paris ..... 2 00 @ 2 50  
Hair (cattle), per bu. .... 20 @ 25  
Hair (goat), per bu. .... 40 @  
Sand (lake shore), per yard ..... 1 00 @ 1 25

#### STONE.

(Quotations furnished by J. S. F. Batchen.)

Limestone: Promiscuous blocks. f. o. b. cars, Chicago. 50  
Buff Bedford ..... 65  
Blue Bedford ..... 65  
Hoosier deep blue Bedford ..... 65  
" buff " ..... 50  
Joliet ..... 35 @ 50  
Lemont ..... 40 @ 50  
Salem Oolitic ..... 50  
Foundation:  
Dimension on dock ..... 20 @ 25  
Rubble, per cord ..... 8 00  
Sidewalk ..... 40 @ 1 00  
Planed ..... 40 @ 1 00  
Sandstone—Promiscuous blocks:  
Hummelstown or Philadelphia Brown Stone ..... 1 50  
Brown Connecticut ..... 1 50  
Amherst ..... 60 @ 75  
Berea ..... 55 @ 65  
Potomac Red Sandstone ..... 1 25  
Carbondell ..... 1 10  
Malone Blue Euclid ..... 55 @ 65  
New York bluestone ..... 1 35 @ 1 40

#### Marble:

Italian, veined ..... 4 00  
Tennessee, red ..... 2 50 @ 5 00  
Tennessee, Knoxville ..... 3 00  
Vermont, white ..... 5 75 @ 6 75  
Ophite ..... 4 50 @ 5 00  
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#### Slate:

Roofing, Vermont, per square:  
Green ..... 6 50  
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Red ..... 13 50  
Black, Lehigh ..... 5 75 @ 6 75  
Black, Chapman's ..... 7 30 @ 8 00  
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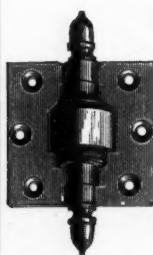
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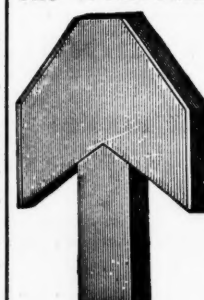
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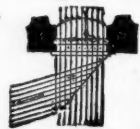
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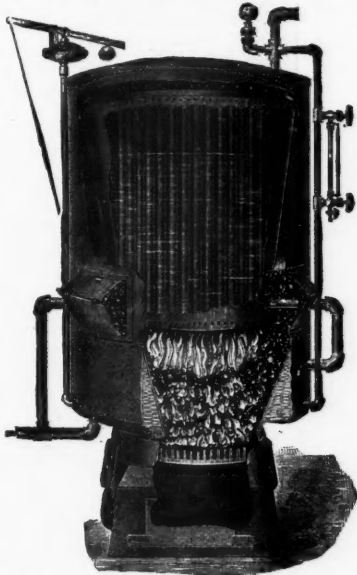
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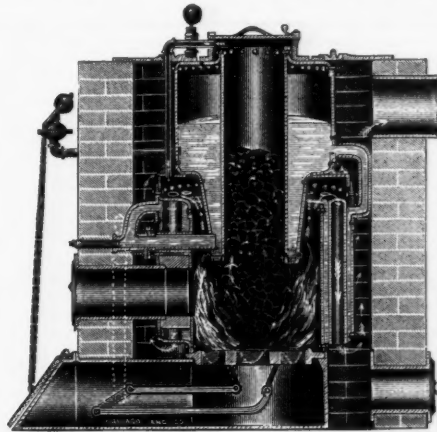
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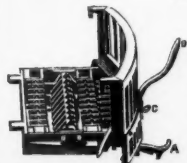
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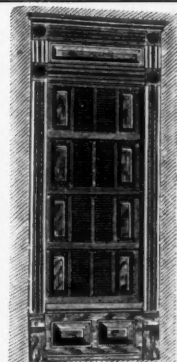
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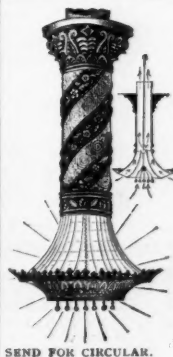
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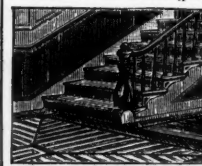
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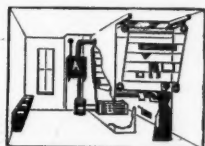
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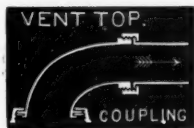
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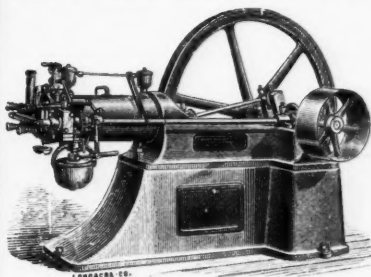
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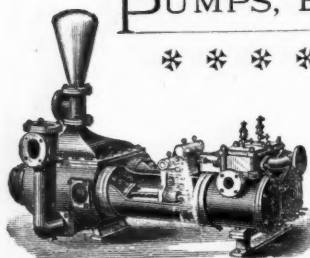


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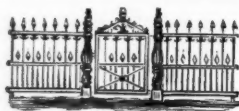
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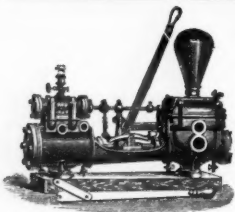
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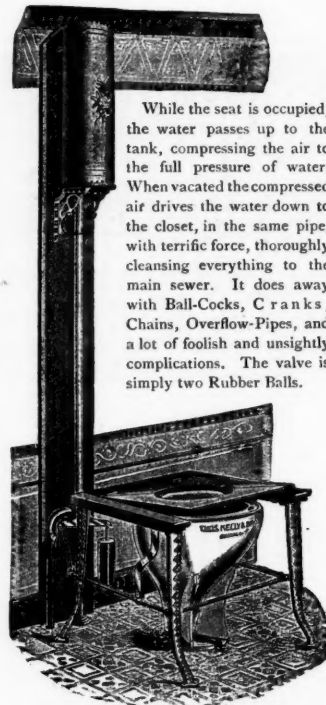


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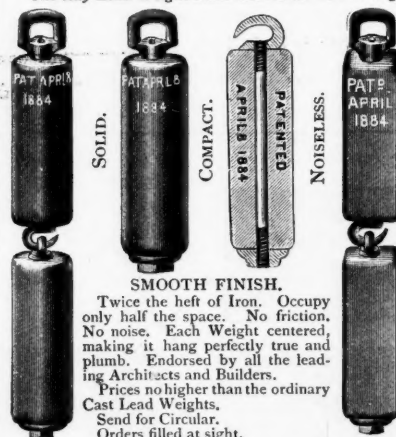
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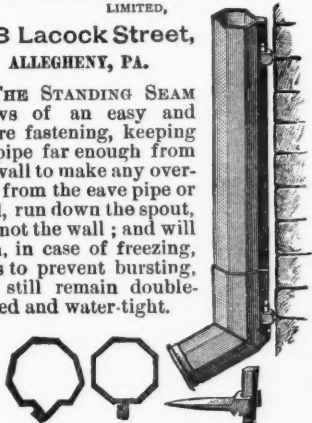
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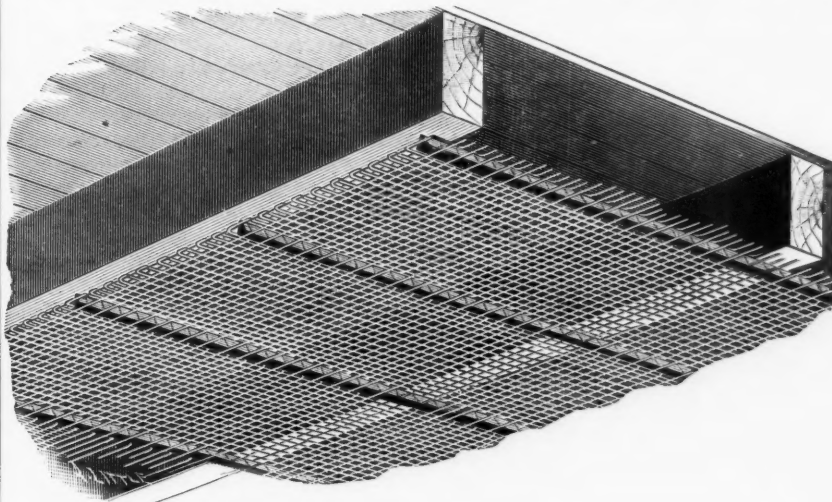
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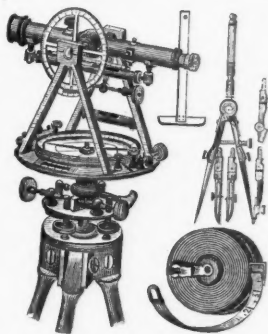
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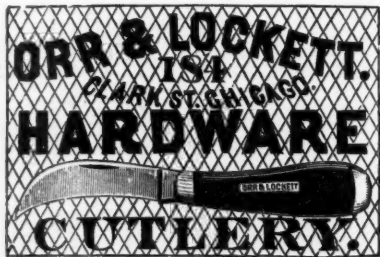
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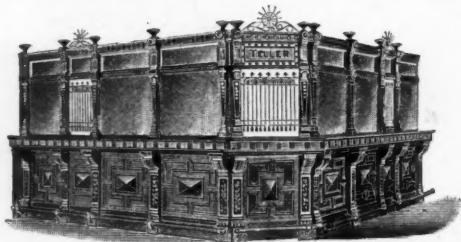
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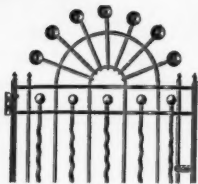
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