

PRICE 15 CENTS.



MARCH 2, 1895.

THE AMERICAN ARCHITECT
AND BUILDING NEWS

VOL. XLVII.

* REGULAR EDITION *

NO. 1001.



ARCHITECTURE

ENGINEERING

DECORATION

211 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

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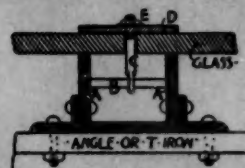
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THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XLVII.

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No. 1001.

Entered at the Post-Office at Boston as second-class matter.

MARCH 2, 1895.



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MAINLY, as we are told, through the efforts of the Architectural League, the preliminary steps have been taken toward the organization in New York of a Fine-Arts Federation, comprising all the principal associations in the city interested in the fine-arts. At a meeting called the other day to consider the subject, delegates were present from the Architectural League, the National Academy of Design, the Society of American Artists, the National Sculpture Society, the Society of Beaux-Arts Architects, the Municipal Art Society and the New York Chapter of the American Institute of Architects. A draft of a constitution was adopted, under which it is provided that there shall be three delegates from each of the confederated societies, these delegates forming the Council of the Federation; but that, in voting, each society shall have one vote only. A permanent organization will probably be effected within a few weeks, and the objects of the new association will then, undoubtedly, be more fully explained to the public.

HERR E. ZILLER writes from Athens a very interesting letter to the *Deutsche Bauzeitung* in regard to the effect of the earthquake of last year on the Parthenon. It will be remembered that, after the earthquake, the newspapers contained many paragraphs and letters, to the effect that the ruins of the Parthenon had been so seriously affected that they would either have to be pulled down, or subjected to a process of radical repair, which would be hardly less detrimental to their artistic and historical value. It is pleasant to find that Herr Ziller, whose forty years' familiarity with the architectural antiquities of Athens makes his opinion of great value, thinks that no damage has been done to the Parthenon by the earthquake which cannot be easily repaired, and that it is no nearer ruin than it was before; the effect of the shock being confined to dislodging fragments which were already detached, and which would have fallen before many years without any earthquake.

IN explaining this, Herr Ziller gives some curious information in regard to the original construction of the Parthenon. In his opinion, some of the repairs to be observed about the building date from ancient times, if not from the period of its construction. It will be remembered that the architrave of the Parthenon consists of three rows of stones, one behind the

other. The course above consists of two stones, one for the exterior frieze, and the other for the interior, with a vacant space between. By this construction, the weight of the superstructure is brought near the outside of the abacus of the columns, the central portion carrying nothing but the middle architrave block. The consequence would naturally be that the abacus and capital would be subjected to a bending strain, such as stone does not bear well, and several of the columns have the edges of the capital split off in consequence. In the northern interior angle of the rear portico, the corner of the capital of the angle column has been broken off, evidently from this cause. The fracture is an irregular one, and the weathering shows it to be of great antiquity; but the curious thing about it is that the fractured surface of the portion of the capital remaining in place has four dowel-holes in it. From this, with certain other indications, Herr Ziller infers that the corner of the capital was broken off during construction, or very soon afterwards, and was replaced by the builders, exactly as, in our time, stones broken during construction are repaired before the contract is completed; but with the difference that the Parthenon work shows signs of great skill and taste. In our day, the stone patcher would probably begin by cutting the fractured surface to a plane, and then apply a new piece, also cut to a plane; but the Greek workmen reflected that, by saving the piece originally broken off, and sticking it on carefully, so that the broken surfaces would fit closely together, the irregular seam would look like a vein in the marble, and would hardly be observed. It is hardly necessary to say that to cut four dowel-holes in the piece broken off, and four corresponding ones in the portion remaining, with such accuracy that the broken surfaces shall fit exactly together, and with such care as not to break away the edges of either piece, is anything but an easy task; yet the Greek stone-cutters seem to have found no difficulty in it, for three other columns in the same portico have had their capitals repaired by dowelling in the same way; and even an architrave block, from which a thin "spall" has been split off, shows in the broken surface nine small dowel-holes. With bronze dowels, such as the Greeks generally used, it is quite probable that the repaired pieces would have remained in good condition as long as the rest, but for the ingenuity of the modern Greeks, who have discovered that the antique dowels bring several cents a pound in the market, and have ransacked the Acropolis for centuries in search of them.

A PARAGRAPH is circulating through the newspapers, to the effect that a sum of two hundred thousand dollars has been raised, and is to be applied to repairing the damage said to have been done by the earthquake to the building. We can hardly believe, judging from the difficulty which is found in raising even a small part of that amount, for pursuing the most interesting archaeological investigations in Greece, that the newspaper story has much foundation, and we hope that it has none at all. In addition to the opinion of Herr Ziller, which holds that no serious damage has been done, the unanimous testimony of other experts on the ground shows that the building has not materially suffered by the movement, and that the effect of many more such earthquakes is less to be dreaded than that of the operations likely to be carried out under the pretext of repairs.

THE *Journal des Debats* publishes accounts of interviews on the subject with the most accomplished French authorities, who agree that no repairing of the building is necessary or desirable. M. Perrot, whose knowledge of the buildings on the Athenian Acropolis is probably not surpassed by that of any man in Europe, unless Herr Ziller and Dr. Dörpfeld, and who visited the Parthenon just before the earthquake, and immediately afterward, said that, although the movement had shaken off small fragments of the marble, he saw nothing to lead him to suppose that it had compromised the solidity of the ruins. M. Homolle, the learned Director of the explorations at Delphi, said that, in common with all those who interest themselves in ancient Greek civilization, he made a pilgrimage to the Parthenon immediately after the earthquake, and found it to be the universal opinion that the building had not suffered

from its effects. The majority of Greek architects, as he found, agreed with his view, and regarded the important works of repair then suggested as unnecessary. M. Magne, Professor of the History of Architecture at the Paris School of Fine-Arts, also visited the building, and had a scaffold erected around it, to study it more closely, and came to the conclusion that, although it had suffered from the shaking-off of valuable fragments, its stability was not in the least compromised; and he protested, in common, as he said, with all admirers of the most perfect work of ancient Greece, against "useless measures of preservation." In the face of this unanimous protest of the people best able to judge of the matter, it would be most unfortunate to persist in the attempt to change or add to the building; and, if anything more is said about it, we hope that the artistic societies in this country, as well as elsewhere, will make themselves heard in remonstrance.

MR. E. G. PALEY, of Lancaster, England, the senior member of the firm of Paley & Austin, whose beautiful published designs for country churches are, we imagine, treasured in a good many architects' offices in this country, died a few days ago at the age of seventy-two. Mr. Paley was a grandson of the celebrated Archdeacon Paley, the author of the "Natural Theology" and the "Evidences of Christianity," and a brother of Professor Paley, of Cambridge. He was a pupil, and afterwards partner, of Edmund Sharpe, perhaps the most learned and brilliant leader of the early Gothic Revival. In 1868, he associated with himself Mr. H. J. Austin, and, very recently, his son, Mr. H. A. Paley, has been admitted as a member of what has become a most distinguished firm.

THE New York Legislature has promptly seconded that of New Jersey in ordering the appointment of Commissioners, to confer with the representatives of the Federal Government in regard to the expropriation of the Palisades, and the adjacent region, as a Federal reservation, to be utilized, if expedient, for erecting fortifications to defend the Hudson River and the City of New York. Although it would be an excellent thing to have the Palisades made a Federal reservation, we imagine that it will be a long time before any fortifications are erected on what the mover of the resolution, according to the New York papers, called their "precipitate cliffs"; and meanwhile, the New York public will be quite content to have them left in the imposing solitude in which they know them best.

A RECENT newspaper describes some details of the Berlin fire-service, which should afford valuable hints to our fire-engineers. According to the article in question, a certain number of men from each station are supplied with fire-resisting clothing, of asbestos and India-rubber, and a hard-rubber helmet, which makes a close joint with the other portions of the suit, and is furnished with glass windows in front, prepared so as to resist the heat, and with air-tubes, through which a supply of fresh air can be pumped from a distant point, exactly as air is pumped into a diver's helmet. Arrayed in this suit of armor, which is known as the "scaphander," a fireman can plunge boldly into rooms filled with smoke, or even with fire, and apply extinguishers, or rescue human beings. Considering that most of the deaths caused by fires in this country are due to suffocation by smoke, it is evident that men, dressed in such a suit, and supplied with fresh air through tubes, might save many lives. When a Berlin fireman finds people lying suffocated on the floor in the rooms of a burning house, he transfers them to a place of safety by a device as simple as it is effective. Whenever human beings are known to be in the house, each fireman detailed to climb the ladders carries, slung over his shoulders, and secured by a hook, a strong hempen bag, and a coil of rope. As soon as he sees an unconscious form in one of the rooms, he unbooks the bag, runs one end of the rope through a rung of the ladder, throws it down, and dashes through the nearest window. A moment later, the bag, freighted with the victim, is hooked to the rope and is being drawn down into the place of safety by the firemen who are waiting below. The moment the sufferer is extricated from the bag, it is drawn up again by pulling the other end of the rope, and is ready to receive another load.

In this simple way four persons have been rescued within three minutes, by a single line, on which two bags had been hooked.

AN interesting communication appears in the New York *Tribune* in relation to the celebrated stone-dressing law of New York. It is commonly supposed that this law was enacted at the instance of the trades-union officials; but the *Tribune's* correspondent, who calls himself a workingman, and who writes with clearness and moderation, says that the statute was neither advocated nor approved by the New York unions. It was not even submitted, before its passage, to any union, except, possibly, that of the granite-cutters, of whom there are only about one hundred and fifty in New York. While the bill was pending, it was supposed that it applied only to stonework to be used in public buildings, and the matter did not attract much attention. When, however, the Corporation Counsel decided that it applied to curbing and paving-stones, the workmen, as the *Tribune's* correspondent says, gathered the impression, which they still hold, that the bill was drawn in the interest of certain speculators, who saw a way of making money by laying asphalt pavements for the city, and devised this ingenious trick for making stone paving too costly to compete with their asphalt. By dressing up their scheme with the pretence of being intended to secure employment for local workingmen, and securing the good offices of the demagogues, they led it, like a wolf disguised in sheep's clothing, successfully through the Legislature, and set it loose upon the taxpayers and citizens. What the latter soon came to think of it may be inferred from the resolutions adopted last fall by a meeting of union pavers, who declared that the law was "a disgrace to the statute-book of the State of New York"; that in the opinion of the meeting, it was "framed and passed to cover a scheme of pillage," and that the conduct of the legislators who passed it "demonstrates them utterly unworthy to enjoy the prerogative of citizens of the United States." The *Tribune's* correspondent adds that "by the process of this law more than five thousand union men have been thrown out of employment, and their families left without the necessities of life."

A MOVEMENT has been begun in France, in opposition to the socialist-anarchist propaganda, which is certainly interesting, and may have important results. Under the name of the Comité de Defense et de Progrès Social, MM. Leroy-Beaulieu, Glasson, and Georges Picot, all members of the Institute of France; Dr. Rochard, President of the Academy of Medicine; M. Albert Gigot, President of the Society of Social Economy; and many other people distinguished for their knowledge of the problems to be dealt with, have associated themselves, with the intention of attracting the coöperation of others of like mind, and of controverting, by lectures and otherwise, "the false notions, the unhealthy ideals, which create around us an atmosphere of sophisms," and, particularly, of interesting young people in the work of alleviating the distresses of their poorer brothers and sisters, and of promoting mutual confidence and regard among all men, whatever their relations to each other. The Committee believes, as it says in the interesting circular in which it announces its formation, that the way to win such confidence is to refrain from trying to deceive the people whom one is endeavoring to attract; and it proposes to meet the false theories, and monstrous misstatements, of the socialistic charlatans by rational deductions from well-attested facts. Adding to these the inculcation, among children as well as adults, of more reasonable ideas of duty, responsibility and morality, it hopes to establish a solid basis for a real social reform. The work which the Committee has undertaken has been already begun, by the delivery, in the great hall of the Hôtel des Sociétés Savantes, of public lectures, by MM. Leroy-Beaulieu, Picot and Rostand, on individual liberty and initiative; and these are to be followed, this month, by two more, by M. Paul Desjardins and M. E. Cheysson, on the duties of rank and wealth. Among us, the efforts of such a committee of "doctrinaires," as our politicians would contemptuously call them, would probably have little result; but the French people are, above all others, those who adopt most enthusiastically an idea that takes their fancy; and it is by no means impossible that France is about to lead in a new social revolution.

ELECTRICAL SCIENCE FOR ARCHITECTS.¹—VIII.
THE NATIONAL CODE OF RULES FOR ELECTRIC WIRING.

THE rules for electric wiring that have been formulated and compiled by the Underwriters have now become the accepted code throughout the country. While, of course, the influence of the Underwriters has done much to bring this about, there could not be the present broad acceptance, if the rules did not specify what experience has shown to be necessary for good and safe service.

One sometimes hears the criticism that these rules are the arbitrary dictations of men who know nothing about electricity, but who are carried away by fancied dangers. Such criticism is wide of the mark, and comes from erroneous ideas of the way in which the insurance code has grown. It is not an autocratic pronouncement, but the result of a natural development. Starting with a few plainly-necessary restrictions, the code has been gradually added to, and expanded as experience has shown the faults of practice. Many of the rules were, in the early days, adopted from the regulations enforced by the better class of electric companies, other rules have been suggested and formulated by some of the best-known engineers, and the Underwriters now have a corps of electricians trained in judging of construction with regard to safety from fire, and competent to impose restrictions as new conditions are presented. If the rules were unreasonable, the electric-light companies would be the first to protest, but, on the contrary, the National Electric-Light Association has adopted virtually the same rules, and electrical engineers generally accept the insurance code as the best existing guide for safe construction. The complaints that arise on the part of the better class of electrical men is not that the rules are too exacting, but that they are not always rigidly and consistently enforced.

Architects can, of course, do much to insure good electrical construction in their buildings, but they have usually paid little attention to this feature. It is very common to find in the architect's specifications a clause requiring "all work to be done in strict compliance with the Underwriters' rules," and then to find, following this, a number of clauses specifying construction that is explicitly prohibited by the rules. With this evidence of ignorance before them, it is not surprising that contractors often feel free to do the work as they please.

The rules are necessarily short, and naturally there are many technical terms used. It has seemed that it would be helpful to architects to have these terms defined, and to have the reasons for the rules briefly stated. Accordingly the latest rules of the National Board of Fire Underwriters, as amended at New York, January, 1895, will be taken up here, and an attempt will be made to make them intelligible to the layman. The comments will perhaps sometimes seem unnecessary, but they have all been based upon actual inquiries.

CENTRAL STATIONS.

Class A.

FOR LIGHT OR POWER.

These Rules also apply to Dynamo-rooms in Isolated Plants, connected with or detached from buildings used for other purposes; also to all varieties of apparatus therein, of both high and low potential.

1. GENERATORS :

- a. Must be located in a dry place.
- b. Must be insulated on floors or base frames, which must be kept filled, to prevent absorption of moisture, and also kept clean and dry.
- c. Must never be placed in a room where any hazardous process is carried on, nor in places where they would be exposed to inflammable gases, or flyings, or combustible material.
- d. Must each be provided with a waterproof covering.

A "generator" receives mechanical energy at the pulley, and gives out electrical energy; a "motor" receives electrical energy and gives out mechanical energy at the pulley. Strictly speaking, both are "dynamoes," or dynamo electric machines, but the term "dynamo" is commonly used as synonymous with generator.

"Potential" is used here as synonymous with electrical pressure; voltage; electro-motive force; the virtue by which an electric current is forced through a wire or other substance. High and low

potential are, of course, relative terms, but in these rules, a high potential is that measuring over 300 volts, and a low potential is that measuring 300 volts and under.

The "base frames" on which dynamoes are usually set, are simply heavy frames of wood, filled or impregnated with oil or other insulating substance that will prevent moisture from penetrating the pores of the wood, thus making of the wood a partial conductor

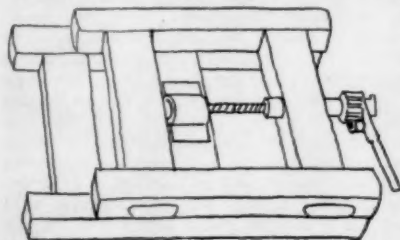


Fig. 9.

insulating substance that will prevent moisture from penetrating the pores of the wood, thus making of the wood a partial conductor

¹Continued from No. 983, page 38.

through which currents of electricity might leak. The frames on which the smaller machines are set are usually made in two parts, the top part being adjustable so that the belt may be tightened by moving the machine.

Almost all damp substances are fairly good conductors, and even damp and dirty surfaces will allow considerable leakage. Precautions have to be taken against the beginning of these small leaks. They rapidly become worse, for they are accompanied by heating and sparking which carbonizes surrounding substances, making it possible for still larger currents to flow. If the wires of a dynamo become damp, there is apt to be leakage from one wire to another across the damp insulation, and once started, there will soon be a path of very low resistance, or a "short circuit," that will result in a current heavy enough to melt metal and destroy the usefulness of the machine. Trouble comes in another way, if the dynamo be damp and not well insulated from the ground: while the circuit is supposed to be insulated from the ironwork of the machine, there is liability of a connection, and if the wooden frame under the dynamo be damp and partially conducting, the circuit will be more or less well connected with the earth through the ironwork, wood, masonry, etc.

Suppose, Figure 10, there is a connection to the iron of the dynamo near B, and a path thence through wet wood to a bolt and

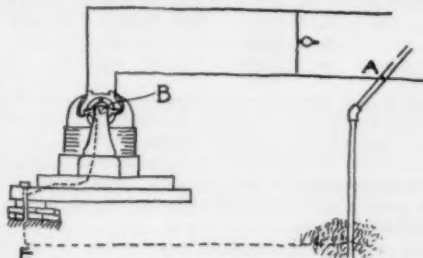


Fig. 10.

to the earth at E. If this be all, there will be no current for there is no path up from the earth to the other wire of the circuit. Suppose, however, that somewhere in a building there is a gas-pipe in electrical connection with the other wire of the circuit, as at A. The gas-pipe runs, of course, to the earth and the current then has a path through pipe, earth, bolt, wet wood, and the iron of the dynamo, between the two sides of the circuit, A and B. There is thus the full electrical pressure of the dynamo to force the current through this path and perhaps burn a hole in the gas-pipe, with easily-imagined result.

A dynamo often emits small sparks, and when working badly throws out bits of molten metal, so that it is evidently unsafe to have the machine placed where there is inflammable matter.

The waterproof cover required, serves to keep the dynamo clean and dry under ordinary conditions, and will be ready to use in case of a leak above the machine or for protection from water damage in case of a fire.

2. CARE AND ATTENDANCE :—

A competent man must be kept on duty in the room where generators are operating.

Oil waste must be kept in approved metal cans, and removed daily.

Approved waste cans shall be made of metal, with legs raising can three inches from the floor, and with self-closing covers.

3. CONDUCTORS :—

From generators, switch-boards, rheostats, or other instruments, and thence to outside lines, conductors—

- a. Must be in plain sight, and readily accessible.
- b. Must be wholly on non-combustible insulators, such as glass or porcelain.
- c. Must be separated from contact with the floors, partitions or walls, through which they may pass, by non-combustible insulating tubes, such as glass or porcelain.
- d. Must be kept, rigidly, so far apart that they cannot come in contact.
- e. Must be covered with non-inflammable insulating material sufficient to prevent accidental contact, except that "bus-bars" may be made of bare metal.
- f. Must have ample carrying-capacity, to prevent heating. (See Capacity of Wires Table.)

The "switch-board" is the frame, board, partition or slab on which are grouped the different instruments, and the devices for controlling the dynamoes and for properly distributing the currents to the different circuits.

A "resistance-box" contains usually a number of coils of wire and its object is to introduce into the electric circuit a resistance that will reduce the strength of the current. It is thus a sort of electrical throttling device. A "rheostat" is an adjustable resistance-box. An "equalizer" is a resistance-box or rheostat used for the special purpose of equalizing conditions in different parts of a circuit. "Resistance-box" is the general term and is applied to all this species of apparatus.

There are innumerable types of "insulators" for supporting wire, and they vary in shape according to the purpose for which they are used. Sketches of a few of them are given below.

Where wires pass through floors, walls and such places, there is particular liability to dampness, and to contact with material that offers a path for leakage. In such places, there is also liability that the insulation on the wire will become abraded in drawing the

wire through, or that it will gradually be abraded by the movement of the wire afterward. For protection in these places "insulating tubes" are used. There is a flange on one end to prevent the tube from sliding through the hole.

The "bus-bar," or omnibus bar, is the main conductor from which the smaller wires lead off to the different circuits in the building or city. The bus-bar is placed on the switch-board, usually at the back.

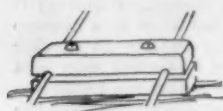


Fig. 11.



Fig. 12.

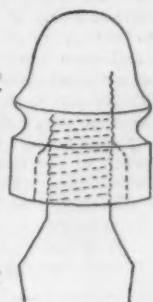


Fig. 13.

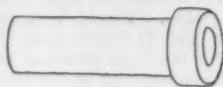


Fig. 14.

The "carrying capacity," or safe carrying capacity of a conductor is the amount of current it will carry without heating to an unsafe temperature. A certain temperature is fixed upon, and there is determined for each size of wire the current that in passing through it will heat it to this maximum allowable temperature. The results of these experiments are embodied in a table of safe carrying capacities for all sizes of wire commonly used.

In dynamo rooms the conductors are usually numerous and very compactly placed, so that there is need of special precaution in construction. Moreover, the wires are the main conductors of the wiring system, and any devices protecting them work only when the full

capacity of the system is exceeded. Short circuits or leaks would consequently be more serious in their effects. In a part of the dynamo-room wiring, it is not practicable to have safety devices and where so much has thus to be trusted to insulation and non-combustibility, the only satisfactory construction is to have the wires in contact with nothing but glass, porcelain, slate or similar material.

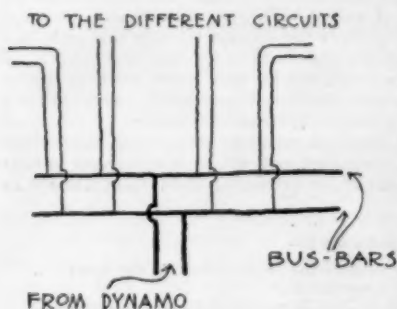


Fig. 15.

Bus-bars are in a place where they are not exposed to contact with foreign substances, but they are to be supported on non-combustible material, as there is a possibility of their overheating.

SWITCH-BOARDS:—

- Must be so placed as to reduce to a minimum the danger of communicating fire to adjacent combustible material.
- Must be accessible from all sides when the connections are on the back; or may be placed against a brick or stone wall when the wiring is entirely on the face.
- Must be kept free from moisture.
- Must be made of non-combustible material, or of hard wood in skeleton form, filled to prevent absorption of moisture.
- Bus-bars must be equipped in accordance with Rule 3 for placing conductors.

[Section a. Special attention is called to the fact that switch-boards should not be built down to the floor, nor up to the ceiling, but a space of at least eighteen inches, or two feet, should be left between the floor and the board, and between the ceiling and the board, in order to prevent fire from communicating from the switch-board to the floor or ceiling, and also to prevent the forming of a partially-concealed space very liable to be used for storage of rubbish and oily waste.]

A switch-board in "skeleton form" is one built as a frame-work, in distinction from a solid board or partition. It gives good ventilation, has a minimum amount of combustible material, and affords little opportunity for leakage.

The switch-board has on it a number of devices controlling the full power of the dynamos, and there is here the full electrical pressure. These conditions often expose the switch-board to intense

heat, and sometimes shutting down the machinery is the only way of stopping the cause. It is consequently best to have everything about the switch-board of non-combustible material, even to the supports for the slate or marble slabs.

With the high potentials that are brought to this point, it is very necessary, too, that the board be perfectly dry and clean, and that the material of which the slabs are made do not have conducting veins in them. All the leakage effects are greatly increased with high potential, and even slate

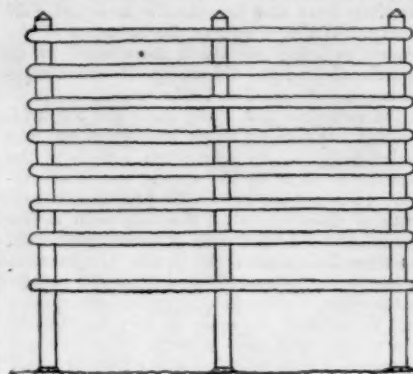


Fig. 16.

slabs have been known to split into many pieces from heat generated by leakage through metallic veins.

5. RESISTANCE-BOXES AND EQUALIZERS:

a. Must be equipped with metal, or other non-combustible frames.

b. Must be placed on the switch-board, or, if not thereon, at a distance of a foot from combustible material, or separated therefrom by a non-inflammable, non-absorptive, insulating material.

[Section a. The word "frame" in this section relates to the entire case and surrounding of the rheostat, and not alone to the upholding supports.]

Resistance-boxes, even in normal working, develop heat, for their office is to introduce resistance into the circuit and all the energy necessary to overcome this resistance is converted into heat. It is not only a possibility, therefore, that is here to be guarded against, but an actual normal condition.

Moreover, as many of the resistance-boxes are made, there is liability of the coils of wire coming together, forming shorter paths for the current and thereby causing much greater temperature than was anticipated. There is clearly but one way to treat this piece of apparatus, and that is to have it wholly non-combustible, and arranged so that it can do no harm even if it heats excessively. As the coils may accidentally become connected to the metal frame, it is also necessary to insulate it as the rules specify.

RUSSELL ROBB.

[To be continued.]

A TRAVELLING SCAFFOLD FOR PAINTING THE ROOF OF A LONDON TRAIN-SHED.

AN ingenious travelling stage or scaffold devised by the contractor, Mr. Charles Wall, of London, has lately been used to facilitate the painting of the inside of the roof of the main train-shed at King Cross station, the metropolitan terminus of the Great Northern Railroad. This roof, which, when it was first constructed about forty years ago, was the largest in the world, was, until quite recently, an object of special interest because of its peculiar construction. Till seven years ago its girders were of wood, being composed, one might almost say, of bundles of planks, fastened together and overlapping each other lengthways: then bent round and forced by sheer pressure to assume the shape of a bow. The design was borrowed from the Czar's riding-school at Moscow. There was, however, one obvious objection, that the planks, like a bow when stretched, always strove to re-straighten themselves, and so exerted a powerful thrust on the outside walls. The west wall was safe enough, for it had the whole range of the Company's offices built upon it; but the east side, even in spite of its flying-buttresses, showed signs of being shaky at an early period, and as long ago as 1869 the span of the roof over the arrival platforms was reconstructed with iron girders. It was not till seventeen years afterwards, in the course of the years 1886-7 that the other span was renewed. For the renewal-work, a huge travelling stage was employed, somewhat similar in principle to the one about to be described, but, of course, of much heavier construction than one designed simply for painters' work. Moreover, the old stage travelled on wheels along the platforms, from end to end, necessitating the removal of clocks, lamps

and other objects which impeded its progress. The new scaffold, on the other hand, runs on rails supported on brackets hung from the roof principals, and thus it is able to move along high up in the arch of the roof without meeting with any obstruction. In fact, the old stage was such a cumbersome and unwieldy affair that on the first occasion of painting the roof since its renewal, no attempt was made to employ a traveller, but a stationary scaffold of ordinary builders' poles was erected, which was taken down from time to time and reconstructed on another spot as the necessities of the work demanded. This plan, however, involved considerable risk of accident, both to the painters and to passers along the platforms.

By last year's arrangement, on the other hand, nearly all the danger and difficulty involved in the other two methods was avoided, and at the same time the painting was carried out with a facility never before attained. The new scaffold is in four pieces, each 36" x 25". It is constructed of 1 1/2" boarding nailed to 11" x 3" joists. Each portion is carried on two steel "queenpost" trusses, to each end of which cast-iron flanged wheels are attached. The rails on which these wheels run are bolted to 5" x 4 1/2" joists, which are carried on brackets hung from the roof principals. Four rails are thus provided, on each pair of which two portions of the scaffold run. Two of these rails are carried on brackets hung from the top of the principals by large bolts stiffened with wooden struts. The other two rails are on brackets fastened by six smaller bolts apiece, about halfway up the principal girders on either side of the roof span. Each portion of the scaffold runs on one of the side and one of the top rails; there are two portions on each side of the apex of the span, and the whole covers two 20' bays (i. e., sections between the principals) and overlaps 5' on each side. The gap of 4' between the two top rails can, for painting purposes, be covered by a flap hinged to the scaffold on one side. The whole traveller weighs about eight tons, and the moving is easily performed by a crab-winch worked on the platform below, the rope from which runs over a pulley attached to the flange of a girder at a convenient distance from the scaffold, thus giving a straight pull from the scaffold.

During the recent operations fifty men were employed on the scaffold, and these could give one coat of paint to two bays each day. As the roof had to receive two coats, this meant that, to keep the men fully employed the stage must be moved one bay each day. Accordingly, very early each morning one set of rear brackets was taken down and hung to the next girder in front of the scaffold, the rails adjusted, and the traveller moved forward on its daily journey. As the roof is in two spans, each 800' long, 100' wide and 91' high and containing 40 bays, the whole work took just about 80 days. It may be mentioned further, that the wooden trusses of the scaffold were stiffened by diagonal hoop-iron ties, and battens were nailed on the boarding about 2 feet apart to give foothold to the workmen. The portion of the roof below the scaffold was painted from wide ladders resting on beams fastened to the flanges of the girders. The ladders were drawn up and moved along on the traveller, while the beams were moved by hand along the platform below. The scaffold has now been taken to pieces, and its parts put away, carefully numbered, for use again when the time of painting comes round three years hence.

C. H. G.

London, Oct. 25.

HINTS TO ART STUDENTS ON TRAVELLING ABROAD. — III.

HAVING thus decided where you are going, what you are going to do, and what to do it with, the problem becomes, "How am I going to carry everything?"

It is a great advantage to divide your belongings, to have one package for wearing-apparel and a separate package for drawing-materials. A very convenient thing in which to carry drawing-materials is an English "hold-all." It is made of canvas and consists of two large pockets with flaps which fold over and tie: the whole thing folds flat, about the size of an imperial drawing-board and has stout straps and a handle; a good one costs about four dollars and only the best will stand the wear. In one pocket may be placed a large portfolio for paper, a stool which folds flat, the top of the *chambre éclairée* table, a small T-square, the color and brush boxes; in the other pocket, the *chambre éclairée* and the folding table-legs. Two small pockets will carry the small articles and in the outside pocket can be put the water-bottles, guide-book, and railroad timetable. The measuring-rod and umbrella slide through loops near the handle, and the water-color block in its canvas envelope can be stood up between the two pockets.

With this arrangement in one hand and a small lock valise, containing toilet articles, change of linen, etc., in the other, a rubber coat strapped to the valise, and a heavy woolen sweater, you are ready to start forth prepared for almost all climates.

It is very agreeable also to take a small trunk containing such things as are convenient for a stay of some time in the large cities. But beware of taking a lot of luggage; it is a burden and an expensive one. There is no American checking system abroad and baggage is not carried free except in England. It must be sent by express, of which there are two kinds, fast and slow: In England called "express" and "goods freight," respectively; in France, "grande vitesse" and "petite vitesse"; in Italy, "grande velocità" and

"piccola velocità." Slow express is much the cheaper, but it is very slow indeed. It is necessary to allow from four to six weeks from Paris to Rome, so it is necessary to make calculations ahead. It is not very expensive, however, to send a small trunk by slow freight to the four or five large cities in which one passes some time.

If you do not speak the language, it is best to send the box with its key through some responsible forwarding-agent. They will call for and deliver it, and all you have to do is pay. It may be cheaper to forward it yourself, but in that case you will have to go to the custom-house for it, even though simply sending it from one city to another in the same country, and there will be a fee for storage, for the porter, the examiner, the weigher, the stamps, the cord and seal, and for a dozen other things unless you demand to know exactly what each is. Get a piece of clothes-line, tie it about the box and seal the ends with wax; that will save you a dollar every time, for the law requires packages to be sealed in that manner.

If you wish to send any large drawings, get a tin tube ready-made at some art store, roll up the drawings in it, seal it up, and take it to the freight-office. The post on the Continent only takes small objects.

The great advantage of having the drawing-materials in a separate package by themselves is that on arriving in a town, the valise may be left at the station and then you are unincumbered, free, and ready to start out at once, with only the drawing-materials. It often happens that a town has but one good thing to study, and that may be done in a day and you are ready at dusk to take the train to the next place.

In England these baggage-rooms are called "soft luggage," or "parcel-rooms"; in France, "bureau de consigné"; in Italy, "deposito"; in Germany, "gepäck." Unfortunately, Spain has no system of this kind.

On arriving at a place, the luggage can be left at the station for two cents and so cab-fare can be saved by walking to an hotel. Baedeker sometimes gives a clue to good cheap hotels (which terms are not synonymous), but a student who has just returned from travelling, generally has a list of hotels that will save many shakels.

In England, coffee-houses are comfortable and much cheaper than commercial or temperance hotels.

In France, the most economical rooms are found in connection with restaurants.

In Italy, the native "albergos" and "frattorias" are cheapest.

In all these places it is most economical to simply take a room and go to whatever restaurant is nearest at meal-time, thus saving a great deal of time.

In Spain it is different; the boarding-houses called "huespedes" are cheapest and include meals and rooms.

There is quite an art in engaging rooms. The Continental hotel-keeper, like the shopman, is apt to demand more than he expects and it is often possible to secure the same room at a reduced price, that he was intending to give you, by saying, "I must have a cheaper room: I can only pay so much."

In France the magic words are, "Il me faut meilleur marché," in Italy, "Non posso pagare più che."

It is more economical for two persons to travel together than for one alone. Two persons should generally get a room for three francs a night (sixty cents), everything included. And it is necessary to stipulate "everything included," otherwise there will be an extra for candle, service and boots. In France it is "tout compris," in Italy, "tutto compreso."

It takes some of the poetry out of travel to be obliged to make bargains, but it saves the student many pennies.

Disguise the fact that you are an American. Prices advance enormously at the sight of an American or Englishman. Keep away from shops and hotels frequented by your countrymen. Do as the natives do, and beware of the shopman who speaks "a little English."

The cost of travelling and studying varies considerably in the different countries. Italy is one of the cheapest, where it is possible to keep the cost of living and travelling down to a total of \$1.32 per day, 40c. for railroad fares and 92c. for living expenses. The railroad fares are small per day, because the cities are so close together.

Germany is the most expensive, where the average cost per day is \$2.58. Railroad fares \$1.35, living expenses \$1.23.

The cities are so widely separated that the average fare per day is considerably raised.

The following table will show the average cost per day of student-travel in different countries and the cost of living in Rome, Athens and Paris.

These figures are an average obtained by dividing the total cost of living and travelling in a country by the total number of days. They mean rapid travelling, stopping, on an average, only two days in a town. Of course, when stopping a week or more in each place the average would be greatly reduced.

The table means ordinary student-travelling through small places.

England..	\$2.08 per day	Railroad \$	.88...	Living	\$1.20
France....	1.83 " " " "	"	.59...	"	1.23
Italy.....	1.32 " " " "	"	.40...	"	.92
Sicily....	1.45 " " " "	"	.52...	"	.93
Germany..	2.58 " " " "	"	1.35...	"	1.23
Spain....	1.98 " " " "	"	1.24...	"	.74
Athens, in winter, including fires.....				"	.80
Paris, " " " "				"	.85
Rome, " " " without " " " "				"	.73

¹ Continued from No. 1000, page 84.

The above figures are not exaggerated. They are average figures. It is possible to travel still cheaper, while there is no limit to the amount one can spend. It is not advisable, however, to travel cheaper, and one could hardly go cheaper and do good work.

It must be understood that the above figures do not mean luxurious travelling. It means third-class on the railroads, walking to hotels, and cheap ones at that, and not spending a cent more than necessary.

As a matter of fact, students generally spend considerably more than this. But it can be done in a decent manner for these figures and has been done for less.

A student can travel continuously throughout Europe, visit in a year's time England, France, Italy, Sicily, Greece and Germany, buy photographs and material for study, and spend a little on non-essentials and not expend more than \$850 a year. But it is seldom done.

The cost of living in Athens, Rome and Paris is computed on the basis of a student living alone, hiring a room by the month and taking all his meals at a restaurant. If two persons took a room together, made their own coffee in the morning, and rented the room by the year, the expense would be lessened.

A very economical and pleasant method of student life in Paris is for two students to rent two rooms with a small kitchen by the year, prepare part of their meals themselves, and procure the meats and cooked vegetables from a neighboring "cuisine." The "cuisine" is a feature of Paris. They are public kitchens where one may obtain cooked meats and vegetables. This plan effects a considerable saving in heat and light.

The subject of Paris student life, cost of ateliers, drawing-classes, etc., has been very ably treated in previous articles in this journal.

Students, who wish to be economical, will find it perfectly possible to travel third class. It is not particularly comfortable and is rather Bohemian, but a considerable saving is effected.

The classes on railroads have been very accurately described by some one who says that "In the first-class carriages, the people are rude to the guard; in the third, the guard is rude to the people; and in the second, the people are rude to one another."

First-class costs double third, and second, one-third more than third-class.

The writer has a lingering remembrance of travelling one day in Greece in a compartment filled with peasants dressed in goats' skins, sandals and big felt cloaks, carrying knives in their belts and shepherd's-crooks in their hands. A prominent feature of the party was an immense jug of wine preserved, after the manner of the country, by the addition of rosin, which imparts to it a flavor such as one might imagine furniture polish to possess. It was considered very rude indeed to refuse to drink from this jug which circulated from mouth to mouth without the intervention of a cup.

In some parts of Europe, third-class is perfectly possible. In England and in France on the Chemin de Fer de l'Ouest, the seats are cushioned and comfortable.

A number of persons travelling together can sometimes obtain reduced railroad fares by asking for a family-ticket.

On the Continent, there is a system of railroad tickets called Circular Tours, which saves about one-third the fare, and makes second-class with a circular ticket about as cheap as third-class without the circular ticket. They are not issued to third-class. The system is that one can travel about the circumference of a circle for the same fare it costs across the diameter and back. In practice, you pay for a round-trip ticket to the farthest point of your journey, and you may arrange to travel on the circumference of a circle to that point and back, if you wish. This entails returning to your starting point, and there is a time-limit on the ticket of from two weeks to three months.

Always carry a railway time-table in travelling. They are inexpensive and will save you from a great deal of worry and annoyance, prevent you from just being too late to catch trains and save hours of waiting at uninteresting railroad junctions.

The English time-table is something of a puzzle, and requires some study to understand its system. But the French and Italian time-tables are perspicuity itself. In France it is called "*Judicateur du chemin de fer*"; in Italy, "*Guida dei freni*"; in Spain, "*Una ora*."

J. W. CASE.

(To be continued.)



NEW YORK CHAPTER AMERICAN INSTITUTE OF ARCHITECTS.

A REGULAR meeting was held at the Chapter quarters, on Wednesday, February 13, 1895, at 3.50 p. m. . . .

President Upjohn in the chair. . . .

Reports from special committees being in order, the Secretary from that on the Revision of By-laws reported that the Committee's work remained *in statu quo* waiting for elucidation as to real or supposed ambiguity of the new Institute By-laws. . . .

The Special Committee on a Seal for the Chapter presented a design therefor, consisting of the initials and motto of the Institute on a ground of the same shape as that of the seal of the latter, and cir-

cumscribed with the name of the Chapter and the date of its incorporation, and this again enclosed within the same border as that of the Institute, the whole seal being thus identical with that of the Institute, except for the substitution of the name and date of the Chapter instead of those of the Institute. In view of the desirability of emphasizing the fraternal relations of all the Chapters of the Institute with each other and their common coördination within the Institute, the Secretary was desired to write to the Secretary of the Institute, Mr. Stone, that he should suggest to all the Chapters the adoption of the like seal, with the necessary changes as to name and date.

Communications being in order, the Secretary presented the following:

A tentative draft of a constitution for a proposed affiliation, for certain purposes, of several art societies of New York, accompanied by a letter from a Special Committee of the Architectural League of New York, consisting of Messrs. Geo. L. Heins, Chairman, Thomas Hastings and Russell Sturgis, giving reasons, in their opinion, for its formation and inviting the Chapter, together with the American Water-Color Society, the Municipal Art Society, the National Academy of Design, the National Sculpture Society, the Society of American Artists, the Society of Beaux-Arts Architects and the Water-Color Club, to send delegates to attend an informal conference for consultation on the subject. On motion, President Upjohn was requested to appoint three members to attend said conference. (The members appointed were Messrs. Kendall, Wolf and Boring.)

A circular letter from the Secretary of the Institute saying that its Board of Directors had passed the following resolution, viz: "That the practice on the part of an architect, of publishing or allowing to be published advertisements of builders and manufacturers of building materials, in connection with his designs is unprofessional." A few remarks followed, showing that in the opinion of the meeting the resolution was ill-worded and ambiguous and probably did not express the real meaning of its authors, who must realize, on reflection, that its adoption by the Chapters would be inoperative, and that there were legitimate modes of advertising among all professional men, although some architectural practitioners (mainly, it is believed, outside of Institute Brotherhood) included illegitimate methods in their conduct of business. The Secretary was requested to inform the Secretary of the Institute of this opinion of the meeting.

A letter from Mr. W. R. Briggs, of Bridgeport, Conn., Chairman of a Special Committee of the Architectural League of New York — the other members being Messrs. R. M. Hunt, Post, Huss and C. I. Berg — asking the coöperation of the Chapter in promoting, at Albany, the passage of a bill for the licensing of architects in New York State. The Secretary said that this movement, begun some years ago by the two Chapters of New York State, and carried far forward with such zeal by the late lamented Mr. Carlin of the Western New York Chapter, should certainly receive the continued support of the New York Chapter, and moved that President Upjohn appoint a special committee of three to coöperate with the League Committee. Carried. (The members appointed were Messrs. Cordes, Carrère and H. Constable.)

A letter of the Secretary, of January 29th, asking Mayor Strong, in reference to the competition for a proposed new city-hall, what progress had been made toward a selection of the plans forwarded by the competitors and towards a settlement of their claims in the premises under the terms of the regulations issued to architects by the municipal authorities was read, with his Honor's answer that he did not understand that any further progress had been made in the matter of the selection of plans, etc. The correspondence was ordered on file.

A letter from Mr. Elmer T. Corthell, late Chairman, General Committee of Engineering Congress, submitting a proposition for the establishment of an international Institute of Engineers and Architects was read. The Secretary was desired to forward the same to the Secretary of the Institute. . . .

A letter from Mr. Elliott Smith, Secretary of the Mechanics' and Traders' Exchange, informing the Chapter that its rules authorized the admission to its quarters and appliances of practising architects, upon making themselves known to the Superintendent was also read.

The Secretary repeated a request that any duplicate copies of the "*Proceedings of the Institute*," which members could spare, should be forwarded to him for transmission to libraries, the Secretary of the Institute and other applicants.

The attention of the meeting was called to the fact that important changes had been suggested in relation to the Building Law of this city, and notably one involving the transfer of the Plumbing Bureau, now in the Building Department, to the Health Department of the city, which change, by the replication and separation of drawings and specifications, would cause great inconvenience to all parties concerned in the filing of plans for proposed building operations.

Remarks from various members followed, showing, as regards a transfer — or rather re-transfer, for the experiment has been already tried — of the Plumbing Bureau, that the prevalent opinion was against it, not only on account of the inconvenience above mentioned, but because no necessity is apparent on the score of a better care of the City's health, as the Plumbing Bureau of the Building Department has been controlled by experts in that line within the Bureau for several years, and no fault has been found with their work.

It further appeared, from the remarks elicited, that in their intercourse with the Building Department, the members present had conceived a very favorable opinion of Mr. Brady's conduct of it, and of

its very much improved *personnel* and conditions as contrasted with those of former years.

The Secretary was desired to communicate with his Honor, Mayor Strong, and request him to give such instructions, as should insure to the Chapter full and prompt information as to any contemplated changes in the Building Law, arising from State or Municipal Legislation. . . .

(Signed) A. J. BLOOR, *Secretary*.

CLEVELAND ARCHITECTURAL CLUB.

THE subject for the third regular competition of the Cleveland Architectural Club was "A City Café." Architect W. W. Sabin was the judge, awarding as follows: First, W. D. Beuls; Second, Leland Ray Rice; Third, Harry I. Nelson; Fourth, Charles S. Schneider; Fifth, G. B. Bohm.

The subject for the March competition is "A Scheme for the Location of Cleveland's Public Buildings."

HERBERT B. BRIGGS, *Secretary*.

CHICAGO ARCHITECTURAL CLUB.

THE Eighth Annual Spring Exhibition of Works of Architecture and the Allied Arts will be held in the galleries of the Art Institute, opening Thursday, May 23, 1895. It will remain open for about two weeks. Works will be received until Saturday, May 11, 1895.

The exhibition includes:

1. Architectural perspectives and elevations in all renderings.
2. Architectural sketches in all renderings.
3. Landscape architecture.
4. Interior architecture.
5. Interior decoration.
6. Interior furnishings (samples and sketches).
7. Architectural and decorative metal work (wrought-iron, bronze and brass).
8. Sculpture (architectural and ornamental).

Subjects previously and publicly exhibited in Chicago are barred from this exhibition.

An illustrated catalogue will be issued in approved form, for which exhibitors may furnish cuts or phototypes of their work, which shall be published at the discretion of the Catalogue Committee. Maximum size of cut, full page, 4 1/2" x 6". Cuts received until April 25th.

The jury of admission shall be selected from prominent members of the profession as well as from representatives of manufacture.

All drawings must be framed or mounted on stretchers.

Transportation charges both ways must be paid by the contributor.

JOHN ROBERT DILLON, *Secretary*.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

DOORWAY TO HOUSE OF R. M. HOE, ESQ., 11 EAST 71ST ST., NEW YORK, N. Y. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

[Heliochrome issued with the International and Imperial Editions only.]

HOUSE FOR W. C. JOHNSON, C. E., NIAGARA FALLS, N. Y. MR. HENRY S. MASON, ARCHITECT, PITTSBURGH, PA.

THE building will be constructed of dark-red pressed brick with Medina sandstone base and trimmings and with shingled gables.

Patent prepared plaster will be used throughout. The principal rooms will be finished in hazel, the remainder in white pine, all finished in oil. Windows of first and second floors will have plate glass. High grade hardware, plumbing and plumbing fixtures are specified. Heating will be steam: indirect for first floor and direct above. The attic contains a billiard-room and fencing floor and in the cellar are servants' toilet, vegetable, preserve and coal rooms, and laundry with outside entrance; outside of cellar is a large rain cistern connected with plumbing and ventilation system. House to cost a little under \$10,000 completed.

THE JULIA F. BURNHAM HOSPITAL, CHAMPAIGN, ILL. MESSRS. McLANE & GUNN, ARCHITECTS, CHAMPAIGN, ILL.

THIS job was obtained in competition and the building has been constructed and is now in use.

ALTERATIONS TO HOUSE OF MRS. P. B. PLUMP, EMPORIA, KANS. MR. H. W. JONES, ARCHITECT, MINNEAPOLIS, MINN.

HOUSE FOR MR. GOODING AND MR. DEXTER, PETERSHAM, MASS. MESSRS. CHAPMAN & FRAZER, ARCHITECTS, BOSTON, MASS.

PROFESSOR'S HOUSE FOR REV. M. VALENTINE, D. D., LUTHERAN THEOLOGICAL SEMINARY, GETTYSBURG, PA. MR. J. A. DEMPWOLF, ARCHITECT, YORK, PA.

CHURCH OF ST. GERMAIN L'AUXERROIS, PARIS, FRANCE. DRAWN IN INK, *sur place*, BY MR. A. A. STOUGHTON, LATE HOLDER OF THE COLUMBIA FELLOWSHIP IN ARCHITECTURE.

HOUSE OF JAMES W. LOOMIS, ESQ., WESTFIELD, MASS. MR. E. A. ELLSWORTH, ARCHITECT, HOLYOKE, MASS.

[Additional Illustrations in the International Edition.]

HOUSE OF R. M. HOE, ESQ., 11 EAST 71ST ST., NEW YORK, N. Y. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

[Gelatine Print.]

WINDOW-PANEL SCULPTURES FROM THE CHÂTEAU DE VAUX-LE-VICOMTE, SEINE ET MARNE, FRANCE.

[Copper-plate Engraving.]

THIS château, made equally memorable by its architectural magnificence and by the glamour that the elder Dumas threw over it in the "Vicomte de Bragelonne," was built by Fouquet, the Superintendent of Finance, in the early part of the reign of Louis XIV. The successor of the counts, marshals and dukes who once owned the château and park is now a Parisian manufacturer, M. Sommer. The building is about four miles from Melun or about thirty miles from Paris.

DETAIL OF WINDOW IN THE HALL OF THE CHÂTEAU DE VAUX-LE-VICOMTE, SEINE ET MARNE, FRANCE.

[Copper-plate Photogravure.]

HIGHER GRADE AND TECHNICAL SCHOOLS FOR THE DOUGLAS SCHOOL BOARD, ISLE OF MAN, ENG. MR. THOMAS W. CUBBON, ARCHITECT, BIRKENHEAD, ENG.

THESE buildings have recently been erected on a site fronting Park Road, Douglas, and provide accommodations for 550 scholars.

The buildings, which are two stories high, are constructed of local gray pressed-bricks, relieved by red pressed-bricks, the heads and sills of windows, etc., being red sandstone.

DOWNSSELL ROAD BOARD SCHOOLS, WANSTEAD, ENG. MR. JOHN T. BRESSEY, ARCHITECT.

THIS building, which will shortly be completed, is situated on the detached part of Wanstead known as Wanstead Slip. The western portion of the school, consisting on each floor of three class-rooms and a school-room with lavatories and staircase, was erected in 1886; two more class-rooms on each floor were added in 1888, and the plans for the completion of the building were sanctioned by the Education Department a few weeks ago. Externally, the building is faced with picked stocks and kiln-burnt red bricks; internally also, picked stocks are employed above the brown salt-glazed brick dado. When completed, the school will accommodate about 1,800 children, and will have cost about 15,500*l*.

SEDILIA, ST. PAUL'S CATHEDRAL, LONDON, ENG. MESSRS. BODLEY & GARNER, ARCHITECTS.

STATION HOTEL, PERTH, SCOTLAND. THE LATE ANDREW HEATON, ARCHITECT.

[The following description of the schoolhouse for Newtonville, by Mr. A. C. Fernald, architect, Boston, Mass., should have been published with the drawing in our last issue:

A school-house of eight rooms and exhibition-hall, to be finished complete, with steam heating and ventilating apparatus; the cost not to exceed \$40,000.

Basement-plan provides for play-rooms, lavatories, heating and ventilating apparatus and fuel.

First and second floors have four class-rooms each, provided with slate blackboards on all sides, platforms for teachers, closets and book-cases. Teachers' toilet-rooms on second floor.

Third floor contains the exhibition-hall, having a ceiling fifteen feet in clear at centre made to conform to the shape of roof. Ante-rooms are provided at each end of hall, which could be used as class-rooms if required.

Wardrobes are placed in the corridors, being the usual form of open wire-work screen partition.

Two flights of broad easy stairs are carried from the basement to third floor to be constructed of hard-pine plank throughout. Soffits finished bright, all open construction.

Ceilings to be wire lathed. All main partitions to be of brick, including warm air and vent flues. Minor partitions of metal lathing on light iron framework, plastered solid to make fireproof. Exterior brickwork, of Eastern water-struck brick. Roof to be slated;

gutters and conductors of sixteen-ounce copper. Loggia-floor and entrance steps of North River blue-stone.

Freestone trimmings for loggia columns and cornice and window sills, etc.

Heating to be an indirect steam system with fan or blower driven by electric motor. Basement lavatories and all class-rooms provided with separate vent-flues of required capacity.

The building covers 6,480 square feet.]



BALTIMORE, MD.—The Walters Art Gallery will be open to the public on all Wednesdays in March.

BOSTON, MASS.—*Winter Exhibition, including Pictures loaned by Quincy A. Shaw; Paintings by Puvion de Chavannes; Line Engravings, Mezzotints, and Etchings by Rembrandt; at the Museum of Fine Arts.*

Paintings by Childe Hassam: at Doll & Richard's Gallery, closes March 6.

Paintings by John Leslie Breck: at the St. Botolph Club, February 25 to March 9.

CHICAGO, ILL.—*Pictures by George Inness and Claude Monet; also, an Exhibition of Bookbindings: at the Art Institute, February 26 to March 24.*

NEW YORK, N. Y.—*Loan Exhibition: at the Metropolitan Museum of Art, New North Wing, opened November 5.*

Twenty-eighth Annual Exhibition of the American Water-color Society, also, New York Etching Club Exhibition: at the Academy of Design, February 4 to March 2.

Tenth Annual Exhibition of the Architectural League: at the Galleries of the American Fine Arts Society, 215 West 57th St., February 15 to March 9.

Works by John LaFarge: at the Durand-Ruel Galleries, 389 Fifth Ave., February 25 to March 4.

Exhibition of the Dutch Water-color Society: at Boussod, Valadon & Co.'s Galleries, Fifth Avenue, opened February 15.

Drawings by J. Alden Weir: at Wunderlich & Co.'s Galleries, 808 Broadway, February 18 to March 9.

Paintings by P. Marcus-Simons: at the Avery Galleries, 368 Fifth Ave., February 18 to March 2.

Water-colors and Pastels by John J. Redmond and Frieda Voelter Redmond: at the Klackner Gallery, 7 West 28th St., February 27 to March 9.

Works by J. F. Raffaelli and Edwin A. Abbey: at the American Art Galleries, 6 East 23d St., opened February 28.

PROVIDENCE, R. I.—*Paintings in Oil and Water-color, and Sculpture: at the Art Club.*

SPRINGFIELD, MASS.—*Eighteenth Annual Exhibition of Paintings: at James D. Gill's Gallery, February 1 to March 2.*



COQUELIN, CADET, AND M. INJALBERT.—Coquelin, "cadet," has grown tired of being less talked about than his elder brother. The Rodin-Balzac incident finds its sequel in the Injalbert-Molière comedy. The town of Pezenas wished to erect a statue to Molière, in honor of his sojourn there, and in 1893 the Comédie went there and gave a representation to begin the fund. M. Injalbert was asked to lend his talent to the work, and, in the Champ de Mars last spring, the group was shown in its early development. Around the figure of Molière came Mlle. Ludwig as Lucette and "cadet" as the faun. The actor was so delighted that he began a subscription, and among his friends a sum of some 2,000fr. was raised. To this clear blue sky the sculptor brought a thunder-storm by suddenly deciding to suppress both Lucette and "cadet." Thereupon the latter seized his pointed pen and wrote to the committee that his subscription and that of his friends would be recalled. No Coquelin, no money. There was not enough subscribed, any how, but this was sure disaster. So M. Claretie has been asked either to persuade Injalbert to execute his first project or make Coquelin reflect that the monument is for Molière first.—*L. K. in the N. Y. Times.*

HOW THE BASTILE ENRICHED PALLOY.—Palloy, the self-called patriot contractor and the Haussmann of the French Revolution, obtained the contract to demolish the Bastille and cart away the material, and made a good thing out of it. He built with the stones the bridge over the Seine at the Place de la Concorde, the guard-house of the theatre on the Boulevard du Temple, and the house at the corner of the Boulevard Poissonnière and the Rue Saint Fiacre. He employed 1,000 workmen in demolishing the old prison fortress. The blocks of stone he was unable to use as a builder were turned to account in the carving-out of the models of the Bastille, which he got the Government of the Republic to buy and send to the chief towns of the newly-made Departments as patriotic gifts. He thus cleared a net profit of nearly £4,000. With the broken-up mortar and other rubbish he made a concrete, out

of which small Bastilles, which patriots eagerly bought, were moulded. The sum he received for demolishing and carting off the Bastille was £40,000—an immense sum in his time.—*Daily News, London.*

QUARRYING IN INDIA.—At Bangalore, in Southern India, granite slabs as large as 60' x 40' and half a foot thick are quarried by means of wood fires. A narrow line of fire, about seven feet long, made of dry logs of light wood, is gradually lengthened and moved forward over an even surface of solid rock. It is left in position till strokes with a hammer show that the rock in front of the fire has become detached from the main mass beneath; the burning wood is then pushed on a few inches. The rock keeps splitting about five inches below the surface. It takes about eight hours and fifteen hundred-weight of wood to set free a slab measuring 740 square feet. Afterward the plate is easily cut with blunt chisels into strips 2½ feet wide.—*Inter-Ocean.*

M. TISSOT TURNS MONK.—It is said that M. James J. Tissot, the celebrated French artist, has entered a monastery of a most severe order. His water-colors, "The Life of Christ," which were exhibited last year in the Champ de Mars, created a sensation, and were considered among the chief attractions of the exhibition. Some years ago, Tissot was exiled from France for being a Communist, but when it was afterward explained that his object in joining was, in case of revolution, to protect the Louvre and Luxembourg galleries, he was pardoned by the Government. He returned to Paris and fitted up a handsome studio on the Avenue du Bois de Boulogne. He has given the last few years of his life entirely to his water-colors of "The Life of Christ," spending several months of each year in Jerusalem. Reproductions of these works will be issued in a year or so.—*N. Y. Tribune.*

THE WALKING-DELEGATES TO BOYCOTT THE SALVATION ARMY.—With what are known as "mingled feelings" must be received and considered the news that a Board of Walking-Delegates has resolved to boycott the Salvation Army. Members of the latter organization, it appears, are building an "armory," wherein to conduct their campaign against evil, and these members, so far from charging union wages for their work are charging nothing at all. Hence, the resolution to boycott. What effect it will have on the Salvationists remains to be observed. So far as known, the Army has nothing for sale, so the walking-delegates cannot refuse to buy it; should the Board sternly absent itself from all meetings held by the Army, there is no likelihood that a marked diminution in the size of the gatherings would make itself manifest. It might be well for the walkers—especially at some time in the future—if they made speed with exceeding slowness in this matter. There is an enormously serious side to it, and one whose consequences may be very far-reaching indeed.—*N. Y. Times.*

TO EXTRACT CARBON FROM SMOKE.—The *Scientific American* describes a simple method of extracting carbon from smoke, which has been tried successfully in St. Louis. The exhaust-pipe is extended, either outside or inside the chimney, to within about four feet of the top. A vacuum is produced by the steam entering the air, and a slight down draught is also caused, carrying the carbon saturated with moisture of the steam to a soot-box at the bottom of the chimney. The gases in the chimney receive an extra impetus in filling the vacuum, thus drawing an additional amount of oxygen into the furnace, and the draught in the chimney is uniform, because governed by the velocity of the steam at 212 degrees Fahrenheit, the point of condensation. Ninety-six per cent of the carbon entering the chimney is said to be precipitated, and can be sold for lamp-black, for making inks, etc. The other four per cent is either precipitated on the roof or chemically changed, as no color is visible from four to ten feet from the chimney. This device has been in successful operation for the last eight months on the chimney for the Roe Building, a large office-structure in St. Louis, and, by actual test, 96 per cent of the carbon entering the chimney was found to be precipitated.

FIRST AID TO THE ELECTRICALLY SHOCKED.—The French Minister of Public Works, under expert advice, has prepared the following rules in case of shock: The victim is to be, first of all, taken into an airy place; three or four persons should be taken there to assist and no one else allowed to enter. The clothing is to be loosened and efforts made to reestablish respiration and circulation as soon as possible. To reestablish respiration, recourse can be had to the following two methods, viz, drawing of the tongue and artificial respiration. In the former case, the mouth of the victim is opened with the fingers, or, if there be resistance, with a piece of wood, the handle of a knife, spoon or fork, or end of a walking-stick. The front part of the tongue should then be taken between the thumb and index finger of the right hand, bare or covered with, say, a pocket handkerchief to prevent slipping. The tongue is then strongly pulled, and allowed to relax, in rhythmical imitation of respiration, at least twenty times a minute. These movements must be continued without a break for half an hour or more. For artificial respiration the subject should be laid upon his back, the shoulders slightly raised, the mouth open and the tongue free. The arms are taken at the height of the elbows, supporting them strongly on the walls of the chest, next bringing them above the head, describing the arc of a circle. These movements are to be continued at least twenty times a minute until the reestablishment of natural respiration. It is suitable to commence with the movement of the tongue as described, simultaneously, if possible, with the adopting of artificial respiration. At the same time, it is desirable to try and restore circulation by rubbing the surface of the body, by beating the body with the hands or with wet towels, throwing cold water on the subject from time to time, and applying ammonia or vinegar to the nose.—*Boston Transcript.*

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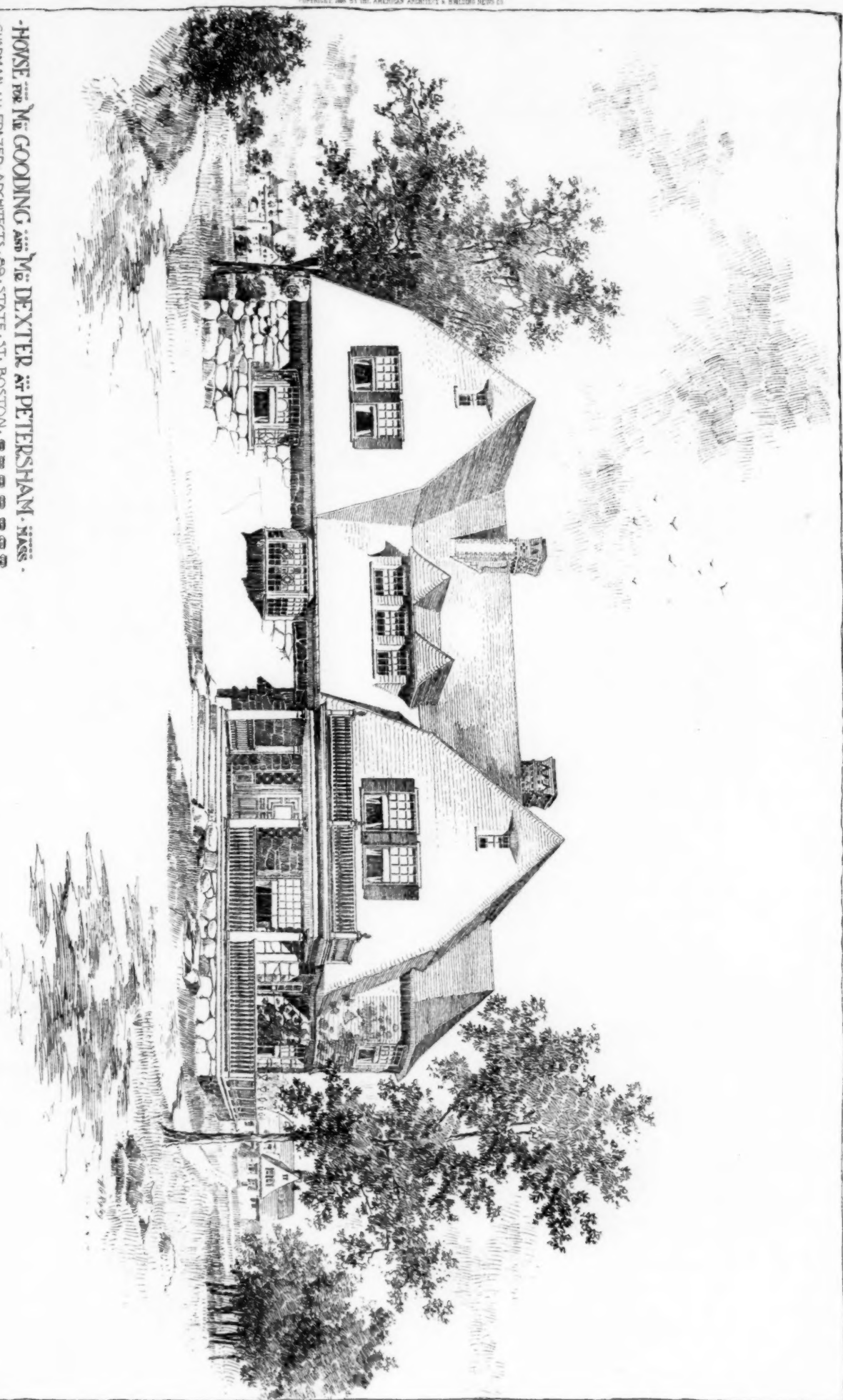
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[PEN SKETCH FROM NATURE]



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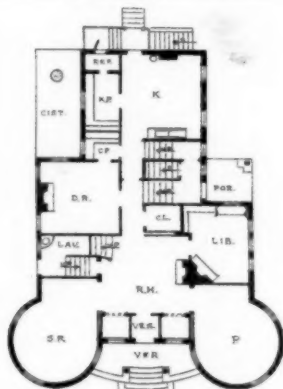


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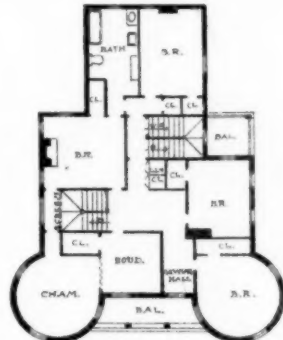
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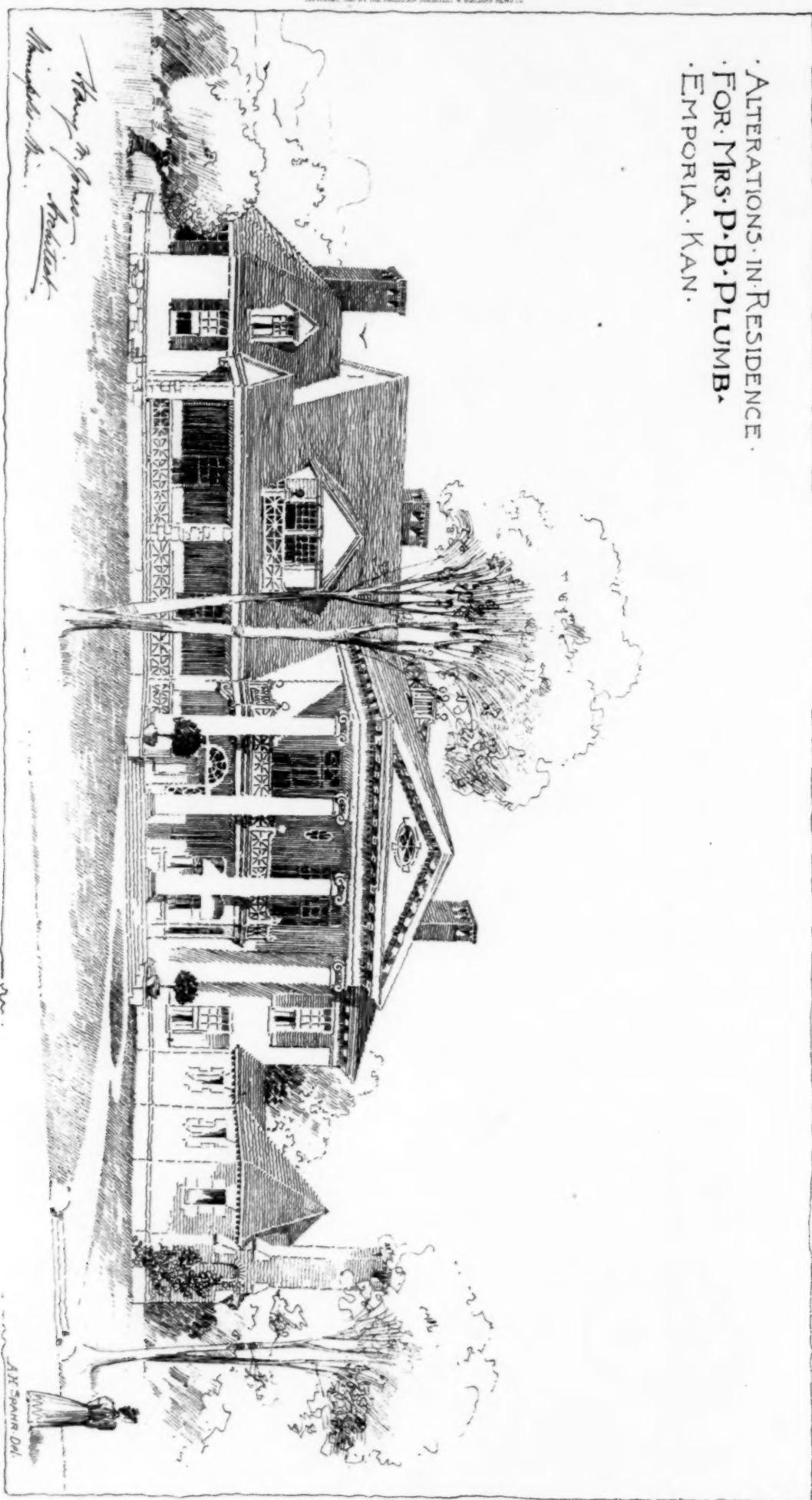
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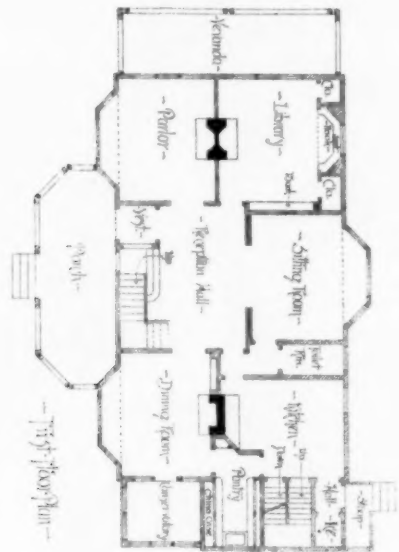


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