PRICE 15 CENTS.

5-5-93 37 42

AUGUST 18, 1894.

THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. XLV. * REGULAR EDITION * NO. 973.

ARCHITECTVRE

ENGINEERING

DECORATION

CONSTRVCTION

211 TREMONT ST.

BOSTON, MASS.

CONTENTS.

ILLUSTRATIONS.

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

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CONTENTS

THE Twenty-eighth Annual Convention of the American Institute of Architects is to be held in New York, in the rooms of the Architectural League, on Monday, Tuesday and Wednesday, October 15, 16 and 17. Papers have been promised from Messrs. Longfellow, Van Brunt, Sturgis, Hastings, Wight, Sullivan, Gibson and Clark, and arrangements have been made for securing a full discussion of the papers. The matter of the relation of the Chapters to the Institute is to be brought up, by the offer of amendments to the by-laws, looking to the admission of all practising members of the Chapter to the ranks of the Institute, and putting the business of the Conventions into the hands of delegates from the Chapters. It is several years since a Convention has been held in New York, and it is to be hoped that there will be a full attendance. So much interesting architectural work has been done in New York during the last few years that members of the Institute from a distance will be well repaid for a visit to the city, and it is to be hoped that arrangements may be made for giving them a good look at the new work.

BY the profession in this country, the name of Arthur Rotch will always be honorably remembered, perhaps with some little injustice to his brother and sisters who joined with him some eleven years ago in founding, in the memory of their father, the trust that is expected to send abroad each year, so long as trusts may endure, an architectural student to study and travel during a period of two years. Having himself had the benefit of an unusually long period of study in Europe, Arthur Rotch, whose life closed this week, felt that in no way could more good be done for the architectural progress of this country, than by enabling a number of young men to gain that sort of education of the senses which control proportion and fitness that can only be had by occular observation of works of architecture in place. Born in Boston, May 13, 1850, and graduating at Harvard College with the class of '71, he studied architecture for two years at the Massachusetts Institute of Technology and then went to Paris and enrolled himself as a student at the École des Beaux-Arts. Here he worked with great persistency and considerable success, although often interrupting his studies by making extended trips into various countries. Returning to this country in the autumn of 1880, he disappointed his friends, who half expected that, having ample means, he would lead the life of a mere dilettante, by forming a partnership with George T. Tilden and entering actively on the practice of his profession. The practice of the firm has been confined mainly to dwelling-houses, of which many costly ones have been erected in Boston, Bar Harbor, Washington and other places. Of work of a different nature may be specified the Memorial Church of the Holy Spirit, at Mattapan, Mass., the Church of the Messiah and Church of the Ascension, at Boston, the Art Museum for Wellesley College and the Rindge Manual Training-school at Cambridge. A director of the American Institute of Architects, he was also one of the Trustees of the Boston Museum of Fine Arts and was, toward the close of the work, supervising architect of the Suffolk County Court-house at Boston. By his fellow-architects, by his friends and by the citizens of Boston in general, he was considered a conservative, clear-headed man, whose opinions were generally worth listening to.

WHILE in Paris he acquired a remarkable skill in water-color drawing and also, fearing to confine himself too closely to the School curriculum, he took pains to study work which French architects are apt to neglect, and so acquired a knowledge of decorative painting, and other branches ot the architectural art, such as few American architects possess. It is related of him that once, while travelling, he made the acquaintance of a lady, who, finding that he was an architect, began to talk with him about some improvements that she wished to make in her house. He became interested, and the lady was so much pleased with his ideas that, later, the work in the "house," which turned out to be the renowned Château de Chenonceaux, was placed in his hands, and an apartment, the windows of which he would point out in the pictures of the château, was allotted for his residence while the alterations were going on. Although, within the last few years, he was a great sufferer from a serious rheumatic affection, he kept actively at work, until his marriage, last year, gave him an opportunity to seek health, as well as pleasure, in a short tour in Europe. He returned some months ago, apparently better, but the cares of a busy winter were too much for his strength, and, early in the summer, he was obliged to take a Southern tour. From this he derived little benefit, and, soon after his arrival at home, a distressing pleurisy came on, which finally proved fatal.

PERSONALLY, Mr. Rotch was one of the most attractive, as well as the kindest and most conscientious of men. Until attacked by the malady which in the end proved fatal, he was a model of activity and industry. Always interested in everything connected with his beloved art, he was very popular in the profession, and those who knew him best, understood best the delicacy of feeling, and absolute unselfishness, which he united with his clear-sighted energy. An opportunity for advancing the interests of architects and architecture was what pleased him most of all, but, so quiet was he in his good deeds that, even now, few people outside the University and his own family know that the Department of Architecture, which was established last year in Harvard University, and bids fair to become an important factor in professional education in this country, has been maintained, so far, at his sole expense, he having, with characteristic decision, assumed the whole of an undertaking which was originally intended to be shared between his mother, his uncle and himself, but which, by the death, last summer, of both his mother and his uncle, would have failed, if he had not generously taken on himself the whole burden. Another instance of his interest and thoughtfulness was the way in which, quite as a matter of course, he paid for the furniture and furnishings of the architectural library at the Massachusetts Institute of Technology, which is thus housed in a particularly complete and model fashion.

WE trust that our readers will allow us to draw their attention once more to the advantages which they can secure for themselves, quite as much as for us, by urging the people who thrust upon them circulars and samples, which are thrown into the rubbish-heap as soon as the door closes upon the person who brings them, to save some of the money which they spend on costly circulars, which are rarely even taken out of the wrappers by those to whom they are sent, and invest it in keeping their names, and the character of their goods, before the architectural public, by means of an advertisement, even though a small one, in the regular professional journal, which is, in every office, the standing directory

of dealers and manufacturers, which is consulted on every occasion. The advertisements in such a journal as this, not only form the directory most readily at hand, but they furnish one always corrected to date. Every architect who has had unusual problems to solve in his buildings knows that the trade directories of dealers in building materials, which are issued at uncertain intervals, are almost obsolete before they are received. The manufacture of new building appliances almost always changes hands several times before they become established and staple articles, and the attempt to trace a meritorious novelty, when an architect has occasion to use it, by means of the trade directories, is nearly hopeless, besides involving a great waste of time in writing to several addresses, before the right one is discovered. The consequence of this is that architects, particularly the busy ones, tend to prefer the stock materials, simply for the reason that they know where to get them, or what name to specify them by; and thus incur the bitter resentment of the manufacturers of new and improved goods, who accuse all architects of being unwilling to look at novelties, when, if the truth were known, it is the manufacturers themselves who put it out of the power of architects to find the novelties that they might like to use, by insisting on presenting their merits by means of circulars only, under the strange delusion that busy professional men, who receive anywhere from a dozen to a hundred circulars a day, relating to different articles, all probably more or less meritorious, peruse these documents attentively, and then file them away where they can immediately find them again when they want them. The fact is that a file of circulars, in the office of an architect of more than five years' practice, is a thing, so far as we can ascertain, unknown. Most architects have probably attempted such a thing, and, discovering, in the course of two or three years, that the file would soon occupy the entire office, have abandoned it; and the more business is done in the office, the more necessary it is to begin every morning's work by getting rid of the heap of circulars that the postman has unloaded on the counter.

OCCASIONALLY, when we mention to a manufacturer of building goods that his card, always at hand in the advertising columns of our journal, would be much more available for architects wishing to use such goods than the memory of a pile of unopened circulars, we are met by the astounding answer that he does not sell goods to the architects, any way, but to builders, and that it is, therefore, useless to advertise in an architects' periodical. This view of the subject is about as rational as it would be for a dealer in drugs to distribute his circulars among the public, avoiding the medical profession, on the ground that the doctors only wrote prescriptions, and that it was the patients, who bought and paid for the goods, that he wanted to reach, and not the people who merely told his customers what to buy. How many builders, we should like to know, would ever buy any new, or specially meritorious or beautiful building material, unless they were required to do so by the architect's specifications? Is it not evident that the builder's interest and inclination alike urge him to use nothing but the cheapest and most old-fashioned materials that the other party to the contract can be persuaded to accept; and that if he buys anything else, it is only because the architect has demanded it? Before whom, then, should the merits of improved goods be displayed, before the builder, who loathes, on principle, everything of the sort, or before the architect, whose constant effort it is to improve his work, and promote the interest of his clients, by the use of the best and most perfect materials that he knows of, and whose only way of employing such materials is to require in his specifications that the builder shall use them? We cannot see how there should be any doubt as to the answer to these questions, and, in the interest of the architect, the choice of materials and appliances which he finds offered to him, when he wants them, should be as large as possible. Particularly in these days, when the art of fireproof building is developing in this country with extraordinary rapidity, architects need all the resources that can be offered to them in the way of novelties in rolled shapes of iron and steel, new modes of constructing fireproof floors and ceilings, new methods of beam protection, improved cements, new marbles, new qualities and colors of brick and terra-cotta; and they want to know, by simply turning over a leaf in the current number of their professional journal, not by trying to hunt up circulars or calenders, who are the principal terra-cotta makers, where are the principal stone and marble quarries, who does concrete work, and whether there is any recent improvement in such work; who does copper-roofing, and whether it has occurred to any manufacturer, in these days of cheap copper, to furnish roofing-plates of low brass, or some similar alloy, which would be cheaper, harder, and better than pure copper. Certainly, if manufacturers and dealers in such materials expect to have their goods used on a large scale, they must be used through the architects, since all important building contracts are now made in accordance with some architect's specification; and, in order to have them used in this way, they must be brought to the attention of the architects who write the specifications, in such manner that, when the specifications are being written, the name of the thing desired can be ascertained, and inserted in the specification, at a moment's notice.

WE have at this moment a call for some white Portland cement, and would be very glad if any of our readers could tell us where such cement can be procured. It is made in Germany, or at least, a white Portland cement was, at one time, advertised in the German building papers; but we have never heard that any was imported, nor do we know that any is manufactured in this country. As Portland cement is made simply of lime and clay, there ought to be no difficulty in finding a clay which would burn white, and, by mixing this with white limestone, in producing a perfectly white Portland cement, having all the strength and other good qualities of the ordinary dark-colored cement. If such a material could be had, we think that there would be a large demand for it. The use of concretes, both for inside and outside work, is extending very rapidly in this country. For inside work, the disagreeable color of the Portland cements has been an insuperable objection to their use, and Keene's cement, a poor and weak material, according to modern ideas, has held its place against them; but Keene's cement is totally unfit for the paving, staircasing and protection of ironwork now required, and a thoroughly reliable cement, of a white, or very light, color, would be a most useful material.

SOME of our readers who have occasion to use aluminium, either in their private experimenting, or as a building material, for which, as it seems to us, it is destined to have many applications, may like to know how to solder it with the tools usually within an amateur's reach. As every one who has had anything to do with aluminium knows, it is considered very difficult to solder. Ordinary solder, when melted, runs over it like mercury on a glass plate, and cannot be persuaded to stick to the surface of the metal by any of the usual methods. No flux known will help the matter any, for the reason that the oxide of aluminium, which covers the surface in a thin film, is insoluble in any reagent which will not attack either the metal itself or the solder. There are plenty of recipes, in accordance with which those who are willing to pay a dollar a pound for "aluminium solder," and an extra price for "shop-rights," may have the privilege of trying to make the "solder" stick to the aluminium, but amateurs will generally find it quite sufficient to use ordinary block tin for solder, and secure its adherence to the surface of the aluminium by rubbing the metal, through the solder, which is melted upon it by a spirit-lamp or a Bunsen burner, with a wire brush, which removes the oxide so effectually that the melted tin can be spread over the aluminium almost like paint. The best brush to use is one made of bits of aluminium wire, wound with wire, or set in a handle; but steel or hard iron wire will answer. After both the surfaces to be united have been "tinned" in this way, they are held together, and heated until the tin melts. The joint is so strong that the aluminium will sometimes break before it will separate from the solder; and, as block tin is very fusible, the work is easily managed by amateurs. Ordinary plumbers' solder, which contains a large amount of lead, should not be used. Lead has a curious repulsion for aluminium, and, although solder containing it can, with difficulty, be made to attach itself, by means of the wire brush, the joint would be unreliable. If it is desired to harden the solder, silver may be added. It will dissolve readily in the melted tin, and the resulting alloy, which is harder, and somewhat less fusible, according to the proportion of silver, than the pure tin, can be spread with the wire brush with the same facility.

WROUGHT IRONWORK.[1] — II.

Well at Antwerp.

IN the seventeenth century, if we can judge by the work of Mathurin Jousse, the ironsmith's art was in full vigor. Under the sway of fashion, the old forms were abandoned, but the traditions were perpetuated and the iron, flexed to follow a new curve, nevertheless retained a light and rational appearance; the balconies, stair-railings and spiked fences, the imposts of entrance-doors (Fig. 10) offered a field which was exploited with skill; the sheet-iron was now cut into acanthus leaves instead of *feuilles d'eau*; initials and armorial bearings in relief came to be common motives. Balance and nobility of composition are the characteristics of the ironwork of the seventeenth century, as may be seen from the balcony shown in Figure 11, and from the outside grille given in Figure 12. A large number of these specimens are still to be found both in France and abroad; it would be impossible to enumerate them, but we must give a place to the grilles of the Château de Maisons (Fig. 13), now at the Louvre, which represent the triumph of ironwork at this period and which, in

Fig. 10. Grille at Zurich: Seventeenth Century.

spite of their size, yield the palm in no way to chiselled works or productions in gold and silver.

Under Louis XV, wrought-iron was twisted into distorted forms and sheet-iron curled into amazing shapes; on the other

Fig. 11. Balcony at the Louvre: Seventeenth Century.

hand, the joints became mediocre, being made with pins and bolts; processes were concealed and appearance alone was heeded. The grilles of Nancy (Fig. 14) show the highest point which this style attained; they are the most important

Fig. 14. Grille of the Place Stanislas, Nancy.

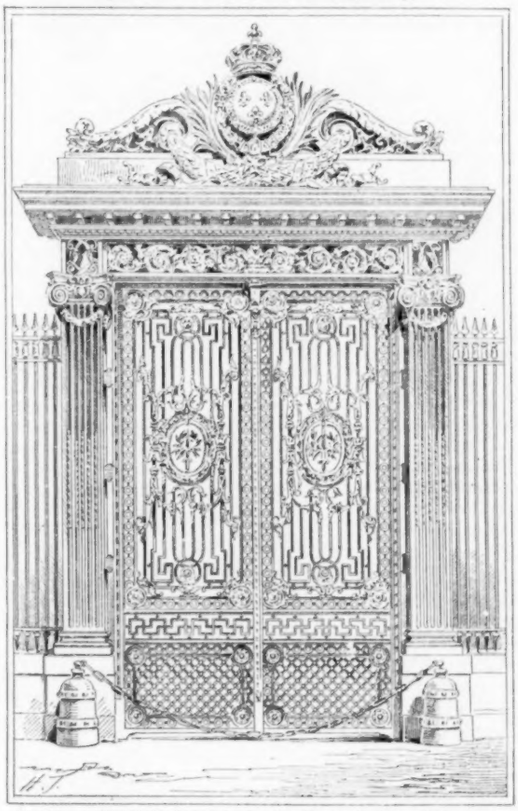

Fig. 16. Grille of the Palais de Justice, Paris: Eighteenth Century.

work of the last century; the minor productions also possess the surprises, the somewhat arch but always *spirituel* charm

[1] From the French of Henri Nodet, in Planat's *Encyclopédie de l'Architecture et de la Construction*. Continued from No. 972, page 53.

of this model. Nothing more is required in proof of this than the amusing sign of Figure 15.

With the style of Louis XVI comes a reaction: in their turn, ironsmiths sought to adopt Roman dispositions and introduce the orders into the arrangement of the grilles (Fig. 16).

The grille of the Cour du Mai at the Palais de Justice, at Paris, offers a good example of this new disposition; we will not undertake to cite other works with an arrangement of pilasters, since they are numerous; but ordinary ironwork degenerated more and more, and ironworkers, losing all imaginative power, had no other resource than the so-called Grecian ornamentation. The kings, the higher clergy and the great lords were the only ones who succeeded in obtaining anything out of the common order (Fig. 17), as for instance the balustrade of the little Trianon and the communion-rail at Saint-Germaine-l'Auxerrois.

In the seventeenth and eighteenth centuries the part played by fine ironwork gradually became less and less important; there is no longer any chiselling except on the knobs of the window-fastenings, and as for the locks, the perfection of the mechanism seems to have increased in proportion as decorative taste and skill diminished.

The introduction of cast-iron dealt the death-blow to the iron-forger's art; deftness of hand disappeared; there are, therefore, no specimens of wrought-iron work belonging to the first forty years of the present century to be cited, for there were then no artisans capable of combining and fashioning this work. But since that time, thanks to the efforts of architects of talent, thanks to a more wholesome appreciation of the productions of former times, there has been a genuine revival of the art of forging iron; a number of skilful workmen have sprung up, who are competent to execute the most delicate and complicated work for an architect who finds his patron able to measure all the advantages which wrought-iron possesses over cast-iron.

Henri Nodet.

Fig. 15. An Eighteenth-Century Sign.

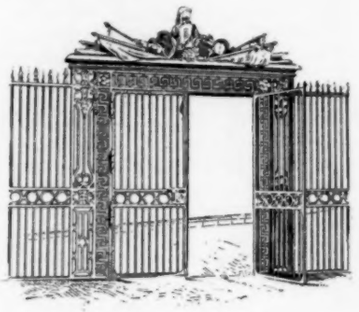

Fig. 12. Grille at Montpellier: Seventeenth Century.

Fig. 13. Grille from the Château de Maisons, in the Louvre: Seventeenth Century.

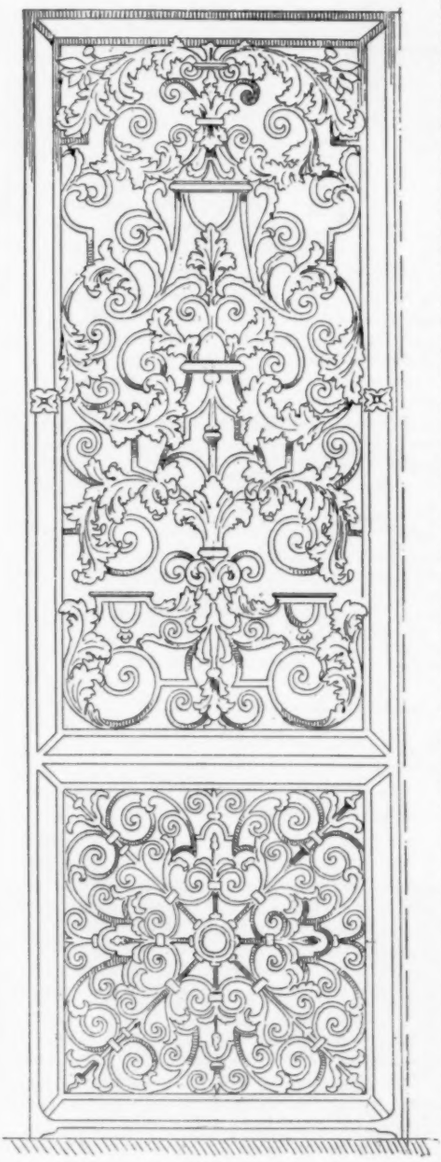

Fig. 17. Gate at Clarendon, Eng.

The Mid-day Gun of S. Angelo. — All who have been in Rome know how every day at noon a gun is fired from the castle of S. Angelo, proclaiming the mid-day hour, and how this signal is followed, a moment later, by the clash and clang of church bells ringing from every campanile, causing waves of sound to spread over the whole city. This custom dates back to 1456, when Belgrade, then the eastern rampart of Europe, was besieged by Mahomet at the head of 150,000 Turks. It was freed on August 6, 1457, by Giovanni Uniade, Prince of Transylvania, assisted by the pontifical legate, Cardinal Carvaial, and, above all, by the zeal of Giovanni da Capistrano of the Minor Franciscans, who, using a crucifix hoisted on a pole as his standard, routed an army of 40,000 combatants. The pope, Calixtus III, having rendered solemn thanks to the Almighty for the deliverance of Belgrade, ordered, as a "perpetual remembrance" of the event, that at mid-day the church bells should sound three strokes and the faithful repeat the Pater and Ave ("Hail Mary!") three times, to which he attached an indulgence of three years. Alexander VI renewed and confirmed this custom in the year of the jubilee, 1500, when Bajazette had declared war against the Venetians; the cannon being fired from S. Angelo is a recent innovation introduced by Pius IX. To a like beginning belongs the habit of ringing the church bells at one o'clock in the morning, that "darkest hour before the dawn," inviting all the faithful to repeat the De Profundis (Psalms cxxix) for the souls of the dead: for in 1656, when under the pontificate of Alexander VII, Rome was visited by a terrible pestilence; the dead were ferried across the Tiber in boats at 1 A. M. for burial in a field between the river and the Basilica of St. Paul (a black cross still stands to commemorate the melancholy fact), and the pope enacted that a bell be rung as a reminder to the faithful to recite the De Profundis on behalf of the departed souls, which custom is religiously preserved to the present day. — *Newbery House Magazine.*

THE RELATIONS OF EMPLOYER AND WORKMAN.[1]

MR. PRESIDENT AND GENTLEMEN OF THE CONVENTION. — It is a very great pleasure to meet you for the discussion of some of the phases of the labor question, especially when those phases bear upon the relation of employer and employé. A generation ago the discussion of the labor question was exceedingly restricted; it meant a discussion of the question of wages and of working time. To-day it would be impossible, almost, to outline to you in an hour the ramifications of this question; it involves every feature of industry, of the social relations of men, of temperance, and of politics; it is psychological and sociological, because these sides of the labor question comprehend the whole of it.

At your very first convention you declared that the relations of capital and labor were mutual. At that time many of you may not have been aware of the advance you had taken in such a declaration. Previous to that, we always heard in conventions and read in books that the interests of labor and capital were identical. There never was a greater fallacy. They cannot be identical any more than the interests of the purchaser and the seller can be identical, except in so far as one accommodates the other. The interest of the seller is to secure as large a profit as possible. The interest of the buyer to secure goods at as low a price as possible. There is a relation existing between the two, but the relation is reciprocal; it is not identical for both parties. Being reciprocal, what does it involve?

The Supreme Architect and Builder, in his wisdom, has managed to create all the units of the universe unlike each other; there are no two of perfect resemblance, except as to species; there are no two leaves of an oak tree exactly alike; there are no two features of men exactly alike; there is a difference, and a fundamental difference, and this exists in the relations of men as well as in the units of creation. It is only men who create and make uniform things. You can cast a million bullets without being able to discover the slightest difference between them. You can make a thousand pairs or a million pairs of shoes exactly alike. You can produce millions of tons of iron or of steel with no difference except such as chemical analysis might show; but the Creator has made variety the rule in all his works.

Now this means much in the labor question, and it involves what I like to call the psychology of it, which means that men's minds differ as much as their features, and that in order to bring any harmony into the labor question you must be able to recognize the difference in the other man's mind. While units differ, interests differ also, and this leads every association which cares anything for the elevation of its own character and every body of men which cares anything for its standard of life to understand the means and methods by which the associated units can be brought into harmonious action.

There is another feature which is involved in any discussion of the relation of employer and employé, and that is the difference in the tone and the thought of the age. Individualism, until within a generation or so, was the ruling element — the ruling philosophy. To-day it is altruism. It is that feature of human society which leads each man and each body of men to seek to do something for every other body of men or every other individual; it is that which makes our great associations for the relieving of conditions successful. It is the altruistic spirit as against the individualistic that rules to-day. We cannot get rid of the influence of the tendency if we will; it is utterly impossible to throw yourselves outside of the tendency of the age in which we live. This tendency has brought us from what the political economists call status, to the condition of contract. This is the very greatest element in the development of the labor question from a condition of status fixed under the influence and the customs of society and of industry, to one of contract, whereby each man is at liberty to make such contract with his fellowman as he chooses.

Now the only difficulty of this relative to the labor question is that the workingman is not always at liberty to make such a contract as he chooses, because he is bound by economic conditions out of whose influence he cannot reach. Therefore, the freedom of contract, which is an expression belonging to this age, is one that does not wholly mean exactly what it says. (Applause.) The employer, trained in business practices, independent in his position, must, of necessity, under the present condition of industry, suggest the terms of the contract, and the other man, who seeks to benefit by them, must come to them because he cannot reciprocate by suggesting; if he does, then comes trouble. If the two parties cannot reach the high plane of independent and free contract, then comes the strike, then come the labor difficulties, then come all the wars of industry which we have seen for the past few years, which are as great and terrific almost on one side of the water as on the other.

These questions are things which have nothing whatever to do with commercial systems; they have to do with the minds of men, and the minds of men emphasize the fact that the whole labor question is a psychological one more than it is an economical one; and when we once recognize this principal we are able to reach conclusions which shall broaden and ripen and elevate the whole question into one that is worthy of the consideration of the best men of the age, and statecraft here, in Europe — everywhere where civilization has gained any strong foothold — is trying to solve the problems which grow out of industry. The emperor of Germany, the English government, the emperor of Austria, the kings of Italy and of Belgium, and the government of the United States — all these powers are to-day seeking through their legislative and executive functions some solution of the difficulties which beset industry. And what will be the outcome? It is far beyond human ken; but the steps which will immediately proceed from these deliberations everywhere can be seen and are being felt. They cannot reach the socialistic side, because socialism means just what some of the solutions of the labor question mean: death to industry. They do mean, however, that the altruistic principle of the day shall be felt as a living force, and in so far as this principle is socialistic you need not fear it. It is nothing that can come politically; it can only come when each man recognizes the rights of every other man and is willing to meet him at least halfway in the adjustment of troubles. (Applause.)

To meet this solution or to help to adjust some of these difficulties, some of the leaders of the land, our very best men morally, broad Christian-minded men, those who are patriotic, and are looking for opportunities in every direction and who are anxious to contribute something to the solution of labor difficulties, are advocating what they are pleased to call "compulsory arbitration." Let us not quarrel with the misnomer: if it is arbitration, it cannot be compulsory; but yet this compulsory arbitration is an expression of their system, and so we will adopt it this afternoon. I have taken some pains to formulate a few illustrations of what compulsory arbitration is. I will give them to you this afternoon, for those of you who have not thought out the problem of compulsory arbitration, for those of you who have thought, maybe, that in this system or method there lies a positive solution of troubles, and that when your men strike or when you lock them out there can be a court by which your differences can be settled independently of action of your own. This compulsory system aims to accomplish that; it aims to accomplish something moral and economical by force, which means just what State socialism means — death to industry; and it is with a view of showing you this side of it, before I touch on that truer arbitration to which your association has been committed, that I give them to you, bearing in mind always that it is a feeling of my own that the time is coming, and speedily too, when either party to a strike or to a lockout will be ashamed of his action in seeking or allowing the trouble to arise. (Applause.)

In the initiative, let it be supposed that A represents the employer. He issues an order to his employés that wages will be reduced ten per cent on a certain day. For the sake of easy calculation, let it be supposed that the wages are $2 per day on the average in A's works. His proposed reduction then, if carried out, would leave wages at $1.80 per day. The workmen resist this proposition and insist that they will work no longer for him unless the $2 per day can be retained. But A issues his order, and the workmen strike. A then appeals to the court of arbitration for his locality, and a summons is issued, under the seal of the court, citing the workmen to appear and answer as to why the demands of the order of A should not be obeyed. If they appear and make answer, all well and good. If they do not, then they will be subject to judgment by default; or, in some cases, the proper officers of the court may bring them bodily into court to answer the allegations of A. But they are brought into court. A presents his case, the employés present theirs, the court makes a decision and upholds A, deciding that he is justified in cutting down the wages of his workmen ten per cent, reducing them from $2 per day to $1.80.

Two results may follow this action. The men, under the decision of the court, acquiesce and return to work at $1.80 per day, or they refuse to return to work at that price. Then comes the execution of the judgment of the court if the workmen will not obey that judgment. It is levied on them personally or on their property by proper process and by the proper officers of the court. They may be arrested and brought into the factory. If the sheriff or the single officer authorized to serve the execution cannot do it alone, he can summon the *posse comitatus*. If the posse be insufficient, he can appeal to the governor. The order of the court must be enforced, and all the power of the government brought to enforce it. This means compulsion, and at the point of the bayonet. The men must accede to the decision of the court of arbitration and work for $1.80 per day, whether they will or not.

Let us instance the reverse. The court decides against A, and the judgment is that he shall pay $2 per day. He declines to do so, or he does not obey the judgment of the court. Execution then follows and is served by the proper officer. If he cannot serve it alone, he summons the *posse comitatus*. If the posse be insufficient, the officer appeals to the governor of the State, and A must continue his works, and with wages at $2 per day, under the persuading influence of loaded rifles, or the execution may be levied on his property. He must obey, under the rule of compulsory arbitration, the order of the court. In other words, he must pay $2 per day, when it may be the market cannot be supplied with goods on any such basis. He cannot close his works without disobeying the order of the court; he cannot pay the $2 per day without loss of his property. Compulsory arbitration then works confiscation. In either of these instances law has stepped in to fix arbitrarily, and to

[1] Address by Hon. Carroll D. Wright, United States Commissioner of the Department of Labor, and read at the eighth Annual Convention of the National Association of Builders, held at Boston, Mass., and printed in the Proceedings of the Convention.

enforce its fixing by all the civil and military power of the State, either the price at which a man shall sell his labor, under penalties, or the price at which the producer shall sell his goods, under penalties. But the plan does not provide that the consumer shall purchase goods at the fixed price, under penalties, which should be done if there is any logic in compulsory arbitration.

What further may occur? The employer submits, it may be, to the judgment of the court, continues the operation of his works, and pays the $2 per day as ordered by law, although he knows perfectly well that he cannot sell his goods if he disobeys the law. He, therefore, has two methods to which he can resort: first, adulterate his goods to such an extent that he recoups a loss of ten per cent in wages; second, make a "combine" with all other manufacturers of like goods to control prices, in order that whenever a court of arbitration decides that certain wages shall be paid there will be no competition, the trust or "combine" regulating the price in accordance with the decrees of the court, and, therefore, caring nothing what the decrees may be, because the consumer must bear the expense of the decree. This means the highest, even prohibitive rates of duty. Or another economic condition may be the result of the decree of the court. A submits to the decision and continues to pay $2 per day, and tries to sell his goods in the old way. This allows his neighbor to enter into dangerous competition with him until such time as he is summoned into court and is compelled to abide by the same rules, it thus taking but little time to force the whole industry involved into the trust organization. If the illustration be reversed in all cases to apply to men who strike for higher pay, thus becoming the plaintiff in the action and summoning the manufacturer, the manufacturer must appear or lose the case by default, or, if he does appear, be subject to the decision of the court. It may be a rise of wages would follow, when all the results just indicated would be met.

It does not require much strength of the imagination to see that as each industry becomes involved in the economic results of compulsory arbitration, combination grows more and more severe in all its terms. Every great industry would be forced into the trust through the action of the sheriff, or the *posse comitatus* under him, or the military force of the State enforcing the decision of its courts, which it is bound to do. The trust represents consolidation, and in the minds of leading socialists is but the stepping-stone to State socialism. If the trust be honestly and faithfully administered in the interests of the public — and this must be the result, or the trust must go under — the State socialist asks: why not create a greater trust and have the Government itself the trustee? This is not the place to argue such a question; but the question may be asked here, whether the advocates of compulsory arbitration are ready to accept the full and logical conclusion of their system by forcing, at the point of the bayonet, all industries under State control, and thereby establish by military force the rule of State socialism.

Would it not be a simpler thing to pass a law regulating the price of every species of goods and putting a penalty upon the consumer that he should not buy except at those prices, and so reach the same result by a quicker process than through compulsory arbitration? and that result is the death of industry and the wiping out of the whole social fabric, which I tell you, gentlemen, depends almost entirely upon the success of industry. If compulsory arbitration does this, is there any reason why it should find any lodgment in the minds of business men or of the people they employ? It is the destruction of that freedom of contract of which I have told you; it is the destruction of all responsibility, moral or otherwise, on the part of the individual man; it is not only a step, but an enormous leap, backward in the whole progress of this age, and it means a system far worse than the feudal system, far worse even than the slave system of the South as it existed prior to the War. There can be no peace, there can be no harmony, there can be no progress industrially or socially, if you resort to such a practice as that which I have so briefly illustrated.

What, then, can you do? What must be done in order to relieve the world partially — for it cannot be done wholly so long as men exist — of the existing antagonism between the two forces which are essential to production, labor and capital? These two terms should always be used impersonally. A difficulty which has existed in the discussion of the labor question lies in the fact that they have been too often used personally, that capital means a man and that labor means another man subject to the first. They should not be used in this sense, but they should be used economically and ethically; they are two forces, each essential to the production of property, each having its functions, each having its rights and privileges; they are relations which cannot be entirely separated, but all the different relations should be fully recognized, and the only principle by which you can carry out the harmonizing of the different views on the subject of production lies through the organization of both forces on such a plan that each shall recognize the rights and the dignity and the privileges of the other. (Applause.)

It is to this that I come as really the main feature of my remarks this afternoon, and which I wish most to impress upon you. It requires good men. Mr. President and gentlemen, it requires good action upon the highest moral plane, to recognize all the rights of another man. It requires that we should bring into our religion more Godlike men and a less manlike God. It requires that we should bring into our practical and daily work some of the essential principles of the broadest religion; I am not speaking of dogmatic creeds or of theological differences, but of religion, which means in this sense the great moral principles which shall recognize the elevation of the whole people and not simply the temporary advantage of any class of people.

I have said that there is no solution of these questions. There is no one feature which can be adopted which will solve all the troubles and remove all the difficulties which beset industry. These difficulties are to my mind to-day more the result of intelligence than of ignorance. We have a great and intelligent body of mechanics in manufacturing countries, made more intelligent through the very features of modern industry. They have been taught that they are free men; they have been taught that they are sovereigns; they have been given political influence; they are the chief factors in society, whether we recognize them as such or not; they have been taught through the schools the principles that surround government; they are interested in the success of government; they are interested in the success of every great feature instituted by men for the benefit of all men. Now with this intelligence on their part they have been studying economic conditions and ethical relations, crudely it may be, but, nevertheless, they have been studying them. If you will study the great difficulties of the labor troubles of the past few years, you will find that, notwithstanding the personal antagonisms which have grown out of them and the real fighting spirit which has been developed by them, there is an intelligence and a comprehension going along, besides the other features, that is really marvelous; and we find that when we remove some of the objectionable features of labor strikes and lockouts there is a basis of justice in the two sides involved and in the public mind which cannot be eradicated. This justice recognizes the power and privilege of every man to seek for himself the best that can be obtained through his environment, to seek the very best which his opportunity gives him to seek.

You have established, or endeavored to establish, a system of arbitration. It is not that which I have recited to you, but it is that system which forms a part of your organic law; and in this, it seems to me, you have been exceedingly wise to so construct your constitution and to seek to have the constitutions of subordinate bodies so constructed as to recognize the principle of industrial arbitration; and you seek, furthermore, if I understand your programme correctly, to induce the organizations of mechanics that are not in line with you to adopt as a part of their organic law the same great principle. You have not yet succeeded, I am told, and it is not very unreasonable to see why you have not succeeded. It is not very marvelous that you have not been able to carry into effect the principles which you have adopted, and the reason lies in the difference in men's minds and the lack of recognition on the part of all your forces of that very altruistic spirit of which I have spoken. But with arbitration established by which you can have perpetual boards, not meeting too often, this difficulty will be largely overcome. The difficulty which has existed in the Old World and in this country in carrying out true arbitration, the ethical method of settling difficulties, has arisen in this very direction. When a strike occurs, there is more or less heat on both sides, and when heat occurs there is a fight ahead; and if you establish your court under a heated condition you are not adopting the wisest method of judging the differences. If the two elements, labor and capital, in your great industry, can have a court in existence to which they can submit their difficulties, a court of cool-headed, calm and judicious men appointed beforehand, you have accomplished in the very start more than half the work.

You remember the old Greek proverb that the beginning is always half the task. When you have put your hand to the plough, when you have started a great institution, you have accomplished half the object which you sought in the first days to secure. So, if you have a judiciously-selected board of arbitration, a board which shall comprehend all the elements of the business to be submitted to it, not an outside board of people who know nothing whatever of your line of business, but a board constituted of members on both sides, then you have accomplished half the work toward securing success. If, then, you submit your difficulties to this board, you will have secured something which arbitration aims at securing. You have taken a long step in advance. You have recognized the rights of other men, and the moment one man recognizes the rights of another, that man is a better man than he was before; he has developed a moral side of which he was not aware.

In the old time the fight of life was for existence, and if I did not kill you, you killed me. Then came the next fight; it was a fight for substance, and if I could not get your substance, you took mine. Those old conditions have passed and are gone, and these very conditions of modern thought, of men recognizing each the rights of the other, are the principles which underlie the whole business of arbitration. Every society which has established a court of arbitration or a board, as it is better to call it, upon conditions of equal rights has been more or less successful.

Greater success will come in the future than has been experienced in the past. You can refer now to this settlement of the great Lehigh trouble and of the great coal strike in England. These are past troubles which have come to a peaceful and satisfactory conclusion through the offices of a judicious board of arbitration. There is something which I like which precedes arbitration, and that is conciliation, where neither party resorts to any board, but each meets the other in that friendly spirit which should always exist; and, sometimes, when conciliation along the lines of economic

principles cannot be reached, a little shrewd diplomacy without the loss of principles will accomplish the whole thing and avert a strike.

I remember a few years ago, in the city of Lynn, in this State, where I once lived, there occurred a strike on the part of the lasters, which is a pretty influential body, as you know, those of you who come from Lynn, which is a shoe town. An employer there had secured the services of a laster who was not a member of the lasters' association, and the next morning a committee of lasters waited upon the employer and said to him: "You must discharge this non-union man." "Oh, all right," he said, "I have no objections." "And you must put in his place the man you previously discharged." "Very well," he said, "I will do that." Now the man that he had previously discharged was a union man and was a very poor laster; and so he put him at work again the next morning just as the committee requested, but he put a skilful laster alongside of him, a union man, whose sole business was to unlast the shoes as fast as the union man lasted them; and the result was that before long the whole trouble had disappeared and the reinstated laster left the works of his own accord and left the town. A little bit of shrewdness like that averted a long and disastrous strike.

And another instance which came under my own observation was where a manufacturer of shoes in this city — he was a maker of custom shoes who conducted a very high-toned establishment and he was an Englishman — secured one day the services of a foreman who was an Irishman. The journeymen in the shop were nearly all Englishmen as well as the proprietor, and the next morning they waited on the proprietor and said: "We don't propose to work under this foreman." "Why, isn't he a good foreman? Doesn't he know his business?" "Yes, sir; but he is an Irishman and we don't propose to work under him and you must discharge him." "Oh, very well," he said; "you would work under me if I was an Irishman and the proprietor of the establishment, wouldn't you?" "Yes, sir." "Very well; I will fix this thing." "All right, sir." So the next morning he took the foreman into partnership with him and that ended the whole business. (Laughter.) But had he been obstinate, had he been as unreasonable as his journeymen, there would have been a strike in his shop which would have been as disastrous to him as to them. A little bit of diplomacy, so long as principle is not sacrificed, will save many a strike.

I remember another case in Lawrence where, a few years ago, the employés in a great textile factory struck, and enough common-sense to put on your little finger end would have saved the whole business and have prevented three months of idleness on the part of fifteen hundred operatives, but that sense did not come until each side was exhausted and sick of the whole business.

Now I know the liberality of the great industry which you gentlemen represent. There has been no greater advance along the lines of the labor problem in its many ramifications than has been achieved by your own industry. You have been the first to grant a shorter day of work. You have been the first to add to the leisure time of your people; you have been the first, perhaps reluctantly, but certainly the first, to grant this demanded privilege, and while you have had strikes and while, as I know perfectly well, the cost of construction of a building has not been reduced always by that reduction of time, but increased in some cases and perhaps all, nevertheless, you have added something to the dignity of the men you employ and you have added something to your own dignity and to your appreciation of the wants of others.

All these great movements have an ethical power. There has been much antagonism against a certain great street railway corporation of this city during the past four or five years and yet that corporation has accomplished that which, if I could accomplish it alone and personally for the workers of this country, I would be willing to lay down my life instantly for the results gained; and that privilege was one single half-hour added to the workingman's day without any increased cost by the use of electricity on our street railways, by which the workingman can come into this city from the suburbs in one-half or less time than he could have come before, and he has thus had that half-hour added to his day without detracting anything from his economic force.

If there is anything to be gained by concessions without any forfeiture of principle, if there is any benefit to be secured to the individual by elevating him morally and intellectually, it is the duty of industry everywhere to do it; it is the duty of industry to see to it that the man who works for his living, the man who works for daily wages, is a freeborn man, who can make his contracts as freely and who can suggest the terms of contract to be considered as freely, as can the man on the other side. (Applause.) This is the ultimate work of the present generation. What the work of the next generation will be, growing out of arbitration, it is hard to say. There are various other systems which, bear in mind, gentlemen, are only ameliorative and not conclusive, and if, out of all these and the concessions of men on both sides, there can grow up a new system of industry by which the iron law of wages can be removed, by which society and industry can each bear its burden and bear it cheerfully, then there will come an age when industry will be more prosperous than ever, when each man will secure a comfort in this life that he has not been yet able to secure, when there will be freedom from harsh economic laws, freedom from entanglements, freedom from antagonisms, and freedom from industrial wars. Until that time there will be these wars, there will be these crises and industrial antagonisms, and all that we or any other body of business men or any body of teachers can do is to help bring out the better system, the better understanding, the better age of freedom of contract, until we reverse the old rule which was from status to contract and step back again from contract to a higher status. This should be the aim of every body of business men. This is the acme, industrially speaking, of the whole altruistic principle of the age, and to this I feel sure you will dedicate yourselves anew and endeavor by all the influence in your power to bring about not the millennium, but better conditions.

THE LATE RAILROAD STRIKES. — THE FAILURE OF THE ATTEMPT TO CALL OUT THE BUILDING TRADE. — HOW THE COURT OF HONOR BUILDINGS BURNED. — PROFITS ACCRUING TO THE WORLD'S FAIR FROM ITS SIDE-SHOWS. — ANOTHER EXAMPLE OF CHICAGO'S METHOD OF BUILDING.

ALL through the month of July the one topic that has seemed to overshadow all others, here as well as all over the country, has naturally been the strikes, the interest of the general public centering around the struggle connected with Pullman and the railroads. There has seemed to exist absolutely no other interest, and business as well as any special enterprise connected with the city has been practically at a standstill. Even if a topic was being brought up before the public, which at any other time would have created lively interest, it has been dispatched by a short column in the newspapers, and has hardly aroused comment at all in general conversation. If things looked quiet in architects' offices last spring, the fall prospect is still more discouraging. Most excellent draughtsmen are thankful to take work at one-half their usual wages. There has been, as is of course known, much talk of a general strike among the building-trades. The papers came out with loud headings, such as "Mighty Struggle On," "All Labor May Stop," "Knights of Labor Eager," etc., etc., and indeed committees from one hundred trades-unions met and discussed the advisability of a general sympathetic tie-up. Among this hundred and twenty-six, unions were represented that, should the strike have become general, would have materially effected what building interest is yet alive. These unions were the Carpenters' Council, the Painters' District Council, Iron-Moulders' Council, Building-Trades' Council, Steam-Fitters', Stone-Cutters', Gas-fitters', Mosaic Workers', Tin and Sheet-Iron Workers', Cornice-Workers', Hod-Carriers', Plasterers', Hoisting Engineers', Junior Plumbers', Journeymen Plumbers', Gravel Roofers', Architectural Iron-Workers', Bridge and Structural Iron-Workers', Bricklayers', Tile-layers', Steam-fitters', Helpers,' Electric Workers', Carpenters' Council No. 1, Hardwood Finishers' No. 1, Cabinet Makers', Metal Trades' Council.

That such a sympathetic strike could ever have been contemplated seemed the wildest folly, and public sympathy in general seemed extended to the workmen, who were finding in the unions a harder and more grinding taskmaster than the wildest fanatic could have pictured for them in capital. Last winter was a hard winter for the laborer, and this summer was looked upon as a time when, it was to be hoped, more work would be forthcoming, to prepare for another winter's siege. Right or wrong, sympathizing or totally at variance with the views held by the strikers, the situation is a pitiful and discouraging one. The general calling off of all labor-unions was, as is known, given up, not in a flat, square-footed way, but as a gradual and hardly perceptible retreat, till suddenly it became apparent that no strike was in progress. The painters were actually the only ones who stopped work, and they only for a day. As these men were without personal grievance, and only struck through sympathy for the Pullman men, it was rather a ridiculous feature of the performance that during this one day that they were away from their work the men who applied for their places were Pullman men. Pullman men were also the ones who took the places of the striking painters last spring during their tie-up. Such action does not lead one to believe that the workmen are heartily in accord always with the orders issued by the head men of their unions.

One event of this month, which at any other time might have created a good deal of excitement, was the total destruction by fire of nearly all the World's Fair buildings. The origin of the fire is unknown, except that in a general way it is put down to incendiarism, and curiously enough there has been absolutely no discussion of the matter. The fire was discovered by the ubiquitous small boy, and it is highly probable it was the work of some of the lawless characters who during this time of anarchy have flocked to our city. Whatever may have been the cause, with the exception of the northern part, the beautiful White City now lies a blackened heap of ruins, only the gilded figure of the Republic, stretching forth her arms over the scene of desolation, stands as if typical of the fact that in the midst of assailing evils, which even to the most optimistic give ample cause for alarm, the Republic shall stand unscathed and unharmed. The fire first attacked the Terminal Station, being discovered at about 6 P. M., as above stated, by some small boys who

at first attempted to stamp it out. It was not long, however, before the fire got inside of the building, and the fate of the place was sealed. We have had an exceptionally dry, hot summer, and the buildings burned like tinder. A large part of the city fire-department was called out, but in view of the highly inflammable material of the structures and the high wind blowing at the time, it could do very little or nothing to save them. Remembering the disaster of the Cold-storage Warehouse, the men took no risks in mounting to the roofs and higher portions of the buildings, though they had several narrow escapes from simply being hemmed in by the flames, so rapid was the progress of the fire. Before the last column had toppled over from the Terminal Station, the flames had attacked the dome of the Administration Building, shooting up through the opening at the top with a rush and roar like the escaping flames and vapors from a volcano. It could not have been much more than fifteen minutes before the entire building was one mass of flames, darting high into the air and illuminating the country for miles around. With a deafening crash the dome fell and the fire leaped to the Electrical Building, while it almost simultaneously broke forth in the Mines and Mining Building. People may have thought they had seen fires, especially those Chicago people whose memories date back to a little over twenty years ago, but never before has there been a more gorgeous fiery spectacle than this of July 5, at Jackson Park. As last summer, in its completeness, the Fair stood one of the grandest and most beautiful sights of modern times, so also in its destruction it was equally impressive. The final end of the Mines and Mining Building came in the shape of a tremendous explosion which blew out the east wall, and by the time this structure had fallen in, the flying brands had set fire to the Manufactures Building. It took about an hour for the fire to do its work on this huge roof, and the great iron girders were twisted and warped out of all recognizable shape. While this structure was on fire, the flames were doing their work on the Agricultural Building and Machinery Hall. The south ends of the Government and Transportation Buildings were scorched and burned, so that the Horticultural Hall and the Field Museum are the only large structures which stand unharmed. The loss, eighty thousand dollars, falls on the Columbian Exposition Salvage Company. Of the seven large buildings mentioned, the destruction is entire, there being absolutely no salvage. The iron beams and girders are either twisted into shapeless masses, or melted down into equally shapeless heaps, and thus has vanished from the face of the earth the most beautiful group of buildings of modern times, and because of all the disturbances of the present month, the fact has hardly been commented on. Of course, it was only a matter of a short time how long they should stand at best, and this idea has tempered any regret there might be felt over their disappearance.

One rather interesting report from the World's Fair is that showing the amount of money received by the Exposition Company from the different concessions. The whole amount of money received was $3,543,512. The largest amount paid by any one concession was $309,927, paid by the Wellington Catering Company, while the smallest was one cent for some sort of cap ribbons. Of the Midway Plaisance shows, the Street in Cairo turned in the largest amount, $148,491 being the percentage received from that. The Ferris Wheel and Hagenback's Menagerie stand next in the list of paying investments, as they turned over to the Exposition Company $127,975 and $125,529, respectively. The German Village and the Moorish Palace are the only other concessions of the Midway which netted over a hundred thousand to the Company, and it is rather surprising to note that while the percentage from the German Village was $114,927, Old Vienna, where an entrance fee was charged, only turned over some ninety-six odd thousand.

Greenland's Icy Mountains in the shape of the Esquimaux Village placed in the treasury some thirty-eight thousands of dollars, and in attractiveness beat Afric's Sunny Fountain, in the form of the Dahomey Village, just about ten thousand. The Street in Constantinople stepped in with another thirty-eight thousand dollars and that most flimsy of all the concessions, the Beauty Show, did nearly as well. The Java Village brought in over thirty-three thousand, while the rival Irish Villages show a difference of over fifteen thousand in the amount of money handed over, the Aberdeen producing twenty thousand for the Company, while the Hart only netted it five thousand. In the slot-machines the charms of music were entirely eclipsed by the Stoelucrck's delicious little squares of chocolate, as the phonographs brought in $1,189, while the chocolate turned over $4,037. The electric launches proved a source of income to the amount of $112,370, while the wheel-chairs only netted about seventy-five thousand to the Exposition. The Intermural Railway turned over the goodly sum of $136,421, which shows that the Company probably lost nothing by the less grasping policy which it inaugurated after the early part of the season. This proves true in the majority of cases where the concessionaires were not too eager for the ever-present quarter.

One curious example of the method used in the construction of large buildings in Chicago is to be seen on the corner of State and Washington Streets, where a twelve or fourteen story building is being erected over the first story prepared for it several years ago, and in which, at present, part of one of our largest dry-goods stores is doing business, without any inconvenience to either customers or employers. A stout balcony is built at the second story and this not only protects the sidewalk and entrances, but also serves to hold building-material. Not only is the present structure being thus erected, but the old one, a four or five storied building, was torn down, with the same minimum of inconvenience to those around. It is really remarkable how well such work is managed. The new building is probably the last one to be erected from plans in which the late John W. Root had any share.

Another large building about to be erected is a Temple of Music. It is reported the structure will be ten stories high, in the style of the Italian Renaissance, with the material of terra-cotta and Roman brick. The first story is to be arranged for store purposes, while the second and third stories will be devoted to a recital-hall. Above this, through the tenth story, the rooms will be arranged for music studios.

THE PLANNING OF HOSPITALS.[1]

ONE cannot speak properly of the planning of hospitals without including much that does not strictly belong within the province of the student of Architecture. You will pardon me, therefore, if I open these remarks with statements and explanations bearing upon the subject which are derived from such medical authorities in hospital science as are well known to fame in this connection.

What follows is not said to undervalue the work which has been done by the medical specialists, but to awaken thought in a new direction for the benefit of our own profession, to whom the business of designing all kinds of buildings legitimately belongs.

One of the objects of this lecture is to suggest to the young minds before me the possibility of an improvement in hospital building, which would spring up if the architect should so fit himself by early and careful training for the special work of designing and constructing hospitals. Granted that a hospital is a machine, if you will, it seems reasonable that it may be and ought to be an agreeable looking machine, and that there is nothing in Nature or Art to prevent the architect from understanding and producing it.

Whether working with a specialist, or as a specialist, it becomes the architect, who must remain the authorized interpreter to the workmen of all drawings and specifications, to know the value of and the reason for every line and every word that they contain. Furthermore, he is often called upon to be accountable, and sometimes the accounting head, in carrying on the works. Over and above all these points, he has the artist's responsibility in the case, to give the building or group of buildings whatever of artistic character may be possible, or under the most unfavorable circumstances, to see that the result shall not develop as a blot or an eye-sore.

The history of hospitals up to recent times is rather mythical; Egypt, India, Greece and Rome are all said to have had something of the kind. While the subject is one of great interest, there is too much of uncertainty and mere conjecture surrounding it, to yield much profit to the general student. You will find about all there is to be found, and more than is valuable, in Burdett's book.[2]

HOSPITAL.

The English word "hospital," has been and still is, used in a double sense, *viz.*:—"As a place of medical treatment, and also as a retreat for the poor, the infirm, etc.—*Encyclopedia Brittanica.*" Burdett in his great book uses two terms; the title is "Hospitals and Asylums of the World."

The late Dr. Kirkbride deviated from the English nomenclature, with regard to establishments for the care of the insane: these in England are usually called "asylums." Following Dr. Kirkbride, the term "Hospital for the Insane" is generally used in this country to indicate that the institution is for the purpose of treatment of insanity as a disease with a view to its cure, and not as a mere shelter for its inmates.

What I have now in mind to speak of more particularly is the hospital for the treatment of the sick and wounded.

Originally the word hospital meant, as the word asylum now means, a place of shelter for the poor and helpless only; now it has the included meaning of treatment and restoration; the inmate of an asylum may or may not be a patient, the inmate of a hospital proper is always a patient, and the rich as well as the poor avail themselves of the benefits of hospital treatment. There is good reason to believe that in many cases, especially those of a surgical character, a well-organized hospital possesses great advantages over the best equipped private house. All difficult and dangerous operations can be there performed under conditions more favorable than at home. So that the hospital manager, the doctor and the architect must work together to improve this life-saving and life-lengthening apparatus, and the best equipped man for the work ought to be the architect.

HOTEL DIEU.

It is only within comparatively recent years, that scientific progress has been made in the organization of hospital management and the construction of hospital buildings. France appears to have taken the lead, but England and America are now well abreast, if not ahead. The old Hôtel Dieu at times during the last century held five thousand patients. As many as six people were laid in one bed. The buildings occupied only a little over three English

[1] A lecture delivered before the Architectural Department of the University of Pennsylvania, by Addison Hutton, architect.

[2] "*Hospitals and Asylums of the World*," by H. C. Burdett, London: J. & A. Churchill.

acres, so that each inmate of this "House of God," was allotted only about thirty square feet of the earth's surface whereon to live and breathe. You will better appreciate the extent of this crowding, when told that each inhabitant of the City of Paris has 430 square feet, and of the City of London about double this area, or over 800 square feet. There is some satisfaction in knowing that the present Hôtel Dieu gives each patient 311 square feet, although this is a very short allowance according to the present advanced idea of the proper ratio.

The earliest record of hospital building in England states that in the eleventh century two were founded by the Archbishop of Canterbury, Lanfranc by name.

About fifty important hospitals were founded in England, Ireland and Scotland during the eighteenth century, which shows a wonderful movement in the intentions of benevolence. The earliest hospital in North America is the Hôtel du Precieux Sang, built in 1638, and the next in order of time, the Pennsylvania Hospital in Philadelphia, the east wing of which was built in 1755.

Before the Revolution of 1789 the French had begun to devise special plans, but that terrible event intervened, and no tangible improvement grew out of their thought and invention, until the Lariboisiere was begun in the reign of Louis Phillipe. Singularly enough, the Revolution of 1848 interfered with the building of that, and it was not completed until the year 1854.

THE EPISCOPAL HOSPITAL.

When the Episcopal Hospital in Philadelphia was designed in 1859, the Lariboisiere was considered by its projectors as the best existing model to be followed. I may say it was not strictly followed; but in all essential features it is probably the best hospital building which was erected at or before that period. Its benefits came into full play in our Civil War.

THE JOHNS HOPKINS.

The plans of Johns Hopkins Hospital in Baltimore, recently published by Dr. Billings, illustrate more fully than any other yet built, the thorough study of the subject which is being given in modern times. It is in effect from the medical point of view, an ideal hospital. No thought, time, trouble or expense was spared to make it so; to carry into practice the most advanced ideas of hospital design and construction. I shall refer to this frequently as it is a convenient landmark and object lesson. There can be no objection to doing so, as the plans by their publication have become common property. If a copy of Dr. Billing's book is not already in your library, it ought to be placed there.

In the Johns Hopkins Hospital, beyond the Administration and Pay Wards, it is difficult to discover the touch of the artist. Architecture as an art seems to have been subordinated to the demands of hospital science, and any thought of architectural beauty in the treatment of the external appearance of the common wards, particularly ignored. I wish to suggest the point that there are no compelling requisites of size, proportion or detail in hospital plans, that may not be softened and rounded by artistic care, so as to give token of regard for beauty.

Passing by the collateral needs, all of which enter into the planning of hospitals, such as the Departments for Administration, for Clinical teaching, for Training of Nurses, for Out-Patient service, for Isolating purposes, for the Pathological work, for Cooking and Washing, our present business will be with the arrangement and construction of a proper hospital ward, with its inseparable adjuncts.

TERMS.

A room furnished with a bed or beds to receive patients is called a Ward; for many reasons it has been found satisfactory within economic limits to place from ten to thirty patients in one room and this room is called the Main Ward, and if the hospital contains more than one, they are numbered 1, 2, 3, etc. They are also spoken of by the attending physicians and nurses as Medical Ward, Surgical Ward, etc., according to the use. But it is not necessary to make this distinction in connection with planning. The needs of a Surgical Ward are the most exacting; if we plan properly for that, we shall cover the ground for all requirements, except for cases where special isolation is required. In the Massachusetts General the Bradlee Ward is designed on isolating principles, a special ward for abdominal and cerebral cases.

But I wish to confine your attention just now to that unit of a hospital which is, or should be in emergency, a complete hospital in itself and is called, for convenience, a pavilion. This consists of two parts, the main ward and the head-house, as well separated from each other as the nature of their relations will permit. Under certain regulations it is now conceded that another ward and head-house may be superimposed, making a two-story pavilion. There has been much discussion as to the advantages and disadvantages of two-story pavilions; there was a period when the authorities told us that the one-story only could be the proper thing. The Johns Hopkins built some of each and it may be supposed is now making a record of comparative results.

AREA.

We will consider now the Main Ward. Its floor-area should have a minimum of one hundred square feet per bed, and it is believed that no ward ought to have over thirty beds. If we fix the clear height at twelve feet, which is probably the minimum that should be allowed, we have twelve hundred cubic feet per patient. This is a fair standard of practice in the climate of Philadelphia, provided reasonable attention is given to the means of winter ventilation. The glass surface for the windows should not vary much from twenty square feet per patient, although this may be considerably decreased in more northern latitudes and on stormy exposures.

FORM.

The usual form of the ward is an oblong parallelogram of about twenty-five feet in width; this is enough when eight feet length per bed is allowed. Some have been made of greater width; the Johns Hopkins wards are twenty-eight feet wide, with seven feet wall length per bed. The wards in the Episcopal Hospital are, I believe, fully thirty feet wide in the clear, but this width in a long ward is now considered excessive.

Some of the modern English hospitals have very pretty circular wards with ventilating stacks in the middle, and it is a matter of some surprise that octagonal wards, such as one built in the Johns Hopkins, have not been more usually adopted. In the Massachusetts General, built in or about 1820, the wards are nearly equal sided with a great chimney-stack in the middle. A modification of this, except that the sides are extended and the corners are cut away to form an irregular octagon, may be seen in the new wards of the Pennsylvania Hospital.

These wider wards with the central chimney, whether square, round, or octagonal, present some marked advantages in the matter of ventilation, and are especially desirable when there is a superimposed ward. Later on, I hope to recur to this.

SITE AND ORIENTATION.

In choosing a hospital site, the quality of the soil, the facility of water-supply and drainage should be carefully attended to. But an important care and duty of the architect is to regulate the orientation of the wards. These, invariably, ought to be placed on the south side of the connecting corridor, and when oblong, should have the axis as nearly on the meridian as possible.

Thus every day of the year in which the sun shines, at least three walls of a rectangular ward will be bathed in sunshine. This is good for the patients, good for the building, good for warmth, and good for ventilation.

SPACING OF WARDS.

With the orientation just described, the interval between wards may be smaller than in any other. Thus, if a one-story ward be fourteen feet from the first floor to the eaves, the space between wards may be twenty-eight feet; if there is a superimposed ward, this interval should be much greater.

HEAD-HOUSE.

As the ward is the essential part of the hospital, it has claimed our attention thus far. But food, clothing, water and drainage are important and must be available, in a hospital as elsewhere. A section of the pavilion is isolated as nearly as possible from the ward by the cross-corridor, through which, as often and as long as possible, fresh outside air is allowed to pass. On the north side of the corridor, supposing the orientation to be regular, is placed the Head-House, containing the numerous adjuncts which go to make each pavilion a complete hospital in itself.

Here are placed the stairs, the service-room through which is served all food, (which comes — in a large hospital — from a remote kitchen, by way of the basement-corridor), the clothing-room, the linen-room, the nurses' duty room, the bath-room, the water-closets, and, if practicable, one or more special rooms or wards for single beds.

VENTILATION.

All the water fixtures are arranged for special artificial ventilation separate from the Ward ventilation. Keep fairly in mind that the governing thought, difficult to put into execution in our climate, is primarily to isolate the ward, by means of air currents, from the head-house, and each pavilion from its neighbors as much as possible; and that inside of the head-house (or outside of it, as you may sometimes find it necessary), the drainage fixtures must be further isolated by a well-formed air-passage, flushed as frequently and as much as possible with fresh external air. Another help in natural ventilation is the peculiar window which has a transom at two feet from the top, the sash of which is hinged at bottom to open inward to admit fresh air at the top, which is thus admitted and impelled in mild weather into the room toward the ceiling, without danger of too much draught on the patient.

You may find under some conditions that it will be necessary to control the ventilation, especially in winter, by fan pressure, but this should not happen in a new enterprise, where the conditions of selection of site and orientation can be controlled or regulated. But you will be called sometimes to enlarge, alter or extend existing hospitals, and you will then be glad to draw on all resources within your reach.

ASPIRATING FLUE.

It will generally be found best to construct a large single ventilating flue for each ward with openings into it at floor and ceiling. This is rendered active by a coil of pipe heated with steam all the

year round. Such a flue cannot be placed within the lines of the long narrow ward, but may be placed in the head-house or lobby as in the Johns Hopkins. It involves long ducts both under and over the ward, and places a serious difficulty in the way of a second-story ward. Owing to the great length of the horizontal ducts and branches, it would seem that the effective draught would differ much between the near and distant parts of the ward.

In the wider ward having a central stack such as the octagonal wards of the Johns Hopkins, the square wards of the Massachusetts General, and the wide Memorial Wards of the Pennsylvania, the central ventilating-stack will undoubtedly perform more thorough work in a more economical manner. The steam pipes and coils are made accessible by means of a ladder from the basement to the attic.

A separate flue of the same description, in which steam, water and drain-pipes are placed, ventilates the water-closets; the other parts of the head-house are ventilated by flues, collected into a separate common head, having steam coils like the rest.

WARMING.

Volumes have been written on warming in connection with the subject of ventilation. Merchants, manufacturers, doctors, lawyers, and engineers, from time to time have burdened the world with new books. It is nearly safe to say that nobody in a Northern climate has ever been thoroughly and continuously satisfied with his warming-apparatus. So I will not startle you by saying that such a hospital or such a house has a thoroughly satisfactory apparatus. What is to be brought forth hereafter in electrical invention, no one can safely predict; nothing yet has appeared to supersede the appliances through which steam for fifty or sixty years past has been found clumsily effective.

At the Johns Hopkins both steam and hot-water appliances are put in. This has been done to solve experimentally the question as to which is better. In the other hospitals within my knowledge, steam alone is applied.

Almost invariably, cast-iron radiators, which now largely take the place of the old pipe coils, are placed in the basement, at the bottom of the hot-air flues. Fresh air brought from the outside at least six feet from the ground passes over these radiators, and becoming warmed is discharged through metal-lined flues into the ward or wards above. The area of these flues is reckoned for this latitude at about 100 square inches per patient, and the area for ventilation, by the means already referred to, should not be materially different. An important feature in any method of warming is the management of the admitted air. Whether the winter weather be cold or mild, the inflow of air to the ward should be kept as nearly as possible to the same volume.

This is done by a mixing damper, so placed that by a single movement, the flow of hot air is diminished, the flow of cold air increased; the two volumes thus thrown together, mixed and tempered, are delivered into the ward. By means of an actuating chain or rod, this movement of the damper is performed by the nurse without leaving the ward.

With this tempering arrangement for inflow, and proper openings for outflow at floor and ceiling,— those at floor are always open, those at ceiling controlled by registers, so that the air may be changed and the temperature promptly lowered on occasion; extraordinary care is not required to keep the ward at the proper temperature.

I ought to mention that the inlets for warm air are better placed under the windows: the windows are the coldest points in the room; and as the greatest space between beds is opposite the windows, the danger of draughts on the beds is thus minimized.

CONSTRUCTION.

In speaking of the construction of the hospital, I will refer only to such features as are especially important in this class of building. Of course, hospital construction in most particulars may be, and usually is, the same as in other buildings of the better class.

The foundations should be laid with stone and cement, and there should be a damp-proof course of asphaltum or slate at the ground line. In some soils the foundations should be drained with tiles; in those of sand or gravel this is not necessary.

So far as is ascertained, there is no better material for walls than brick. All interior partition-walls ought to be brick. The weather-barriers should be formed of two nine-inch walls with two-inch air-space, well bonded at all jambs and corners. An excellent alternative is an eighteen-inch solid wall with hollow lining of terra-cotta, whereon the wall-plaster is laid. Either of these devices will insure dryness of the internal wall-surface.

A principle to be followed as carefully as possible in hospital building is to leave as few cavities in the construction as consistent with the conditions of integrity and endurance.

Every surface should be solid and smooth as practicable, and thus easily and freely cleansed and kept clean.

When floors are constructed in the usual manner, the intervals between joists may be filled with mineral wool. This helps to deaden sound, leaves no harbor for rodents, or any other offensive thing. Still better, where the appropriation of funds will permit it, the floor should have bones of iron or steel filled-in with bricks. The nailings for the surface-floor will thus rest on a bed of iron and burnt clay; again the mineral wool comes into play between the nailings or sleepers. The surface-floors must be hard wood; nothing is better than the Southern yellow or pitch pine, which, when cut and dressed to show the edge-grain, makes a handsome and most serviceable floor. A good, tight, smooth, well-finished floor is most important; parrafine and soluble-glass are recommended as coatings. The joining to the wall is best with a neat wooden cove, the usual high wooden base-skirting being omitted. In fact, only such inside wood-work as is absolutely necessary is recommended in the best hospital construction. The window-jambs and heads may be rounded or chamfered in plaster, and the window-sills rubbed slate.

The floors and parts of the walls of the water-rooms are lined with pottery tiles, and all angles give place to curves, concave or convex.

It is best that stairs shall have iron construction, and if slate-treads come within the appropriation, they are to be preferred to wood.

The plastering of the walls and ceilings should have great care bestowed upon it. The surface should be left with what is known as hard-finish, composed of lime, sand, and *much labor*. Where lath are commonly needed, such as on ceilings, etc., stiffened wire-netting should be substituted.

At all internal points, and in all materials, whether stone, brick, wood, pottery, plaster or metal, constant attention should be given to the avoidance of open joints, sharp corners, quirks and creases. The exclusion from the interior of the ward of all architectural decoration may be a part of the reason why in recent times there has been a disposition to exclude the architect himself.

If I have seemed to take up much time in dwelling on what might be called the peculiarities of hospital building, I assure you I have done so with the general purpose of *outlining* the subject, as it were, by simply *touching* on *some* of the details in a way that may attract your attention, with the thought that some of you might in the future take up the designing of hospitals as a specialty. Be assured that the subject is a large one; thousands of volumes have been written upon it; new discoveries in medical and surgical science are modifying the older theories, so that one needs to keep abreast with daily progress. For those who have a certain combination of mechanical with artistic genius, it would certainly prove exceedingly interesting, and possibly profitable in fame and money.

The increase of material wealth of the people of this country, the inevitable poverty and suffering which travel on foot alongside of the chariot of wealth, are the two factors which will more and more conduce to the founding of institutions for the charitable care of the sick and suffering. Then as science prospers and proves what it is capable of, in healing and minimizing pain, the rich and well-to-do will patronize such establishments in which they can be better relieved and cured than in their own homes, and will add liberally to the means of supporting them.

I am the more moved to speak as I do, because some of the medical advisers have strongly intimated their disregard for architectural beauty, as if it were not worth an effort. I plead that the skill of the architect can modify the appearance of almost anything having walls, windows and roof, so as to render it a thing inoffensive, and with perhaps a slight addition to the expense, a thing of beauty.

M. Tollet, a French writer on hospitals, thinks that the ogival or Gothic form of architecture was adopted in the Middle Ages, as much for sanitary as for architectural reasons. Whether he be correct or not (it appears to be a conjecture only), this writer sees no objection to its use, except that it does not seem to lend itself so readily to the rigid conditions imposed by modern sanitary science.

But there is one point worth noting in regard to this. Doctors, for a wonder, do *not* differ in their recommendations for top ventilation; in one-story wards this easily becomes what is termed ridge ventilation. In all wards it is very desirable to slope the ceiling upwards from the sides to the middle. So that we have in the ceiling of any ward, especially of the one-story ward, a hint of Gothic which might well be followed in the external architecture of the building.

If one were requested to design a hospital group in the Gothic style, he should not seriously resist the pressure to do so; it is possible to do it without trespassing the code of hospital science so far as I know it. One should be allowed and should take much freedom in such an instance; he would be glad, of course, if the state of the treasury would admit of stone as a material for external walls.

But if you ask what type of architecture appears best suited or most adaptable to beautifying the hospital, I am obliged to answer, a modified Renaissance or some derivative of Classic; that is, so far as detail is concerned. There can scarcely be such a thing as perfectly regular or symmetrical handling of the voids and solids, as is necessary to give the best developed results in Renaissance.

You are obliged to submit to certain irregularities of plans and arrangement of openings, because the wants of the interior are dominant, and interfere with the symmetry required in the perfection of the Renaissance.

The combination in the same view of the wards,— which are large, with the rooms of the head-house, which are small in plan, but for working reasons must be high in story, adds to the difficulty of designing a building to show the regular and symmetrical beauties of Renaissance work.

The solution of the question as to what is best, can perhaps be nearly reached by recognizing the difficulty fairly, and approaching it in the most direct way.

In a hospital group there are some parts, notably the Administration Building and the Pay Wards, the requirements of which do not suffer by compromise with the demands of external symmetry. These and certain portions of the wards and head-houses may have regularity of design. (It seems unfortunate that the most satisfactory story heights for sick-wards, are not sufficient to permit mezzanines in the head-houses.) For the rest you perforate the walls at such points as you must, and rely on horizontal courses, and minor details of the cornices and windows for such effects as will make harmony with the richer parts of the design.

It does not seem good judgment to leave the walls of the wards and head-houses so bare and devoid of architectural interest as those of the Johns Hopkins are, especially as they front and are seen from a beautiful park, and every ward is visible from its neighbor. It seems to me that the patients and nurses should have something more interesting to look at than naked walls, which might be, for any external sign that they give, those of a warehouse, and chimneys which might be those of a chemical laboratory.

But I must close. I feel that I have only hinted at the thoughts and things which enter into this very interesting sort of building. But if I have awakened in some of you the desire to know more of the subject, I have accomplished all that could be expected within the allotted hour.

I will name three books, (I might name ten or twenty; but naming the three, you will have a guide to all the others), in which you can find the book knowledge upon which you can start the structure of your equipment for hospital work: — Burdett's "*Hospitals and Asylums of the World*," "*Encyclopedia Brittanica*," "*The Johns Hopkins Hospital.*"

The Middle Ages were the Cathedral building centuries. The nineteenth century is the era of railroads and high buildings. The twentieth century, with the growing tendency of the strong to help the weak and unfortunate, coupled with the ability to help them, may prove to be the age of scientific healing, and more universal, enlightened, benevolent and charitable work than has ever before been seen in the world. Along with this will undoubtedly grow the love of all beautiful things in nature and art.

I can think of no nobler work for you to engage in, those of you who may feel drawn in this direction, than that of preparing to take a part in bringing about this great consummation. If any of you do, I trust it will be with high aims, and with the feeling that this is something better than a railroad building, shall I say better than the Crusades or Cathedral building, or any other demonstration of enthusiastic building, that ever took place for the good of man or the glory of God?

Every work that is done, in the spirit that is now abroad, for the amelioration and relief of human pain, is a step towards the Millennium. The hospital, which was once a pest-house and, in a measure, a curse, although founded on the best instinct of humanity, will in the course of the future become without doubt an unmitigated blessing, a veritable Hôtel Dieu, a "house or hostelry of God."

ILLUSTRATIONS

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

FIREPLACE IN HOUSE OF H. L. EINSTEIN, ESQ., 44 WEST 53D ST., NEW YORK, N. Y. MR. MANLY L. CUTTER, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print, issued with the International and Imperial Editions only.]

HOUSE OF FLETCHER S. HINES, ESQ., INDIANAPOLIS, IND. MR. HERBERT W. FOLTZ, ARCHITECT, INDIANAPOLIS, IND.

THE contract price for this house was about $8,500. The lower story is finished in quartered-oak and the second story in white-wood, painted in white and gold. The house is lighted by electricity, the dynamo being driven by a gas-engine supplied from a private gas-well. Water is supplied by a Rider engine.

ALTERATIONS AND ADDITIONS TO HOUSE OF GEORGE D. SELDEN, ESQ., ERIE, PA. MESSRS. SWAN & FALKNER, ARCHITECTS, BUFFALO, N. Y.

[Additional Illustrations in the International Edition.]

PROPOSED PUBLIC MARKETS AT PATAN, BARODA STATE. MR. F. W. STEVENS, C. I. E., F. R. I. B. A., ARCHITECT, BOMBAY.

WE copy from *Indian Engineering* an illustration of the proposed Markets to be erected at Patan for His Highness the Gaekwar of Baroda. These Markets will have an octagonal hall, 60 feet in diameter, in the centre, and will have wings running at right angles to each other, each 50 feet in width. This arrangement will afford ample ventilation to all parts of the building, and will enable spacious entrances to be made between the wings to give easy access to the several parts of the building as well as the large entrances at the front of each wing. There will be 148 stalls provided in the Markets, which will be used for the sale of fruit, flowers, vegetables and sundry goods. The stalls will be similar in design to those of the Crawford Markets at Bombay, but with improvements. Mr. Stevens's principal object in adopting a central octagonal hall with wings at right angles to each other, is to enable the authorities to erect each wing at different times, should the State not be able to complete the building at one time. The spaces between each wing are intended to be laid out with grass-plots, beds and shrubs which will add to the general effect of the building. The style of architecture adopted is a free treatment of Hindu and is well adapted for this building, considering it will be one of the features of a purely Hindu town. The walls will be of local bricks neatly pointed with cement, and the domes, dressings, cornices, mouldings, arches, etc., will be of white Dhrangadra stone. The roof of the central hall will be supported by ornamental wrought-iron brackets supported on cast-iron columns and walls. On the brackets teak purlins will be fixed, carrying the battens and Mangalore tiles. The wing roofs will have wrought-iron trusses, supporting teak purlins, battens and Mangalore tiles. The floors will be of concrete covered with stone slabs or Indian Patent stone. The estimated cost of the building is Rs. 150,000. His Highness the Gaekwar has approved of the designs, and, we hope, they will soon be carried out, as the building will not only be an ornament to the town, but will be of great use to the inhabitants — markets being needed for many years past.

VILLA CASTEL, PARISIS, FRANCE. M. FIVAZ, ARCHITECT.

THIS plate is copied from *La Construction Moderne.*

LINCOLNSHIRE CRICKET PAVILION. MR. THOMAS MUIRHEAD, ARCHITECT.

THIS plate is copied from the *British Architect.*

COMPETITIVE DESIGN FOR DINING-HALL: CHRIST'S HOSPITAL NEW BOARDING-SCHOOL, HORSHAM, SUSSEX, ENG. MR. E. T. COLLCUTT, ARCHITECT.

THIS plate is copied from the *Building News.*

FREE PUBLIC LIBRARY, EDINBURGH, SCOTLAND. MR. G. WASHINGTON BROWNE, ARCHITECT.

DETAIL OF THE ENTRANCE TO THE SAME.

COMMUNICATIONS

[*The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.*]

A QUESTION OF COMMISSION.

NEW YORK, N. Y., July 25, 1894.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs, — Would you kindly oblige me by answering the questions as stated below, or by sending me a copy of your paper in which the questions are answered or the subject discussed? An architect prepares plans (¼″ scale) and specifications for a building; the estimates obtained are above proposed cost and the project is given up. The architect receives his fee of 2½% on proposed cost of building — for general drawings, and specifications, and sketches. He learns that his design is being used. How will his claim, that the payment of his fee of 2½% on proposed cost of building does not entitle his client to the design, stand before the law, and also, has an architect the right to use a design for which he has received a fee of 2½% for another building? These questions seem to elicit so many differences of opinion among architects that I should like to know the law on the subject.

MANHATTAN.

[THE first question is entirely a jury matter. The law appears to be such that, if a person engages an architect, without saying anything about limiting his service, he is presumed to have engaged him for complete service in regard to the building contemplated, and has no right to terminate his employment without reason. The fact that the architect's plans cannot be carried out within the limit of cost described to him, or, at least, within a reasonable approximation to that limit, is, however, in law a sufficient cause for discharging the architect. The points which would be submitted to the jury, and on which the result of the controversy must obviously depend, would be: (1) Was there any express or implied stipulation, in the engagement of the architect, that his service might be terminated at the owner's pleasure? (2) Was it found impracticable to carry out the architect's plans within the limit of cost to which he was instructed to

conform, or within what the judge would rule to be a sufficient approximation? (3) Did the architect, either expressly or by implication, agree or consent to receive the two and one-half per cent fee in full satisfaction of all claims? If the jury answers any of these questions in the affirmative, the architect can recover nothing more. If, however, the jury finds a negative answer to all of them, a fourth question would come up, namely: Has the owner waived the circumstance on which he based his discharge of the architect, by going on and carrying out the plans notwithstanding the fact that it will cost more to do so than he intended? This would be for the judge to answer, and, if he considered that such a waiver was implied, the architect, provided always that he had never consented to the termination of his engagement, or accepted his two and one half per cent in full of all demands, could probably recover damages, in addition to what he had received, to the extent of two and one-half per cent more, less what the jury concluded, from the testimony of expert witnesses, would be his actual outlay for completing the service he was engaged for. If the architect's complaint alleged fraud on the part of his client, and the jury found that the latter had only pretended to be dissatisfied with the excessive cost of executing the plans, in order to settle with the architect at a discount, really intending all the time to go on with the building, even a receipt in full from the architect, thus fraudulently obtained, would probably be set aside by the court, and his claim for damages admitted. It is obvious, however, that the answers to all these questions would, in any particular case, depend on evidence as to conversations, personal relations, and so on, so that it would be almost impossible to predict the result. If the question referred to an actual occurrence, we should make the comment that, if an architect makes plans which cost more to carry out than a reasonable approximation to the limit of cost, which was at the beginning plainly set before him, his client is not bound to pay him anything for his work; so that a payment of two and one-half per cent, taken in connection with the other facts stated, indicates a disposition on the part of the owner to deal fairly with the architect, which should be, and undoubtedly would be, taken into account in judging between them.

In regard to the second question, we think that there is no legal principle to prevent an architect from using drawings, for making which he had already received a fee from one client, for a second building. He does not, under ordinary circumstances, convey to his client any copyright control over the design, and, as he might do so, if it were wanted, the fact that a client did not ask for it would be a waiver of a claim to it. In practice, it would be ruinous to an architect's reputation to put off stale designs on his clients, so that the question is hardly likely to arise. — Eds. American Architect.]

WANTED: RADIATORS.

Boston, Mass., August 10, 1894.

To the Editors of the American Architect: —

Dear Sirs, — Some months ago, I tried, through the columns of your paper, to find the address of the manufacturer of a certain type of direct-indirect radiator, of which I had formed a favorable opinion from a circular which I had happened to glance over on its way to the waste-basket. None of your readers seemed to be able to furnish the information wanted, and the building for which I made the inquiry was fitted-up with something else. Some months later, the manufacturer himself called upon me, and, on my expressing my disappointment at not having been able to get his radiators for this previous occasion, said that he was so busy that he would not have been able to furnish them anyway. Now, I want more radiators of the same sort, for another large building, but am as much in the dark as ever as to where to apply for them. If this modest manufacturer is in a position to furnish them, and will make his address known to me; or if anyone who knows of any manufacturer of such goods will put me on the track of them, in time to call for them in the specifications now under way, I shall be very much obliged.

Very truly yours, Inquirer.

EXHIBITIONS

Boston, Mass. — *Annual Summer Loan Exhibition of Paintings; also, New Accessions to the Print Department:* at the Museum of Fine Arts.

New York, N. Y. — *Twenty-sixth Annual Spring Exhibition:* at the Metropolitan Museum of Art, opened May 8.

Group Exhibition by American Painters — William M. Chase, J. Alden Weir, Childe Hassam and others: at the Galleries of the American Fine Arts Society, 215 West 57th Street.

NOTES AND CLIPPINGS

Layard's Deeds and Character. — "Sir Henry Layard," remarks the London *Saturday Review*, "might be quoted as an example of the truth of Gordon's saying that England has been made by her adventurers. Using the word in the honorable, old sense, and not with the ugly, invidious meaning which has come to attach to it, he was an adventurer — that is to say, a man who picked out a piece of work to be done of his own motion, and by his own efforts, with means which he either supplied himself or obtained by personal influence over others. It is true that he had a Parliamentary and a diplomatic career, but he would have had neither if he had not first earned distinction by his own efforts as an explorer. Something of the adventurous disposition remained with him throughout. It prompted him to witness the battle of the Alma from the maintop of the Agamemnon, and was perhaps not without its influence on him during his tenure of the Embassy at Constantinople. Sir H. Layard will, however, not be remembered either because he was for a few years a member of the House of Commons, or because of his services as Ambassador at Constantinople at a time of crisis. Between the incorrigible faction of Mr. Gladstone and the equally incorrigible corrupt folly of the Pashas, which he may not have estimated at their true, stupid worthlessness, and could in no case control, the policy he endeavored to help Lord Beaconsfield to carry out had no chance of success. In the earlier part of his life, Sir Henry Layard had fortunately had opportunities of doing work which neither English office-seekers nor Turkish Pashas could spoil. We have observed, with what it is polite to call surprise, that the leading Gladstonian paper is of opinion that the honorary degree conferred on Sir H. Layard in 1848, by the University of Oxford, was given for some mysterious reason. It may appear mysterious to the curiously-constituted Gladstonian mind that the University did not foresee that Sir Henry would fall out with Mr. Gladstone thirty years later, or even did not consider the possibility of such an event as supplying a sufficient reason for declining to confer a well-merited honor. To most people it will seem self-evident that the honorary degree of 1848 was very rightly given for the voluntary services to learning of 1845. At that period the exploration of the sources of the history of the East was a comparatively new, and very important, branch of scholarship. In the one very interesting and valuable part of it, England would not have taken any adequate part but for the volunteer enterprise of Layard. The Manchester School, and the prevalence of the feeling which dictated the well-known explosion, 'Damn the Fine Arts!' would have combined to prevent the English Government from giving the help which was freely rendered to French scholars by their own country. During a visit to Mosul, Layard had seen that exploration of the mound of Nimrod, already begun by M. Botta, would yield valuable results. He obtained the means of excavation by the help of Sir Stratford Canning, and the result of his excavations was to put English scholarship beyond the risk of having to envy the success of French research in that field. Whatever could be done by official neglect to waste the gains due to his labors was not omitted. The great winged figures and the highly-interesting bas-reliefs were ill-packed and ill-carried. Many of the smaller objects were, as it would seem, almost deliberately subjected to pilfering, and some of the best of them accordingly disappeared. But the energy of Sir Henry Layard bore down even official inertia, and the sculptures from the Assyrian palaces finally took their proper place in the British Museum. Sir Henry wrote very well, as is known by those who have read his account of his explorations at Nineveh, and the more recently-published narrative of his early travels in Armenia and Kurdistan. The facts that he was the son of an Indian civil-servant, was half a Spaniard by blood, and an Indian by education, must be allowed for as fitting him for the kind of work he had to do, by giving him an understanding of foreign and Oriental peoples which a more purely-bred Englishman might not have had. But the energy to use these advantages was all his own."

Chicago's "Cliff-dwellers." — Eighty-nine North-shore cliff-dwellers were arrested in their romantic houses along the dump at Huron Street the other night. When the World's Fair closed last October, a great mass of human driftwood, gathered from all climes, was thrown upon the city. Hundreds of men who had sold red-hots, "yer ofishul guide," and stained eye-glasses along Stony Island Avenue found themselves without employment and no means to return to their former homes. During the winter, the corridors of the city-hall, soup-kitchens, and police-stations sheltered them. When the rigor of winter was over, some of them left the city and some secured employment. Nearly two hundred of them did neither. They drifted to the north shore and built for themselves habitations. The lake at this point was being filled and there was no end to the variety or quantity of material they had at hand for building purposes. The lake itself was not unkind to them, and wreckage, sawed lumber, and St. Joe fruit-crates and chicken-coops were now and then washed ashore at their feet. These made the framework of the dwellings in the cliffs. The bank or cliff is in some places thirty feet high, receding from the shore in convenient terraces. In constructing a cliff-home, an excavation would be made in the cliff about ten feet square. A frame would be put in with especial care to have the roof water-proof. Worn-out felt roofing, strips of sheet-iron and tin would be spread on the roof-frame and a thick layer of soil placed over all. The cliff-house was then finished, excepting decorations. Old carpets, wall-paper, picture-frames, and matting discarded from more pretentious dwellings farther north on the shore filled this want. The house proper was only used for sleeping purposes. The cooking was done out in front in tomato cans. Two men generally lived together. A feeling of comradeship had sprung up in the settlement; there was little quarrelling, and a few of the most thickly populated terraces had even been dignified with names of streets. A few of the men worked at what they could find to do during the day, and most of them got their food by begging and fishing. Their begging was one of the reasons that caused Inspector Schaack to undertake the raid. — *Chicago Herald.*

Roman Discoveries in Algeria. — Fresh discoveries have just been made in Algeria, in the old Roman city of Thamugadis, now Timgad. In excavating the capitol, many important fragments of a colossal statue, at least twenty-eight feet high, have been found. Traces of painting have been discovered on three other statues recently unearthed. — *N. Y. Evening Post.*

Exhaustion of the White-Pine Supply. — The *Northwestern Lumberman*, which a few years ago took the ground that the supply of white pine in the northwestern States was inexhaustible, now shows by what it believes to be authentic figures that the shortage in one district alone for the current year will be 700,000,000 feet, and information points to general shortage in all the northwestern pine territory.

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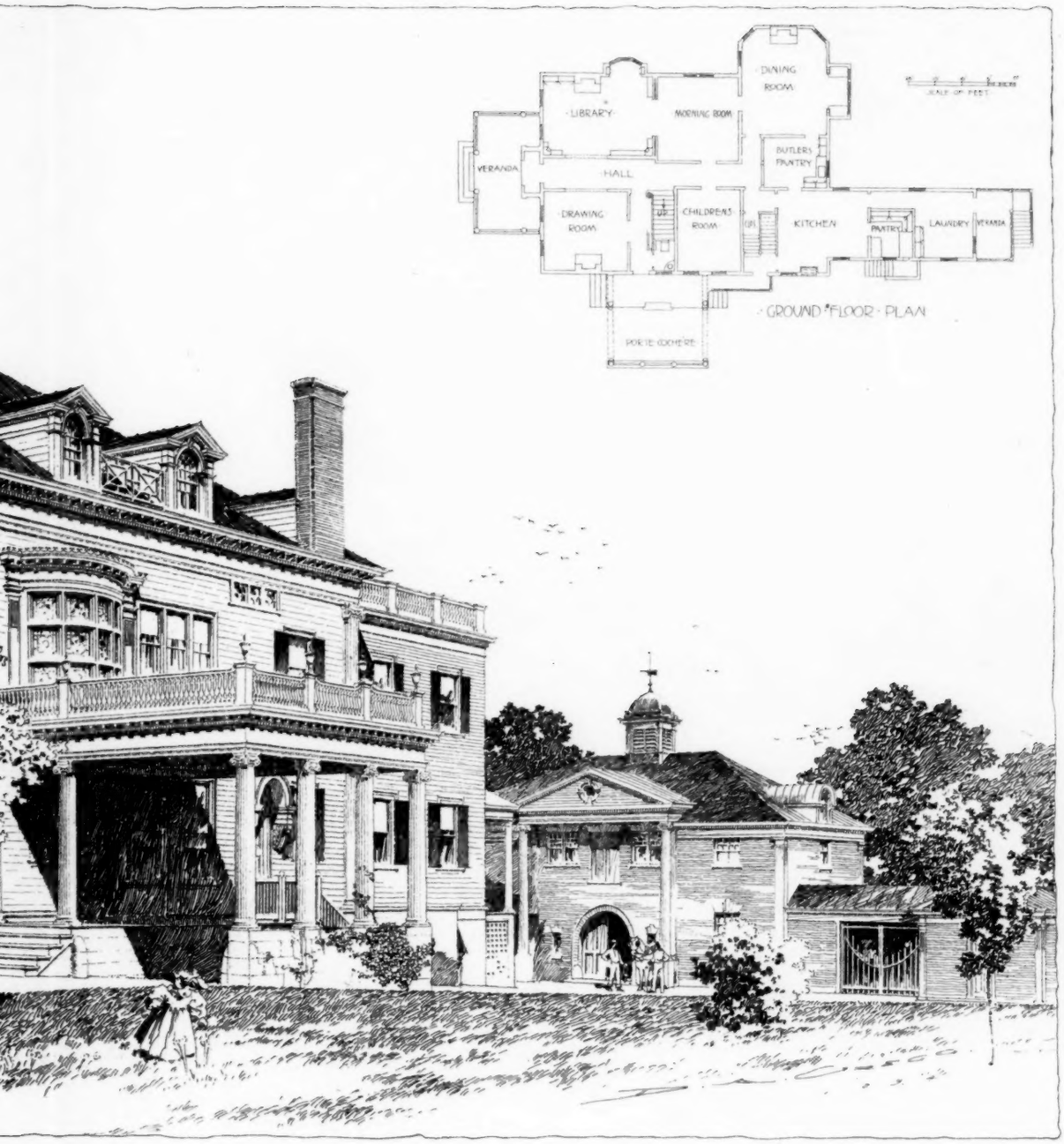

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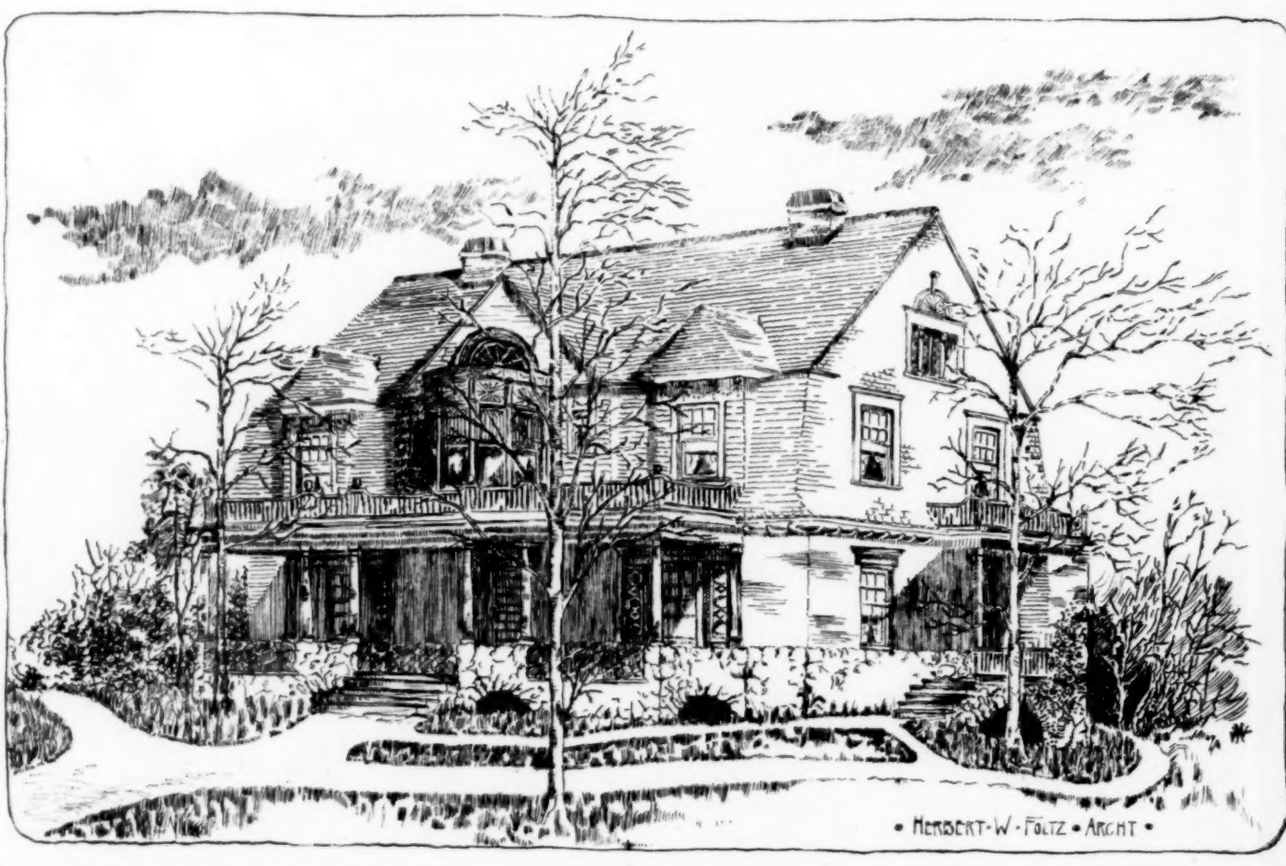

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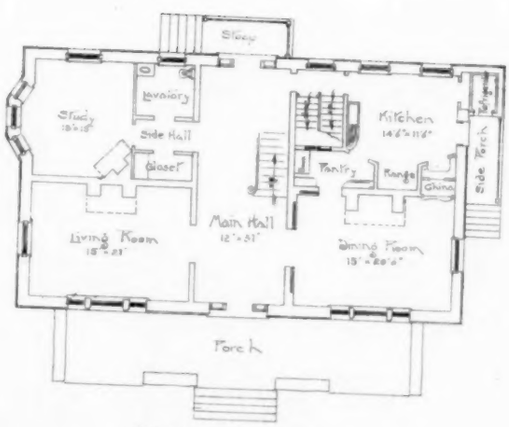
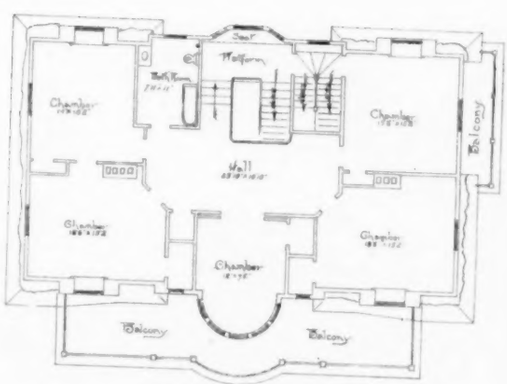


First Floor Plan



Second Floor Plan

Herbert W. Foltz
Architect

Country House for Mr. Fletcher Hines
South Elevation

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