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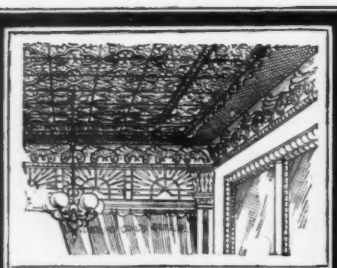

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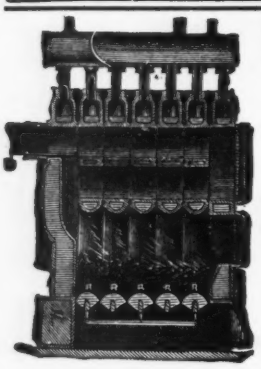

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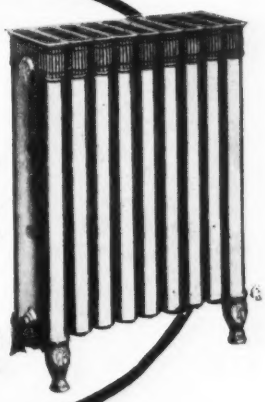

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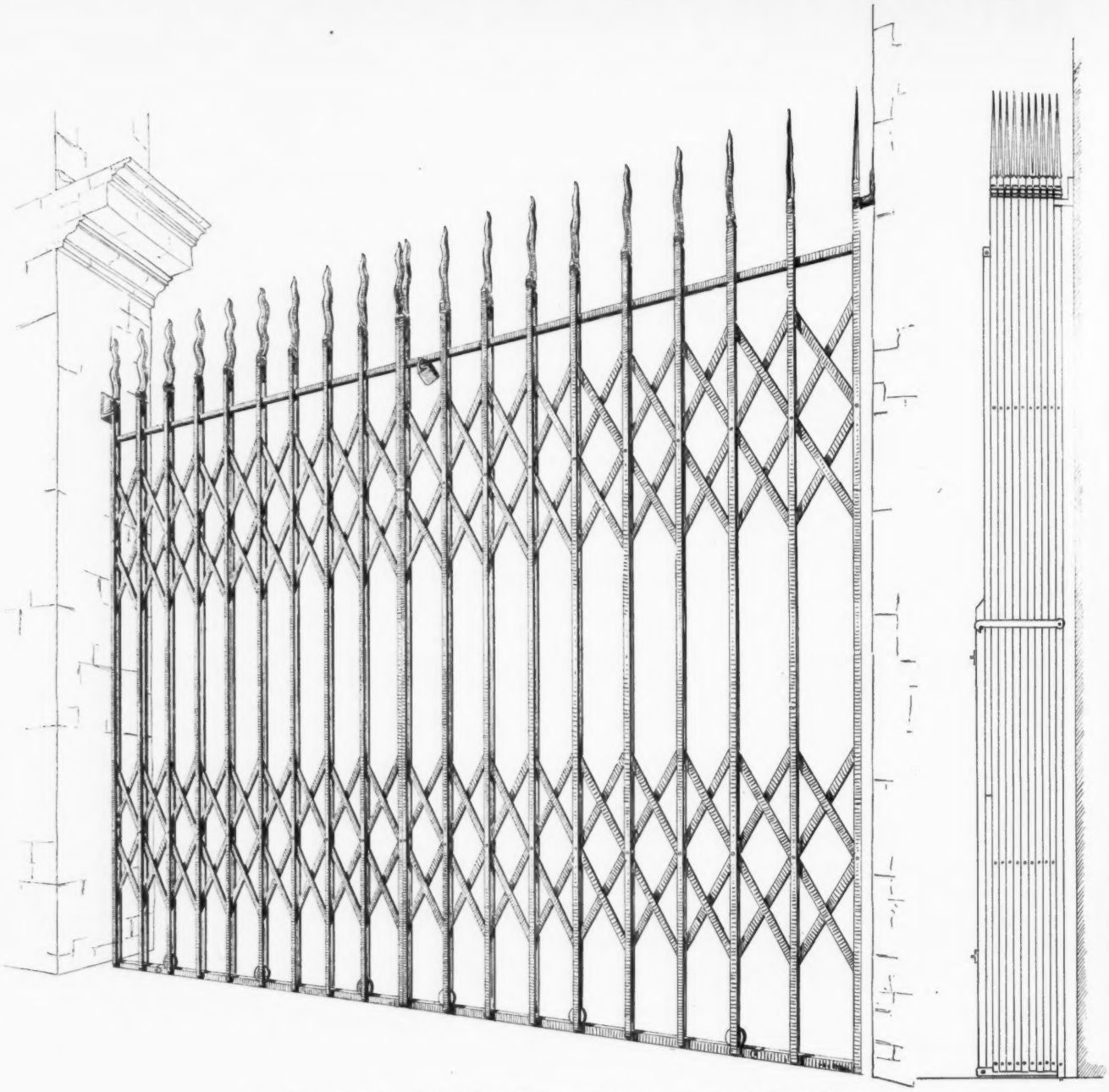

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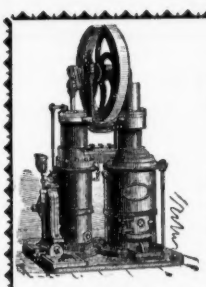

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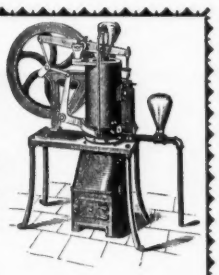

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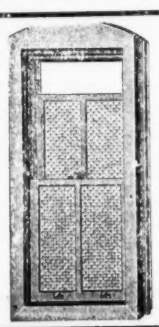

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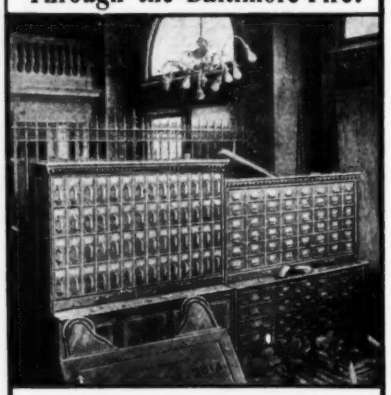

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THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. LXXXIV . SATURDAY, MAY 7, 1904 No. 1480

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MESSRS. CARRÈRE & HASTINGS are in a fair way to carry off one of the real "blue ribbons" that can come within the grasp of the architectural profession in this country. They are fairly entered in the lists and they may both win and wear it, if the design the Joint Committee of Senate and House has instructed them to prepare for completing, on the indicia left by Mr. Walter, the east front of the Capitol at Washington shall actually be approved and carried into execution. It is no mean glory to put the finishing-touch to so important and excellent a piece of work and worthily to close the rear of such a distinguished group of predecessors, and it was the feeling that this was so that caused architects everywhere in this country to protest against the placing of so honorable a task in any hands but those which had already proved their competence. As the selected architects have already been appointed consulting architects to the two new office-buildings which are to be built for the Senators and Representatives, to the north and south of the Capitol where they must inevitably group with that building and with the Library of Congress, their task is all the more important — since many a fine picture is injured by its setting — and the honor attending successful accomplishment all the greater. We fancy, however, it will be a little of a wrench for these architects to find themselves called on to forego their Beaux-Arts predilections and, so far as the Capitol is concerned, attempt to get back to first principles.

IT is interesting and encouraging to learn that, at length, the National Board of Fire Underwriters is "thoroughly aroused" by a mental inspection of the national annual ash-heap, a feature in the landscape of American daily life to which Mr. Edward Atkinson and others, to say nothing of ourselves, have been calling attention for years. By their own figures, the property-loss from fire during the last twenty-six years has aggregated more than three billion and ninety million dollars, on which the underwriters have had to pay an insurance loss of more than eighteen hundred million dollars. Aroused at last, the Board has created a "Committee of Twenty," the prime duty of which is to examine and define the limits of the congested districts in all the cities of the country when considered as exposures to the conflagration hazard, and then, by advice and suggestion, coöperate with Municipal, State and Federal authorities in bringing about the palliation, if not the absolute extinction, of the dangerous conditions. The task undertaken is an immense one, if carried out with the thoroughness the Board contemplates, and nobody backed by a less gigantic invested capital could dare to undertake it. How great the cost will be, how much time must be consumed in the task and how many men must be employed is not yet even guessed at; but it is already known that a small army of inspectors must be created and trained for this especial work, and the Board rightfully believes that the graduates from the architectural, engineering and technical schools are just the right sort of material from which to select its staff, and it hopes that any such graduates as may at this time be in search of occupation will not delay to put themselves in communication with the Secretary of the Committee of Twenty, Mr. Herbert Wilmerding, 46 Cedar Street, New York.

WE regret to learn that the Massachusetts legislature has given leave to the Young Men's Christian Association to advance the north wall of its proposed new building twenty feet nearer to the curb-line on Boylston St., Boston, than the line on which the present wall is built. Like all buildings in that portion of Boylston Street, the present building sets back twenty-five feet from the sidewalk, owing to the restriction imposed by the State when selling lots on the new-made land of the Back Bay. It is plain that if the State waives the condition in the case of one owner it must do so, sooner or later, in the case of others, and, consequently, what has been the most spacious street in the city will lose its distinguishing characteristic, a loss which will be all the more apparent when, if ever, the land of the Natural History Society, fronting the Y. M. C. A. Building, comes into the market with the Institute of Technology land, under the engineering of the latter institution. We hold it to be a very regrettable concession to the actual needs of a very worthy educational and philanthropic institution, and we hold it equally regrettable that the present fine building, quite the best piece of design produced by its architects, Messrs. Sturgis & Brigham, is likely to share the fate of so many other pieces of architecture in Boston and be dumped in the yard of the house-wrecker.

IT is curious that, just now, there is being demolished at the corner of Washington and Essex Street — which may be considered an extension of Boylston Street — a building by the same architects, which is to be replaced by a big department-store covering a whole block. As the work of demolition was about to begin, we looked at the building and wondered whether we ought not to photograph it and make a record of a building which we have never published; but we could not overcome the prejudice we always had against the particular form of Victorian Gothic of which it was so pronounced an exemplar. It was designed at the time that Collings's "*Gothic Forms*" had just reached this country and the architectural character of the building is sufficiently described by saying that it was based on that book. Fortunately the actual designer of both these buildings has passed over to the majority and so is spared the pain of seeing his work annihilated. But there is another architect in Boston, still living and, though retired from business, still in his prime, with whom fate has dealt most unkindly. A dozen years ago there was not to be found in Boston more refined, scholarly and artistic work than was discoverable in the series of gray and white marble buildings — the Sears Building, the Chickering Building, the Boylston Building and some others — of which Cumings & Sears were the architects. They were notable buildings, and architects from other parts of the country came especially to see them. But unfortunately they were designed in Venetian Gothic and, of course, did not have huge plate-glass windows; but as plate-glass could not be had when they were built these offices always rented well enough, as they were comparatively well lighted. But with the advent of plate-glass came a change: their lower stories were ripped out and the marble fronts rested for a while on glass; then came further changes and finally total demolition, and the designer himself has had the pain and chagrin of seeing wiped out the buildings which he hoped would pass on to succeeding generations the record of his ability as an artist. Architecture may be the "mother of the arts," but nowadays she is treated uncommonly like a step-mother.

THE Boston Architectural Club, which opens its exhibition this week, has had a collision with the tariff and, as usual, has been worsted, for, in spite of protest, it has been forced to pay duty on three drawings made by "an American

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citizen residing abroad," which have been sent here for exhibition purposes and are not for sale. We fancy it would be difficult to find a purchaser for the drawings made by an architectural student at the École des Beaux-Arts, and we can imagine the conscientious struggles of the Collector or the Naval Officer of the Port, or whatever dignitary it is who solves the riddles that Mr. Dingley propounded, as he tried to discover the worth in dollars and cents of three *esquisses-esquisses* exhibiting, possibly, a fountain in the Desert of Sahara, the *pigeonnier* of a rich amateur, and the saloon of a *bateau mouche.*

EITHER through the following out of a definite programme and policy or because again victimized by an unkind chance, the Architectural College of Cornell University is to have its progress checked by once more losing the guidance of its selected head. It is only two or three years ago that Mr. John V. Van Pelt assumed the charge laid down by Professor Trowbridge, and now Professor Van Pelt's resignation takes effect at the close of the college year. In both these cases the reason assigned for retirement was that the incumbent desired to return to the active practice of his profession. There is no educational position which it is more difficult to fill than the chair of the head of such a department, and we believe it can be satisfactorily filled only by a man in whom the pedagogic spirit is inborn, not acquired, a man who is willing to sacrifice his own glory for the sake of enabling other men to live their lives more nobly and to a fuller degree. But a man who is a mere pedagogue is out of place in these technical schools: he is not called on to instruct only immature boys, but may at any moment find in his classes young men who have already been at work in the world and have had their intelligences sharpened on the whetstone of experience. Such men as these demand of their teacher not what he thinks it worth while to give them, but light upon those things which they want to know, and if his intellectual faculties have been drugged with the weariness of routine work, so that he is unable to satisfy their reasonable expectations, it is inevitable that they will give him such a reputation as a back number as must shortly bring about his displacement.

THE Annual Report of the Boston Museum of Fine-Arts for the past year is somewhat late in making its appearance and, as it relates purely to last year, it gives little information concerning the progress that is making in the matter of plans for the new building, a matter in which all citizens are very greatly interested, the working man even more perhaps than the idler. The preponderance of interest on the part of the former class may be deduced from the fact that the average number of Sunday visitors to the Museum was just one thousand more than on Saturdays, the other free day, and twenty times as many as the average number of visitors on "pay days." As the average number of visitors on Sundays was nearly twenty-five hundred, it is clear that a wide benefit is secured to working people, who are unable to visit the Museum on working days, by the recession of Puritanical ideas as to the proper use of Sunday. As usual, since the income from paid admissions is the veriest bagatelle, the report has to record a deficit which, as usual, the good citizens of Boston are invited to make good by voluntary subscription. Last year, however, the deficit was more than a quarter less than for the preceding year, and this in spite of the fact that the Museum staff had been increased and the general service improved. The progressive spirit of the Trustees is shown by the fact that the purchase of works of art, of divers kinds, caused an expenditure of over one hundred and sixty thousand dollars, in which, as we apprehend, is included the bequest of Mrs. Samuel D. Warren, which was nearly all consumed by purchasing articles selected from her own collections. The most important acquisition of the year has been the collection of Greek and Roman sculptures, vases and smaller works of art, the gift of Mr. Francis Bartlett. A considerable item in the expense account of the Museum has, in the last few years, been the printing bill and this item is likely to increase, for the Trustees have entered the field of publication and, besides the formal reports, now regularly issue a little monthly *Bulletin* and have issued, and are to publish from time to time, special reports prepared by one member or another of the staff: these special reports, or handbooks, are treatises of great value and the Trustees are to be commended for their willingness to foster a scheme which enables the members of the staff to achieve something in the way of personal literary distinction. Mr. Benjamin Ives Gilman's "*Manual of Italian and Renaissance Sculpture,*" the next in the series to appear, is now in print.

IF the laboring man, duly "organized," could only assimilate a few of the truths that have lately been presented to him by men he has at one time or another honored with his approbation, the world of affairs might run far more smoothly than it does. Mr. Terrence V. Powderly, once President of the Knights of Labor when that body was more powerful than it now is, declared, the other day, before the Shoe and Leather Association at Chicago, that "of all the costly, cumbrous, wasteful, cruel methods of settling a difficulty in labor matters, the strike and lockout are the worst." He urged unions to incorporate, since "there is nothing the law can reach under incorporation that it can't reach now," showing by this utterance that he has read with diligence the successive rulings of judges before whom labor matters have been argued in one part of the country or another. Mr. Powderly is, perhaps, from the union man's point-of-view, a bit of a "back number," but Mr. Gompers is still a power in the union ranks, and he recently condemned the violence exhibited by the Franklin Union of Press Feeders at Chicago and declared that "slugging and violence do not win strikes." Another statement, which was said to have been applauded by his hearers, the workmen on his own railroad, recently made by President Mellen, of the New York, New Haven & Hartford Railroad, has in it an economic truth which deserves the thoughtful consideration of union leaders. Mr. Mellen said that "divested of all claptrap, the union is simply a means of averaging wages, and an employer views it as such. It is a device for making those who are willing to work care for those who want to soldier." That this truism should be applauded, merely shows that the men who heard it had ordinary intelligence; but it does not prove that the workers will dare to strike off the shackles that bind them to the drones: there is the "slugging and violence" that Mr. Gompers reprehends still to be reckoned with. But there are now and again signs that the union man may still be able to recover his manhood, and amongst them we are glad to record the fact that a member of the Carriage and Wagon Workers' Union of Chicago has been fined by his fellow members and by them prosecuted in a police court for assaulting a non-union workman.

IT is not unreasonable that the proletariat should be disturbed in his mind and be vexed at the inequality of things when, like the rest of us, he can read in his daily paper that Mr. James Henry Smith has just bought, for two millions of dollars, the Fifth Avenue house of the late William C. Whitney. Ordinarily speaking, the working man likes to have people have two-million-dollar houses to live in since, until now, there were no such houses to be had ready-made and those who wanted them must, therefore, build them and so give work to the laboring man. Henceforward, there may be a change and those looking for costly dwellings may be able to find them already built, for it is a well-known foible of Americans to prefer not to live in the houses builded by their fathers; so, as the present generation of millionaires drop off, their houses are likely to come into the market. To many people half the fun of having money is to use it in developing one's own tastes or dreams, not in buying the development of other people's dreams and tastes, and many a nightmare piece of castellated architecture — formerly built in wood, but nowadays in stone — can be found here and there, standing as the expression of the boyhood aspiration of some uncultivated person who had acquired the abundant means that enabled him to carry it out. As Mr. Smith acquired not only the house but all the furniture, essentially all the pictures, fittings, books and bric-à-brac of the late Mr. Whitney, we may hope that his tastes are absolutely identical with those of the late owner, else it must be long before he can shake off the feeling that he is merely "stopping at" some very perfectly appointed hotel. The uncle of Mr. Smith, from whom he inherits, was an Englishman who made his fortune in Chicago, where no one suspected he had accumulated forty millions of dollars, and some years ago retired to London to end his days in his native land. Because of this filial act, the British exchequer was shortly thereafter benefited in the amount of four and a-half million dollars, which it collected from his estate in the way of succession tax.

THE CORINTHIAN CAPITALS OF THE THOLOS AT EPIDAURUS.[1]

Fig. 1. Corinthian Capital from the Tholos at Epidaurus, Athens Museum.

ONE of the most striking architectural objects to be seen in the Greek National Museum at Athens is a Corinthian capital brought from the ruins at Epidaurus. This example is not only remarkable as a work of art. Although mentioned only in the more recent books, it is the oldest extant capital of the Corinthian order, holding a unique place in the history of Classic architecture. Its relation to the Tholos at Epidaurus, with which it has been identified, has been earnestly discussed by archæologists. It has besides an unusual interest as a "treasure-trove" of Greek archæology, having been curiously preserved through twenty-two centuries comparatively free from injury. Its assigned date, about the middle of the fourth century B. C., makes its present state the more remarkable, especially when it is considered that the Corinthian capital of the Temple of Apollo at Bassæ, dated only eighty years earlier, has completely disappeared; and that the capitals of the Choragic Monument of Lysicrates at Athens, which was built fifteen years later, have been so mutilated as to be hardly intelligible.

Figure 1 shows this capital as it appears in the Athens museum. The Pentelic marble of which it was carved is gray, not mellow and warm in color from exposure, like the marbles of the Acropolis. Its principal dimensions are as follows: —

Diameter at necking	.52 m. or	20.5 in.
Height of bell	.52 m. or	20.5 in.
Thickness of abacus	.12 m. or	4.72 in.
Total height	.64 m. or	25.2 in.
Width of abacus	.81 m. or	31.9 in.
Diagonal spread of abacus	1.15 m. or	45.3 in.

A diagonal half-elevation of this capital, restored, is shown in Figure 2 [See Illustrations].

The ruins of the Hieron, or Sanctuary of Asklepios at Epidaurus, lie in the Argolic Peninsula between the Plain of Argos (the neighborhood of Tiryns and Mycenæ) and the Saronic Gulf. It is a morning's sail across this water from the Piræus to the small and ancient port of Epidaurus from whence the ruins may be reached by a three-mile walk among the hills. The cult of Asklepios, god of healing or medicine, was here founded at a remote age. According to local traditions recorded by Pausanias, this mythical personage, son of Apollo and Koronis — part human, part divine — was himself born upon a mountainside near by. On this occasion the serpent that has ever since figured as the symbol of medical science first came to be associated with the healing deity. These stories and others have been traced back to the North, however, whence the Dorians had come down to settle the peninsula; but at any rate Epidaurus itself was always looked upon as the home and chief seat of the deity.

Originally, the buildings of the sanctuary were of wood, including a theatre with wooden benches. These were replaced and added to in time by more substantial constructions of stone, coated with stucco, and of marble. Beside the specially sacred buildings of the establishment, which occupied a walled enclosure, the group was gradually enlarged by living accommodations for a steady stream of the sick and afflicted, and could care even for portions of the vast floods of pilgrims that came down once or twice yearly on festival occasions. Within the sacred enclosure was a grove and in this and about the temples were altars and many votive columns and statues, set up by grateful suppliants, and an unusual number and variety of beautiful marble exedras, or resting-places. The remains of these, while small, are among the most interesting on the site. Outside the sacred place were hostelries or dormitories, buildings for gymnastic and musical exercises, and two features of the semi-religious amusement of great crowds — a stadium or race-course, and a marble theatre that was famous even in antiquity for being the most perfect of its kind as well as for the beauty of its surroundings.

Cures effected at Epidaurus were miraculous indeed, according to the inscriptions, and its fame was wide. The cult spread to Athens, to Crete, Pergamon and Smyrna, and even, in later days, to Rome itself, where the marble "*Ship of Æsculapius*" still lies fast anchored, though dismantled and disguised, in the middle of the Tiber. The wealth of Epidaurus increased with its fame. This, however, was no unmixed blessing to the sanctuary, since it not only invited corruption within, but tempted spoilers from without. Its hoarded offerings drew pirates from Sicily; and, during the first century B. C., Sulla, in arrears to his legions, visited the shrine for no religious purpose. In what measure the Hieron paid other tribute to Rome with its treasures of art will never be known. But a more serious danger lay in the greater foreign patronage that followed the wealth and fame of the Sanctuary. Through its continued contact with more luxurious and effeminate peoples, the worship at Epidaurus gradually lost its old Greek character. In the second century A. D. Antoninus Pius erected baths and other buildings, and temples were dedicated to Asklepios in the character of Egyptian deities, then fashionable. Not long afterward came the general decline of Paganism.

Under Byzantine rule the temple enclosure, like the Acropolis at Athens, was converted into a fort that played some part in the invasion of the Goths, Vandals and Slavs of the next five centuries, and the wars of the succeeding ten, when the Turks and Venetians finished the work of time and the barbarians. By the beginning of the nineteenth century little remained of the great religious establishment but low heaps of débris, overgrown with poppies in springtime and visited only by the picturesque figures of cloaked and hooded shepherds.

Digging was begun upon the site of the sanctuary in 1881 by Cavvadias, the Director of the Greek Archæological Society. His "*Feuilles d'Epidaure*," published ten years later, was followed by French, German and English writings on the subject, with some interesting restorations. These show that the sacred enclosure (Fig. 3), entered through a Propylæa, held, together with the minor works already mentioned, the Temple to Asklepios, a temple to Artemis, two colonnades used as sleeping-places, and an exquisite circular building called the Tholos, or Rotunda. This Rotunda was built during the middle half of the fourth century B. C., a hundred years after the Parthenon and shortly before the Monument of Lysicrates. As Pansanius wrote, it was "well worth seeing," for it and the theatre at Epidaurus ranked as the masterpieces of their architect, the younger Polycletus. The Tholos was in many ways the most interesting among the entire group of buildings. At first

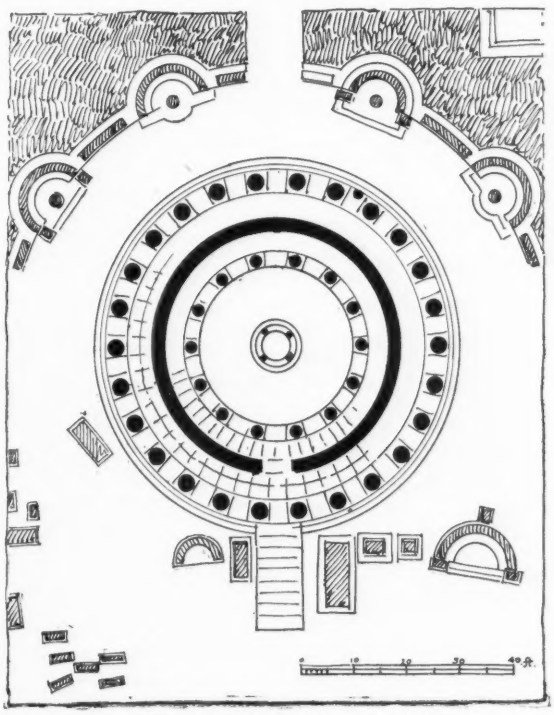

Fig. 4. Plan of the Tholos at Epidaurus, after Defrasse.

it was supposed to have contained an altar. But the foundations were found to have been curiously laid with deep concentric walls, arranged with cross partitions and openings between the annular spaces, after the manner of a labyrinth. This peculiarity was taken by later students to indicate that the Tholos was the den and shrine

[1] This paper was prepared in partial fulfilment of the requirements of the Perkins Travelling Fellowship in Columbia University.

of the sacred serpents of Asklepios. Others, notably the French scholars, now regard this unusual substruction as an ingenious device to insure the circulation of water that flowed from an ancient source to an opening or well in the centre of the building. In this view the Tholos was the shelter of a healing spring, the sacred well of Asklepios.

The restoration of the Tholos (see plan and section, Figs. 4 and 5) shows a circular cella about 48 feet in diameter, surrounded by a

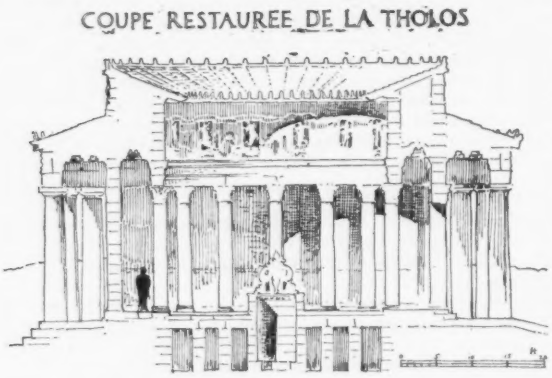

Fig. 5. Section of the Tholos as restored by Defrasse.

Doric colonnade of twenty-six columns, resting upon a triple stylobate. The diameter of the entire stylobate was about 70.5 feet; that of the colonnade, outside, about 64 feet. The entablature of this colonnade was finished with a magnificent *chéneau*, or gutter. The roof was tiled with marble. According to the French scholars it sloped both outward and inward from the walls of the cella, leaving in the centre an open space about 30 feet across, around which stood a colonnade of fourteen Corinthian columns. The lower diameter of these columns was .61 metres or 24 inches, and their total height, not precisely determinable, was about 18 feet or only nine diameters. While the exterior Doric columns were made of stone, thinly coated with fine stucco and colored, the Corinthian colonnade of the interior was built entirely of Pentelic marble. It is with this colonnade that the capital in the museum at Athens is associated, although it never formed a part of it. The remains of this colonnade as well as those of the rest of the superstructure, were found scattered about in an extremely mutilated condition. In fact nothing of the Tholos was standing above its foundations. Of the fourteen Corinthian capitals of the colonnade not one remained with a corner volute or flower. There was not even a single leaf or scroll or volute intact in the whole collection. Some of the fragments had been burned for lime.

A further excavation, however, between the Tholos and the Temple of Asklepios brought to light the comparatively uninjured specimen

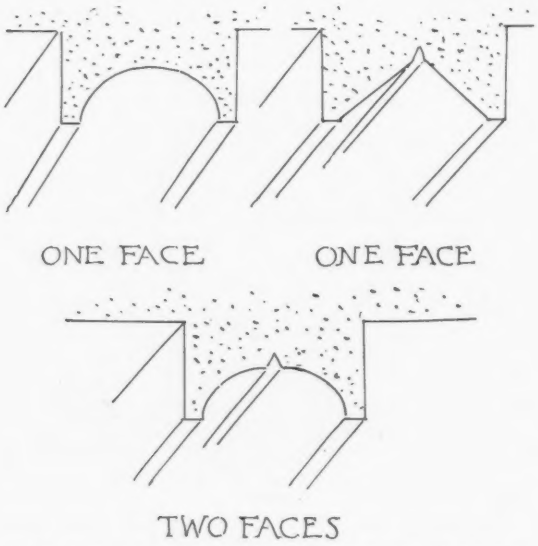

Fig. 6. Sections of Scrolls: Corinthian Capital of the Tholos in the Athens Museum. Half Full-size.

now in the Athens museum. The uncut abacus of this capital showed that it had never been used in the colonnade. Moreover, it was found to have been carefully buried and covered over with protecting tiles, three feet below the ancient level of the ground. Just why, nobody knows.

Such an attractive mystery as this naturally drew out a small fire of speculation. M. Cavvadias thought that this capital might have been the model, or canon, from which the others were carved. In antiquity, however, such models were usually made of wax, and at a reduced scale. Dr. Dörpfeld has suggested that the buried capital was either the original model, cut by Polycletus himself, or a copy of the original capitals made by some later hand. It has been suggested also that, while originally intended for use in the colonnade of the Tholos, it may have been rejected because of some slight defect of workmanship. But this seems improbable, since the ancient custom was to correct such defects very nicely by means of insertions, or "Dutchmen," as they are called by workmen nowadays. Patches or repairs of this kind have been found in the Parthenon and in the carved ornaments of the Erechtheum; and they were common in statuary. Finally, the capital has been described and illustrated in the splendid monograph of the French scholars, MM. Defrasse and Lechat: "*Epidaure*" — the restorations by M. Defrasse, the text by M. Lechat (Paris 1895). These archæologists studied both the fragments of the capitals actually used at Epidaurus and the capital in the museum at Athens and concluded that it had served not merely as a model for the others, but also as an experimental or trial piece from which the finished pattern had been derived. Several irregularities in the Museum capital go to sustain this view.

Fig. 8. Fragment of Capital from the Tholos, Epidaurus Museum.

The more obvious of these irregularities, as described by M. Lechat, is seen in the cutting of the leaves. The lobes are variously divided, even in the same leaf, into five, six and seven points, as if to test the effects of different combinations. In the finished and used capitals five-pointed lobes were used uniformly in all the leaves. There is another irregularity that shows the experimental nature of the museum example. This occurs in the grooving of the four scrolls that lie on the surface of the bell, as may best be seen in the sketches (Fig. 6). On one face of the capital this groove is elliptical in section; on another it is angular, with a small V-cut, or sinkage, at the bottom; on two of the faces it is again elliptical, but with a similar sinkage. This was adopted in a modified form for the finished work.

These things justify the conclusion of the French scholars; and their designation "*modèle d'essai*," or trial model, may henceforth be applied to the Museum capital. These irregularities suffice to explain also why this trial model could not itself be used in the building: "it offered dispositions that distinguished it alone, and was not at all a perfect unity." It was too individual to be used, and was certainly too beautiful to be destroyed.

But the carving of the trial piece not only presents irregularities:

it materially differs from that of the other capitals, as the same scholars presently discovered. "Nevertheless," M. Lechat goes on to say, "the model capital is still the most beautiful of all that were found. The other capitals do not appear, so far as their remains testify, to have been cut with that ease and surety and finish, that reveal the hand of a master. The carving appears in a general way coarser; and it is unequal in execution, as if entrusted to workmen of varying skill. As to the trial model, its leaves adorn the bell without smothering it. The vegetable forms combine happily and without confusion with the geometric; the decoration does not destroy the constructive lines, as in those over-ornamented capitals in which everything is lost in a pretentious bramble of acanthus. No other Corinthian capital seems to us to have united, in measure equally harmonious, richness and sobriety, suppleness and vigor, natural grace and just proportions. None other is equally beautiful as a whole, nor in detail is more finely distinguished. As the capital of the Parthenon is to the Doric order, and that of the Erechtheum to the Ionic, so the capital of the Tholos at Epidaurus stands to the Corinthian order of Greek architecture." Naturally, the "Restoration of the Corinthian capital of the Tholos at Epidaurus," illustrating this text (see Fig. 7), was drawn like the others as much as possible from the Museum example at Athens; not from the fragments of the capitals really used at Epidaurus.

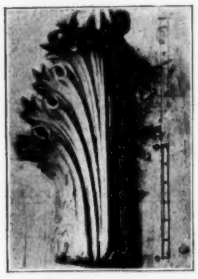

Fig. 10. Clay Study from Fragments at Epidaurus.

Not to dispute the author's eloquent appreciation of the model capital, most of which, of course, applies equally well to the finished ones, it will be seen that his view involves a difficulty, if not a paradox. For it is difficult to understand how, in the days of such high artistic standards, this inequality and inferiority of workmanship could have been tolerated either by the architect or by his clients, the priests of Asklepios. Furthermore, these capitals of the Tholos formed only a part of its admirable decorative carvings; and the technical perfection of the remainder, doubtless carved by the same variously skilled hands, has not as yet been questioned. It seemed to the writer necessary, for additional light on the question, to examine these carvings and the fragments of the used capitals, at Epidaurus itself.

It is the policy of the Greek Government to keep many of the most important "finds" of all the archæological schools near the sites where they were uncovered. Accordingly it has built at Epidaurus, on a hillside overlooking the ruins and near the Theatre, a small museum which contains, together with many other interesting objects, some of the best preserved fragments from the Tholos. These include a few badly broken pieces of the Corinthian capitals (Fig. 8). Even a most hasty examination of these fragments showed departures from the model capital more striking than the text of the French monograph had implied. While its author compares the two capitals with respect to their technical excellence, and to "that ease and surety that reveal the hand of a master," the differences between them lie in fact beyond the plane of mere carving, and affect their modelling or design. These differences appeared, therefore, to offer a new basis for comparing the model capital with the finished work. They were found to obtain in the modelling and relief both of the leaves and flowers, and of the volutes and scrolls — practically in all the ornament of the capital; and seemed to call for a new drawing which should really be a restoration of the capitals actually used in the Tholos (Fig. 9. See Illustrations).

The first of these differences is in the modelling of the leaves, the six and seven pointed lobes of which gave place to five-pointed lobes in the finished work. At the same time the number of the lobes was increased from seven to nine, and the ribs between them, which became relatively straight, were narrowed, and made cylindrical instead of broad and conical. The divisions of the leaves were further accented by large eyes, deeply undercut but not opened outward. By all this the character of the leaves was greatly changed. Their relief upon the bell was much higher than in the model, and the projection of their tips bolder, as determined approximately from a sketch in clay (Fig. 10). This gave the corner leaves of the finished capital a stronger part in its diagonal profile than those of the model. (See dotted lines, Fig. 2, Illustrations.)

Another departure from the model is shown in the attachments of the flowers to the bell. These attachments (Fig. 8) are long and narrow in the fragments at Epidaurus, indicating that the missing flowers were bulbous in shape, and grew upward organically from stalks that left the bell tangentially. The flowers of the model project abruptly and bodily from its surface.

The remaining differences are shown in the sections of the volutes and scrolls, which in the finished capitals were much stronger in relief, and were cut with extreme boldness and delicacy, especially when compared with the same features of the model (Fig. 11).

In view of such considerable changes as these it is now hardly necessary to remark that the trial model was not rejected because of a few slight irregularities, or "lack of perfect unity"; and, further, that these changes signify new ideas in the design rather than a rude translation of the model at the hands of unskilled workmen.

Like all questions of modelling, the effect of these modifications may be considered from two points-of-view. Taking the finished design by itself, the alteration in the carving of the leaves can hardly be said to improve the appearance of the capital as a whole. The greater complexity of this leafage, with its high relief, creates a sharp contrast against the plain surface of the bell above it, emphasizing a horizontal division that is scarcely felt in the model capital. The leaves are also less sinuous and graceful, although they are at

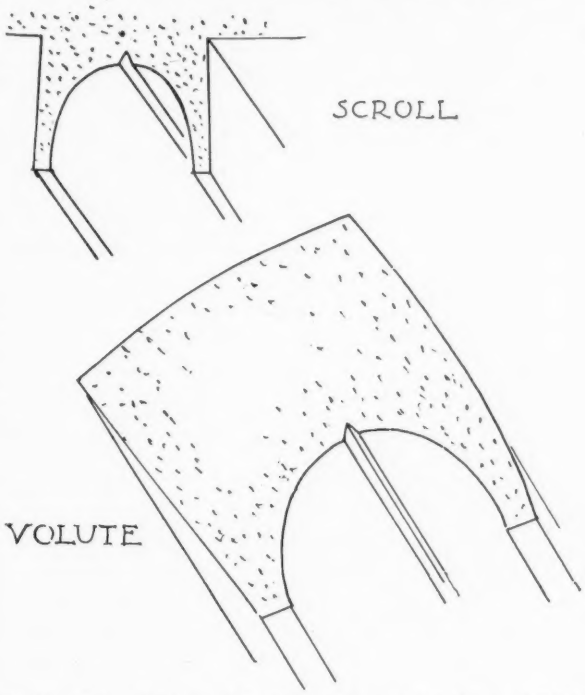

Fig. 11. Sections of Volutes and Scrolls, from Fragments at Epidaurus. Half Full-size.

the same time more crisp and vigorous, and have a truer acanthus character than those of the trial model. But, on the whole, the judgment of the French scholars would seem to hold true in so far as the intrinsic merits of the two capitals are concerned. That is to say, considering the two capitals purely as pieces of carved ornament, the trial model is superior to the finished product. But this is not a final criterion for objects that were designed for use, not intended for exhibition to a remote posterity in museums. Hence it would seem more just to consider these capitals in their relation to the completed Tholos.

The interior of the Tholos (Fig. 5), mainly of Pentelic marble, was about 42 feet in diameter. A large part of the wall surface was richly decorated in color, and was finished with a carved frieze. The Corinthian colonnade surrounded some central feature, probably a well curb, and was about 20 feet high, including a decorated entablature. Upon this again, assuming the French restoration to be correct, rested a richly frescoed wall about 10 feet in height, supporting the interior eaves of the open roof.

Fig. 12. Frieze around Wall of Cella of the Tholos.

It is not difficult to imagine that these conditions may have had much to do with the modification of the trial capital; and that if any of its intrinsic beauty was sacrificed in the finished work it was for good reason. The moderate size of the interior and its great elegance might in the first place have determined a smaller scale and higher finish for the carving of the leafage. A decisive, clear-cut

relief of all the detail might have been required in connection with strong color decoration, such as was used in the houses at Rome and Pompeii, if these may be taken as examples. Lastly, the height of the capitals above the eye should be taken into account, and the circumstance that, while primarily part of an interior decoration, the Corinthian colonnade partook (if the roof was open) of the nature of an exterior order as well. These conditions would not unnaturally have made necessary the stronger relief of the masses, and the more vigorous modelling of the volutes and scrolls. Perhaps in this way the purpose of the architect may be partly explained. At all events, while the trial model appears to great advantage on the eyes' level, there seems to be no doubt that the finished capitals were seen more advantageously aloft in the completed building. All the departures that these capitals show may well be corrections applied to the model after it had been subjected to the test of putting it up in its designed position in the Tholos.

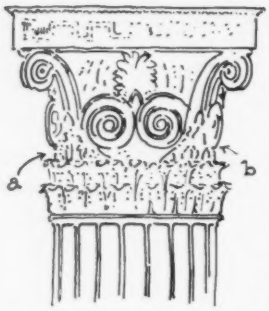

Fig. 13. Restoration of Archaic Capital from Bassæ, after Cockerell.

Considered as part of the system of carved decoration in the Tholos, the capitals are next brought into comparison with the carvings of the frieze around the cella wall, and of the carved entablature of the colonnade itself. Fragments of these are fortunately preserved (Fig. 12, also Fig. 7). All of them have the same crisp character that distinguishes the used capitals from the trial model, which, while surpassingly beautiful, could scarcely be associated with work of such bold finish. The water-leaf, egg-and-dart, meander and anthemion of these members were carved with such delicacy and decision as to rival similar work upon the Erectheum. The architecture of the Tholos and the character of its decoration therefore, go together to show that these capitals were designed and carved to suit the place that they occupied.

If all this is true the model capital at Athens now assumes a completely tentative character that entirely explains its unfinished, though wonderfully preserved condition.

It remains finally to give the capital of the Tholos at Epidaurus its proper place in the history of the Corinthian order. The development of this order in Greece was late and its use very limited, compared with that of the Doric and Ionic; though it contributed more than both of these together to the Roman style of architecture. In this development the capital of the Clepsydra at Athens, or Tower of the Winds (100 B. C.), may be neglected as an incomplete, or Egyptianesque example; also the finally crystallized and set type of those later Greek buildings of the Corinthian order, such as the Temple of Jupiter Olympius at Athens, which belong to the Roman period itself. This leaves but three monuments in which this order was employed: The Temple of Apollo Epicurius at Bassæ, the Tholos at Epidaurus, and the Choragic Monument of Lysicrates at Athens.

The Temple of Apollo at Bassæ was built by Ictinus about 430 B. C. Only one Corinthian column was used in it, at the end, and, as is supposed, on the axis, of the *naos*. The capital of this column was seen and described by Cockerell and other early travellers in the Morea; but it has since been entirely lost, and is now known only from their writings and sketches[1] (Figs. 13 and 14). In decided contrast with the thoroughly developed order of the temple itself, this Corinthian capital appears to have been quite archaic, but of such composition as to stamp it unmistakably as the direct prototype of the capitals of the Tholos. The relief of its carving was very low, and some of its decoration was painted; thus presenting later and earlier decorative systems in combination. Classifying them according to degrees of relief, therefore, the model capital at Athens may be said to come between this prototype at Bassæ and the finished capitals of the Tholos. It might well find a place in the period of eighty years between the two.

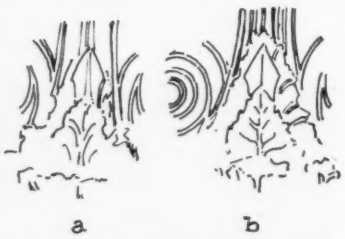

Fig. 14. Two Corner Volutes of the Capital from Bassæ.

The Choragic Monument of Lysicrates was built in the year 355 B. C. The Tholos having been demolished, this is the oldest remaining monument of the Corinthian order. Although it followed the Tholos by an interval of only fifteen years or so, its capitals show, along with their greatly increased richness, one striking addition — now a familiar characteristic — in the use of the *caulis* and *caulicolus*, or leaves springing from a stalk supporting the volutes and scrolls. This is the one element that seems to be needed in the capital of the Tholos to bind together the vegetable and geometric elements of its decoration. It is most important also for the strength that it lends to the volutes, giving the capital more of the character of a supporting member. This use of the caulicolus was a great advance in the evolution of the Corinthian capital. It seems in fact to have been the finishing touch that distinguishes the completed and permanent type of Corinthian capital from the earlier or archaic. Of this earlier class the capital of the Tholos was probably the last, as well as the most highly developed and most beautiful example.

CHARLES S. KAISER.

[1] Cockerell's "*Travels in Southern Europe*," p. 219, gives the following circumstantial account of the loss of this capital: — "The piece of sculpture which the explorers of Phigaleia failed to bring away was the capital of the single Corinthian column of the interior of the temple. It was of the very finest workmanship, and although the volutes had been broken off, much of it was still well preserved. Vili Pasha, the Governor of the Morea . . . had sanctioned the exportation of the marbles. The local archons, however, put every impediment they could in the way . . . giving information to the incoming pasha, who sent down troops to stop the embarkation. Everything had been loaded except the capital in question, which was more ponderous than the rest, and was still standing half in and half out of the water when the troops came up. The boat had to put off without it, and the travellers had the mortification of seeing it broken to pieces by the Turks." ". . . the material was marble, and the workmanship of the utmost delicacy, each of the caulicolæ being of exquisite sculpture and diverse in form and design. . . . Upon the surface of the cap the clearest indications of color were discovered, as also on the abacus. The design . . . seems by a different hand from the original work." Figure 14, sketched from Cockerell's book, indicates the diversity above noted in the design of the caulicolæ. This curious feature of the older work suggests that the variations of modelling in the Epidaurus capital at Athens may be explained otherwise than by assuming it to have been a "trial model."

COST OF ADOPTION OF THE METRIC SYSTEM.

RECENTLY the following facts were brought out by Henry R. Towne (President of the Yale & Towne Mfg. Co.) before a Congressional Committee. Mr. Towne's long experience in the manufacturing and engineering field makes his opinion one of weight in opposition to the adoption of the metric system.

In part Mr. Towne said: —

"The argument is made that we need this change in order to foster our export trade. This trade is already vast and increasing, is of vital importance to the country, and, above all, to our manufacturing industries. We are to-day undoubtedly the greatest manufacturing country. Our mechanical industries — of course, I do not speak of agriculture, the greatest industry of all and the foundation of all our mechanical industries — are based primarily, every one of them, on the machine-tool industry. Every element of those industries is built up on the English inch as its corner-stone, and if you pull out that corner-stone the edifice will fall.

CONGRESSMAN GAINES: Let me ask you a question there. We have sold millions of our machines in foreign countries. That machinery will have to be repaired from time to time, when it wears out or breaks, or new machinery supplied from this country. If we should change to the metric system here, and hereafter make our machinery on the metric system, would it interfere with the supplying of those parts in those foreign countries?

MR. TOWNE: Yes, sir. These implements, these machines, would become depreciated in value in this, that they could be repaired only by parts made to the English standard, which latter could not be used with machine-tools made under the metric system.

CONGRESSMAN GAINES: How much would it cost you to change your machinery from your present system, the American system, to the metric system? And when you answer that, tell me how much — if you possibly can make the calculation — tell me how much it would cost the manufacturers of the United States, all the manufacturers, to change their machinery from the present system to the metric system?

MR. TOWNE: I will state, to cover all your question implies — the complete substitution of the metric system for the English system of weights and measures for all of our manufacturers — that a thousand millions of dollars would not pay for it.

CONGRESSMAN GAINES: Would it practically bankrupt the capital investigated in machinery now?

MR. TOWNE: No, sir; because the American manufacturer would not acquiesce in the change.

CONGRESSMAN GAINES: Suppose we make him do it?

MR. TOWNE: He is not going to allow himself to be wiped out of existence.

CONGRESSMAN GAINES: But suppose we put a penalty or fine upon him?

MR. TOWNE: Then he will elect new Members of Congress who will execute his will. (Laughter.)

CONGRESSMAN GAINES: Gentlemen, I move that we table this bill right here and quit taking testimony. (Laughter.)

MR. TOWNE: The impression prevails that this change would be accomplished to a large extent by the withdrawal of the carpenter's two-foot rule and the substitution therefor of the metric rule. I want to illustrate by these exhibits the fact that, in practical metal

working, we do not use the two-foot rule. We work with gauges and sizing tools. I want briefly to illustrate what these gauges represent. Here is a file of blue-prints showing on each page from two to six gauges; nothing but gauges, all relating to a single product in the Yale & Towne Manufacturing Co.'s works. That product is a common dial, or combination, lock used on safes. It is only a trifling part of our total product, and this is the gauge equipment required for that one product.

CONGRESSMAN GAINES: How much would it cost to reproduce that if you had to change it to the metric system?

MR. TOWNE: This set of gauges?

CONGRESSMAN GAINES: Yes, sir.

MR. TOWNE: Not less than $5,000 or $6,000; probably $10,000. That product is just a small part of our total business. Every dimension, on every one of these many sheets, is in decimals of an inch; always in hundreths, more often in thousandths, sometimes in ten-thousandths. For example, here is a gauge used in making one part of a Yale lock of a certain size, a small size. This is the article. Here is the gauge, by which the workman ascertains whether the diameter of that piece is right or wrong. The proper diameter is forty one-hundredths of an inch. This gauge is made of hardened steel, ground accurately, and this hole is exactly forty one-hundredths of an inch in diameter and the piece should go into it snugly. This other hole is one one-thousandth of an inch smaller. The article must not go into the latter gauge. If it does it is rejected. The limit of error, or tolerance, as it is called, in this particular article is one-thousandth of an inch. We do our work with gauges of this kind, not with a 2-foot rule, and not even with a steel rule. To produce such a gauge as this we use a scale graduated down to the ten-thousandth part of an inch; but we have others which give the one-hundred-thousandth part of an inch.

The daily use of these gauges involves a little wear. That wear has to be corrected from time to time and finally the gauge has to be thrown away and replaced by a new one. In order to ascertain how much wear is taking place we must have a set of "master gauges" which are kept locked up and never used except for reference — perhaps once a year, once a month or once a week. These working gauges are carried to the room where the latter are kept and tested by the reference gauges to see if they are worn so much as to be condemned. If they are, they are replaced by others. A working gauge nearly always has to be duplicated by a reference gauge.

MR. LANNING: Can you tell us — perhaps any of us could figure it out, and possibly some have already done so — how would eight hundred one-thousandths of an inch be expressed in its metric equivalent, and how would seven hundred and ninety-nine one-thousandths of an inch be expressed?

MR. TOWNE: The equivalent of a millimetre is .0393707904 inch. Now, to convert these existing articles, all of which are dimensioned to the English inch, into dimensions of the metric system, of course, you must go into millimetres. You cannot use the metre for such a minute measurement. You have got to multiply each one of your fractional parts of an inch by this string of ten decimals, which is the arithmetical equivalent of the millimetre to the English inch.

In order to produce repetition work economically, where it involves other mechanical operations, the workman is furnished with tools of which there are many kinds, and of which the jig is a typical one. The workman puts the jig, containing the work, under a drill press. The jig has two hardened steel bushings on this end, and a drill is driven through these holes so that all that the workman has to do is to see that the drill goes into these bushings, whereupon the holes are located in the right places. The piece of work on which this jig is used is based upon drawings dimensioned in the English inch and its decimals, next upon gauges, also based upon the same measurements and then upon the jig.

Finally, in many cases where great accuracy is required, as in the case of repetition work, it is tested by a gauge. Every one of these pieces, after it is made in machines of this kind, is put into this test gauge, by a workman or inspector, who then holds it up to the light to see that it touches at the testing points, and if it does not, it is rejected as imperfect. It is this vast equipment of gauges and tools of the most expensive and elaborate character which forms the foundation of American mechanical industries, that enables us to make that product with the economy that we do, and thereby we are enabled to sell it in the markets of the world. This equipment would not be obliterated; we have got to keep it for a hundred years yet in order to make repairs to existing machines. But all of it would have to be duplicated with another equipment, of identical character, changed minutely in dimensions in order to bring it to metric units, if we change to the metric system of measures of length.

MR. CANDLER: Do you know of any demand on the part of people engaged in practical business in this country who are asking or demanding this change?

MR. TOWNE: Not one. Why should they ask for it? It is open to them to-day to use the metric system.

MR. TOWNE: What should be done? What I hope your committee may decide to do is to introduce a bill for the creation of a National Commission on standard measures of length, weight and volume. The commission so appointed should be authorized to make a report as to what, in the light of all the evidence it can collect, is the most expedient thing to be done with our national standards.

CONGRESSMAN GAINES: Why should we do anything, if everybody is satisfied?

MR. TOWNE: There are some of our measures which could be improved. I think our three measures of weight could be unified into one, with little disturbance. I think our measures of volume could be united into one, and harmonized with the English system. Measures of weight and of volume relate practically to the present and the future. They have little to do with the past. But measures of length, in the language of one of the persons who has written on this subject, "are linked irrevocably to the past." You cannot obliterate them. You may compel manufacturers to submit to confusion, where we now have uniformity, and to incur an enormous expense in duplicating their standards of length; but you cannot obliterate the existing system. "It is linked irrevocably to the past."

ILLUSTRATIONS

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

SUGGESTION FOR AN IMPERIAL MONUMENTAL HALL AND TOWER AT WESTMINSTER, LONDON, ENG. MESSRS. J. P. SEDDON AND E. B. LAMB, ARCHITECTS.

THIS plate is copied from the *Builder*.

CORINTHIAN CAPITAL OF THE THOLOS AT EPIDAURUS, GREECE. MEASURED AND DRAWN BY MR. CHARLES S. KAISER, NEW YORK, N. Y.

SEE article elsewhere in this issue.

ORDER OF THE THOLOS AND GENERAL PLAN OF THE HIERON OF ÆSCULAPIUS AT EPIDAURUS, GREECE, AS RESTORED BY M. A. DEFRASSE.

THIS subject is copied from *l'Architecture*.

PORTAL TO THE COLLEGIATE CHURCH AT ST. URSANNE, IN THE BERNESE, JURA, SWITZERLAND.

This subject is copied from *Schweizerische Bauzeitung*.

BOARD OF TRADE BUILDING, DUSSELDORF, PRUSSIA. HERR H. VON ENDT, ARCHITECT.

THIS subject is copied from *Deutsche Bauzeitung*.

Additional Illustrations in the International Edition.

"THE BUFFALO DANCE": LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO. MR. SOLON H. BORGLUM, SCULPTOR.

THE CALIFORNIA STATE BUILDING: LOUISIANA PURCHASE EXPOSITION.

SUNKEN GARDEN BETWEEN THE MINES AND METALLURGY BUILDING AND THE LIBERAL ARTS BUILDING: LOUISIANA PURCHASE EXPOSITION.

A CARTOUCHE: LOUISIANA PURCHASE EXPOSITION. WIEHLE, SCULPTOR.

NOTES & CLIPPINGS

THE SOUTH CAROLINA TIN MINES. — The newly-discovered tin mines at Gaffney, S. C., bid fair to prove much richer than was at first thought. Shafts have been sunk to a depth of 50 feet, and the report is that "the deeper the shaft goes the richer the deposit is found to be." One expert expresses the opinion that the mines will prove to be the richest of their kind in the world. Machinery is being established for the working of several tons of ores per day. — *Boston Transcript.*

BALTIMORE BRICK. — An examination of the ruins in Baltimore will show that of all material none stood the fire better than the Baltimore red brick. In the more modern buildings stone of various kinds, granite, marble and the whitish variety of brick, made chiefly, we believe, of

material found in the West, and concrete in one building, at least, were used, and in the intense heat all, of course, suffered, but the red brick, it is believed, least of all. It has been estimated that perhaps twenty per cent of old brick can be used in rebuilding in work on inside walls, which will amount to considerable in the way of saving. It is admitted that in the residence section red brick has been too freely used, giving the effect of too great uniformity, but in the business district affected by the fire this was not so much the case. As to durability, this brick is perhaps the equal of almost any material. There is a dispute as to whether some of the old Colonial churches still in good condition in Eastern Virginia were built of brick brought from England, but it is certain that they were most substantially constructed. This brick corresponds closely to what used to be called "Baltimore pressed brick," and is a splendid specimen of material. Some of these churches date back to early in 1700 and a few were constructed still earlier. The best quality of Baltimore-made brick, it is believed, is quite as good as these old specimens. — *Baltimore Herald.*

WIRE ROPE FROM POMPEII. — It is not an uncommon thing in this age of advancement in industrial and engineering matters for the present-day engineer to assume that he knows much more than his ancient brother, and while this is true in many things, it frequently happens that an invention or appliance commonly believed to belong to modern times is found to have been known and used centuries ago. Ropes made of various kinds of fibre and leather are of very ancient date. Ropes of palm have been found in Egypt in the tombs of Beni-Hassan (about 3000 B. C.), and on the walls of these tombs is also shown the process of preparing hemp. In a tomb at Thebes of the time of Thothmes III (about 1600 B. C.) is a group representing the process of twisting thongs of leather and the method of cutting leather into thongs. The Bible tells us that Samson was bound with ropes and that the spies sent by Joshua into Jericho were let down in a basket, presumably by means of a rope. At Nimrud, Assyria, a carved slab showing the siege of a castle was found on which a soldier was represented in the act of cutting a rope to which a bucket for drawing water from a well outside the castle walls was attached. The wire rope is generally considered a modern invention, a product of modern skill, and it will surprise many to learn that its manufacture is really a rediscovered lost art. Although the Assyrians practised the art of wire-beating, no evidence has been found to indicate that they used wire for making rope. The excavations at Pompeii have, however, brought to light a piece of bronze wire rope nearly 15 feet long and about 1 inch in circumference. This rope is now in the Museo Borbonico at Naples. It consists of three strands laid spirally together, each strand being made up of fifteen wires twisted together and its construction does not, therefore, differ greatly from that of wire ropes made to-day. Pompeii was buried A. D. 79, 1,825 years ago, but how long wire ropes had been known it is impossible to tell, though, judging by the knowledge shown in the construction, it may be safely concluded that they had been known for a considerable time. The use to which these ropes were put are not definitely known, but further excavations may shed some light on the subject. As to the use of rope tramways, it is said that they were in use as early as 1644. — *Philadelphia Record.*

THE ST. LOUIS FAIR FIRE-DEPARTMENT. — Fire-fighting has been reduced to a science in a model system installed for the protection of the World's Fair at St. Louis. Tests have demonstrated the efficiency of the water-supply, and the organization of the fire-fighting forces. With a pressure of 175 pounds to the square inch, and a capacity for increasing this by one-half, each of the hose-rigged hydrants distributed over the grounds, on the roofs, and through the buildings is in itself the equivalent of a fire-engine. Twenty-four miles of water-mains, tested to 300-pound pressure, are distributed in the Exposition district. These are fed from the city mains, fourteen great pumps supplying the additional pressure. Should the city supply at any time be inadequate the Exposition pumps would tap the reserve store of 9,000,000 gallons in Laguna de Bay, the largest of lagoons or landscape waterways, with which they are connected by a 24-inch gravity pipe. Along this line of mains, entering every section of the grounds, are the hydrants and fire-plugs, each capable of supplying from one to four streams. Beside the large buildings standpipes have been built and from their tops deck turrets have command of the roofs. Inside fireplugs are at frequent intervals and automatic sprinklers have been provided. For every 2,500 square feet of space in the buildings there is a six-gallon Babcock fire-extinguisher and tank. Men whose business it is to watch for an outbreak of fire are constantly on hand to use the emergency equipment, pending the arrival of the firemen. Seven fire companies compose the regular Exposition force, but this is reënforced by twelve companies which may be called into service from the St. Louis Fire Department, and the full equipment of the Hale Fire-Fighting Corps, which has a concession on "The Pike." Forty expert firemen detailed from the city departments of Denver, Kansas City, Brookfield, Mo.; Chicago, St. Louis and New York form this combination, which furnishes daily exhibitions of feats in fire-fighting. — *Exchange.*

THE CYLINDER BOOKS OF BABYLON. — In addition to the flat tablet, the Babylonians and Assyrians wrote some of their books on large prisms and cylinders. Some of these cylinders are as much as 2 feet in length and 8 to 10 inches in diameter. Being made of the same material as the tablets they are necessarily heavy and cumbersome, yet they were in some ways more convenient for reading, since they were perforated longitudinally, and placed on a spindle, so as to revolve. In some cases the writing runs from end to end of the cylinder, which is then suspended horizontally. In other cases the cylinder is upright, the columns running from top to bottom. In the latter case the book is usually not a true cylinder, but a prism of six, eight or ten sides, each side inscribed with a separate column of writing like the page of a book. These prisms and cylinders were commonly selected by the kings to contain records of their deeds. Thus the British Museum contains prisms on which are recorded achievements of such famous conquerors as Sargon, Sennacherib, and the Elamite warrior Cyrus. The last-named cylinder has peculiar interest because it describes the taking of Babylon. — *Henry Smith Williams, in Harper's Magazine for May.*

THE CEMENT RESOURCES OF THE UNITED STATES. — During the field season of 1903 most of the cement-producing districts of the United States were visited by members of the United States Geological Survey, and data were collected for a report on the cement resources and industry of the country. The districts not visited in 1903 will be examined early in 1904, and a detailed report on the subject will be published as soon as possible. In the meantime, three papers on interesting cement districts have been prepared and published. One of these districts, in Pennsylvania, now produces about 60 per cent of the total United States production of Portland cement, while the other two, in Alabama and Virginia, which are at present only slightly developed, give promise of becoming important centres of production. — *N. Y. Evening Post.*

THE FIRST USE OF GAS. — Great was the amazement of all Europe when at about the close of the century William Murdoch discovered that gas could be used for illuminating purposes. So little was the invention understood by those who had not seen it in use that even the great and wise (?) men of the British Parliament laughed at the idea. "How can there be light without a wick?" said one member of that august body, with a wink and a knowing nod. Even the great Sir Humphry Davy ridiculed the idea of lighting towns and cities with gas. He one day asked Murdoch, "Do you mean to use the dome of St. Paul's for your gas meter?" Sir Walter Scott also made merry of the gas idea and of the coming attempt to "illuminate London with smoke from a tar factory." When the House of Commons was finally lighted with the new illuminant, the architect and custodian of the building, who imagined that the gas ran as fire through the pipes, insisted that they be removed several inches from the wall to prevent the building from taking fire! Several distinguished members were also observed carefully touching the pipes with their gloved fingers and then smelling of them to see if they could detect the odor of burned leather. — *Exchange.*

PRESERVATION OF AMERICAN PREHISTORIC RUINS. — The bill for the preservation of the prehistoric ruins on the public lands, which has recently been so strongly urged by representatives of archæological institutes and ethnological societies will not become a law at this session. Mr. Fulton of Oregon tried to rush it through the Senate recently, but Mr. Teller insisted that it should pursue more deliberate methods, and so it has gone to the calendar where there is no hope of its early rescue. These ruins consist chiefly of the palaces of cliff-dwellers and earthworks of mound-builders. They are now raided by private companies, whose purpose is commercial and the treasures carried off. Often an important part will in this way be removed, leaving what remains for the purposes of the antiquarian much like an old book with its titlepage torn out. The plan is to authorize the Secretary of the Interior to set apart certain of these ruins for public use and enjoyment permanently, appointing a custodian to take care of them. From the smaller ruins he may allow learned societies and well-established museums to collect specimens of prehistoric American works. Commissioner Jones of the Indian office is a strong believer in this measure, as are most of the people who have travelled through Colorado and the enchanting lands of the Southwestern desert. — *Boston Transcript.*

ELECTRIC ROAD UP VESUVIUS. — "Visitors to Naples," says the *Electrical World and Engineer*, "familiar with the old Funicular Railway that for twenty-three years has been in operation on Mount Vesuvius, will welcome the news that the long and dusty drive from Naples to the old station has at last been obviated by the opening of a new electric railway. The starting point of the new line, which has been constructed for Thomas Cook & Son, the tourist agents, is at Pugliano, where connection with Naples by electric cars is made. The length of the railway, exclusive of the old line up the cone, is 4.7 miles, and it is divided into three sections. The first and third sections are ordinary lines; the second section is a rack railway, with an incline as great as that of the famous Rigi Railway, in Switzerland. The cars of this section are pushed up by a powerful four-wheeled electric locomotive, fitted with an elaborate system of ordinary and emergency brakes. The current throughout is picked up by overhead trolleys. At the Hermitage the Cooks have built a hotel, near the famous Royal Observatory. The new line makes the trip from Naples to Vesuvius a much more speedy and comfortable journey than it has hitherto been."

A BISHOP'S CANONICALS. — The remarks published recently about the Bishop of Oxford's safe use of the cope and the Bishop of London's more daring use of both mitre and cope remind me of the controversy when a monument was being erected to Bishop Christopher Wordsworth of Lincoln. It was decided to have a recumbent figure of the bishop. But how was he to be dressed? All agreed that he should have a cope and that a crozier should be in his hand, but there were two opinions as to the mitre. The realists would not hear of a mitre on his head, as he had never worn one in life. The idealists ardently desired it as an expressive symbol. At last an ingenious peacemaker suggested that, after the manner of monumental knights who have their casques at their feet, the bishop should have the mitre not on his head, but at his feet. "A capital idea," exclaimed Canon Sutton: "then we'll put his boots on his head, and that will be *very* expressive." — *Manchester Guardian.*

S. J. PARKHILL & Co., Printers, Boston, U. S. A.

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FROM "THE BUILDER."

SUGGESTION FOR AN IMPERIAL MONUMENTA

BY MR. J. P. SEDDON, F. R. I. B

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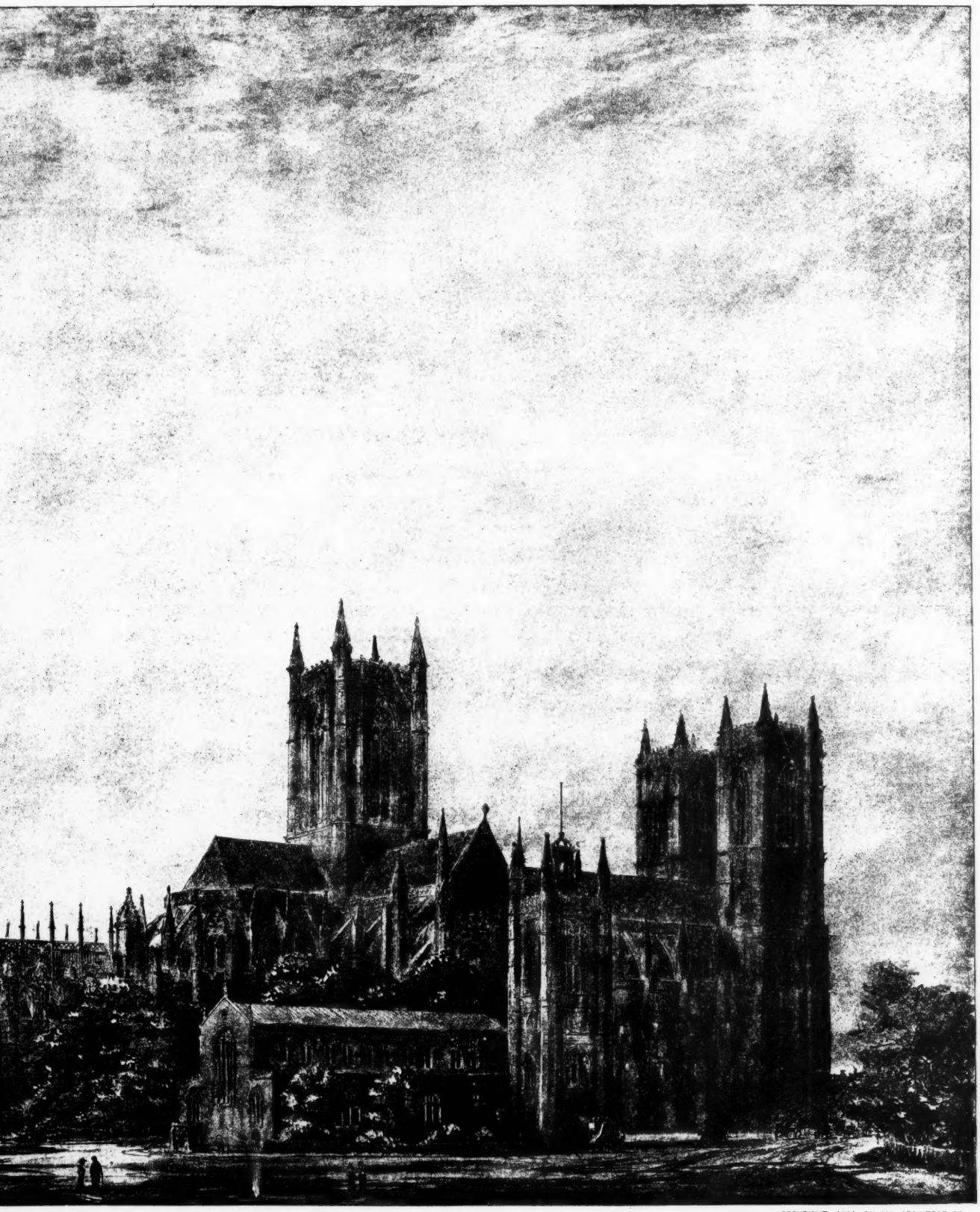

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MENTAL HALL AND TOWER AT WESTMINSTER.
. R. I. B. A., AND MR. E. B. LAMB.

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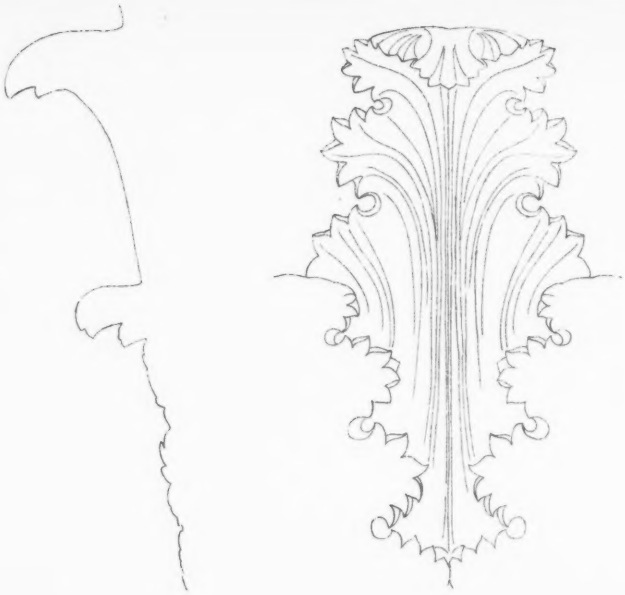

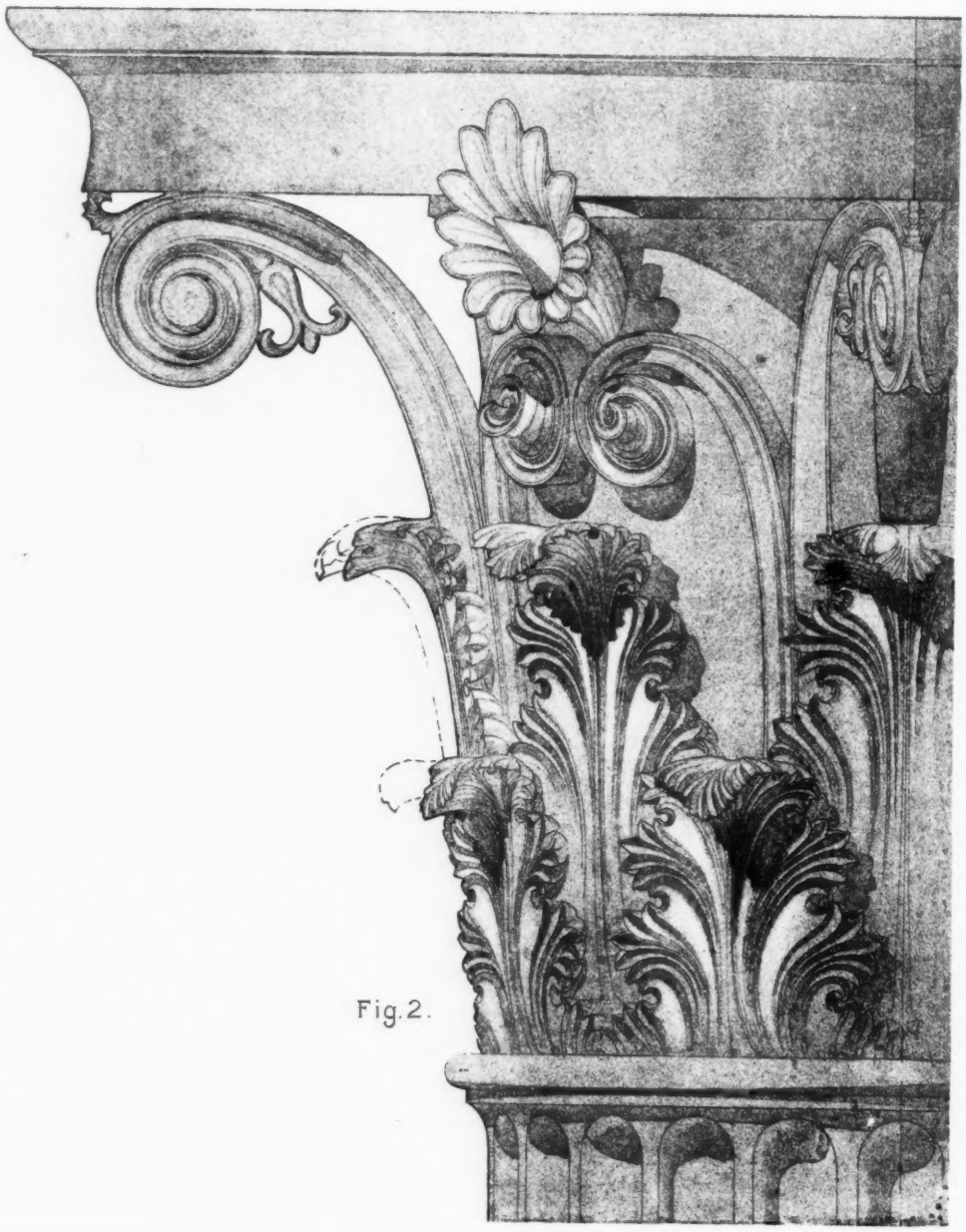

Fig. 2.

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CORINTHIAN CAPITAL OF THE TH

MEASURED AND DRAWN BY CH

HELIOTYPE CO., BOSTON.

OF THE THOLOS AT EPIDAURUS.
AWN BY CHARLES S. KAISER.

The American Archite
May 7, 1904.
No. 1480.

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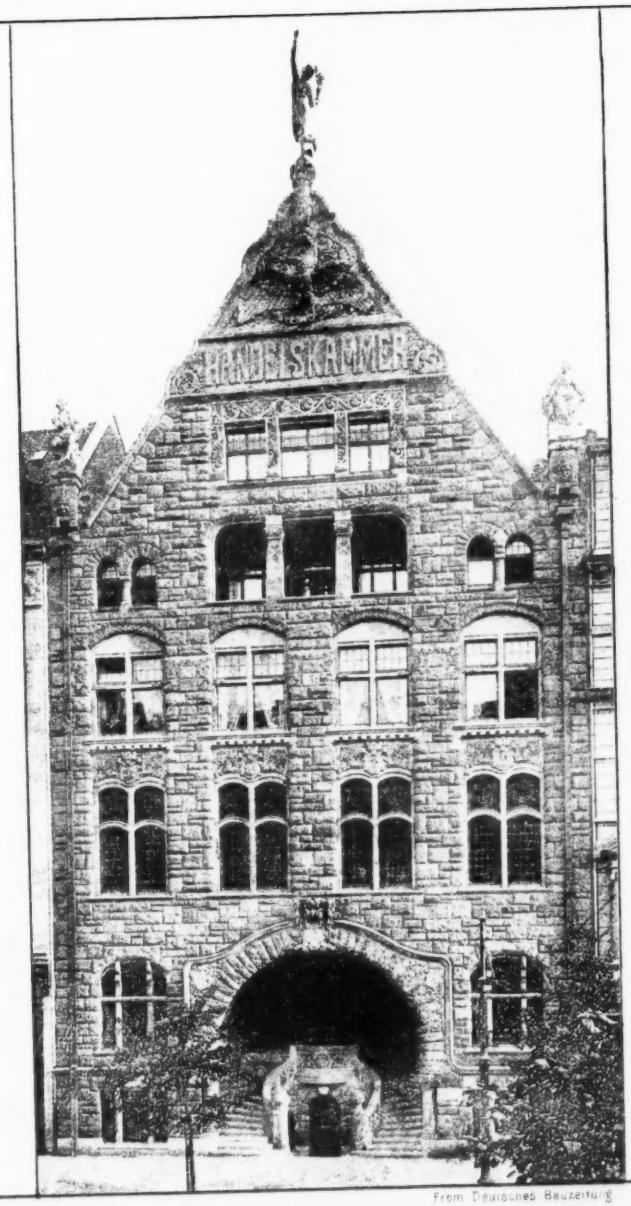
From Schweizerische Bauzeitung

PORTAL TO THE COLLEGIATE CHURCH AT ST. URSANNE, SWITZERLAND.



From Deutsches Bauzeitung

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H. VON ENDT, ARCHITECT.

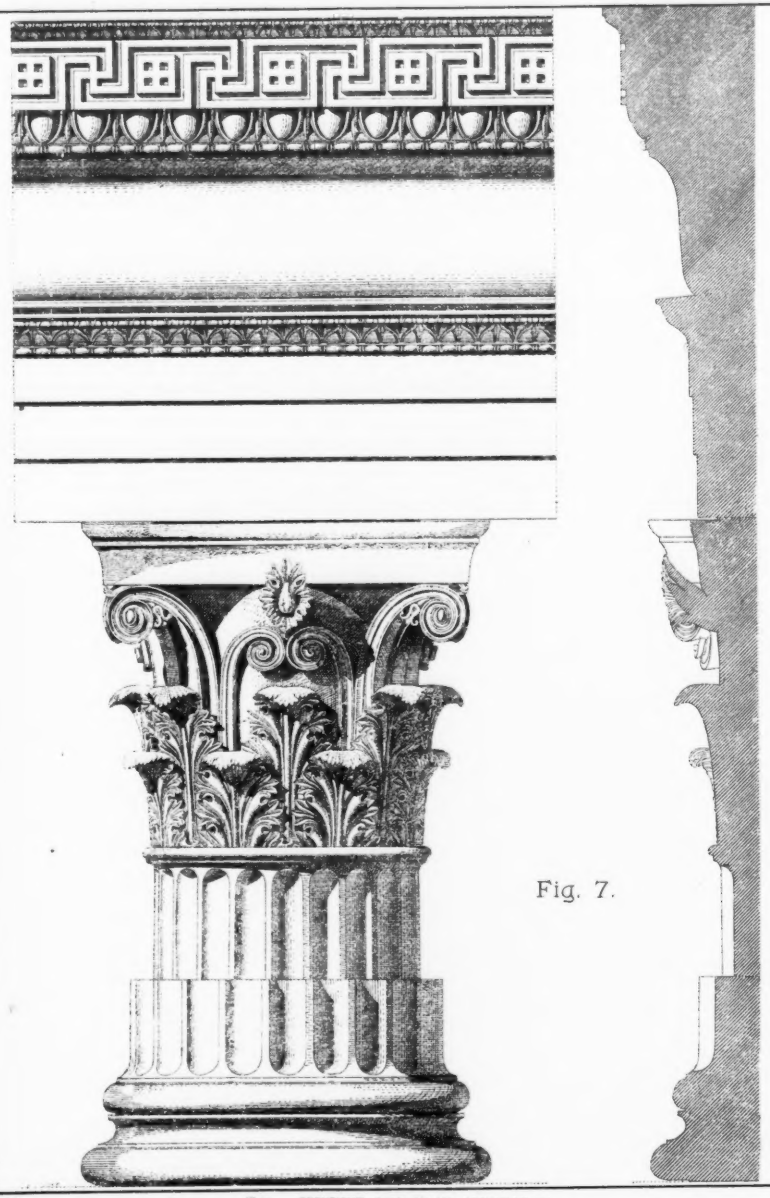

Fig. 7.

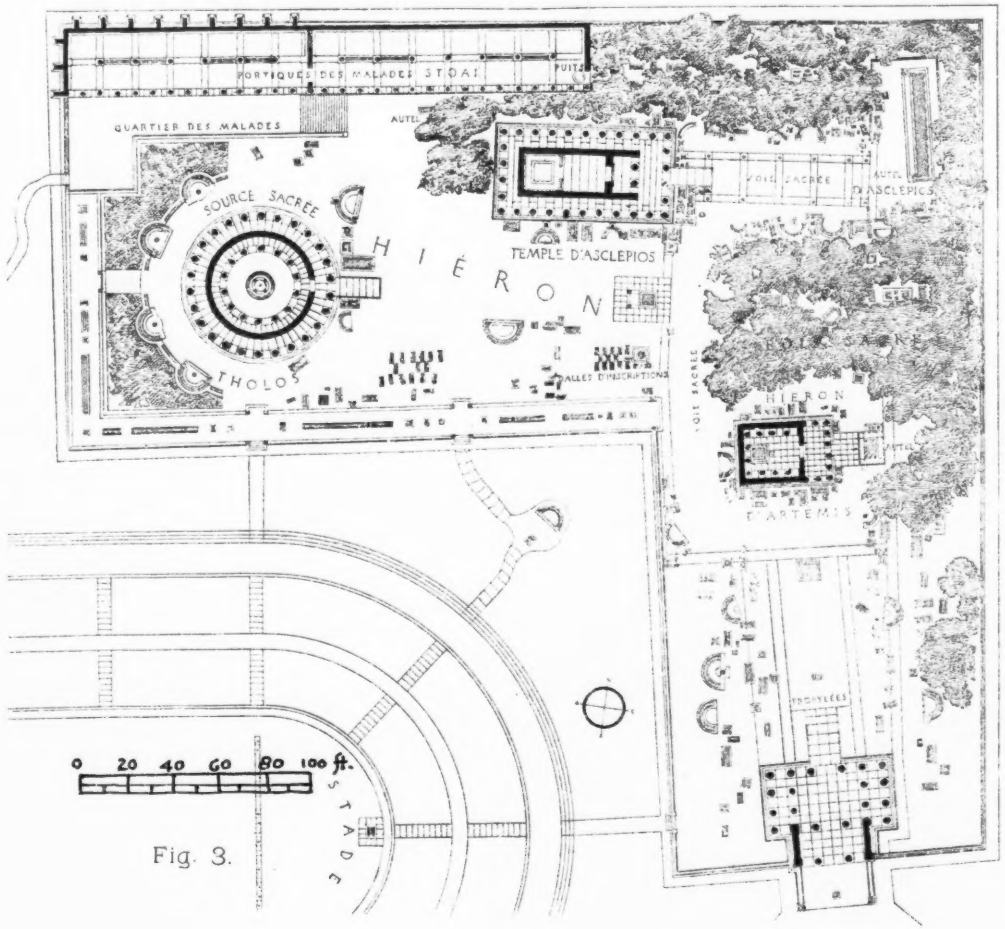

Fig. 3.

ORDER OF THE THOLOS AND GENERAL PLAN OF THE HIERON OF AESCULAPIUS AT EPIDAURUS.

RESTORED BY M. A. DEFRASSE.

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The American Architect
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A Cartouche: Louisiana Purchase Exposition, St. Louis, Mo.
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THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT

No. 262 SATURDAY, MAY 7, 1904 VOLUME LXXXIV No. 1480

RUFUS THE ROOFER.

"I WENT into a shirt store the other day to buy a shirt. I am not what you call a society leader, but now and then I do dress up. I looked over a lot of shirts at ninety-eight cents, but they did not seem to suit me, so I pointed to some shirts which were displayed on the stand and said to the salesman: —

"'Now, I like those very much.'

"'Oh,' replied the salesman in a tone as if it settled the question, 'those shirts are two-fifty.'

"I didn't say anything, but I walked out of that store. The man who starts in by assuming that his goods cost too much for his customer will never sell very many of them.

"If the Taylor people took it for granted that their tin was too high-priced for most people, most people would think it was too high-priced for them.

"As a matter of fact, this question of price is all a matter of quality. A price which is high for some goods is low for others. It depends on how good the goods are.

"If 'Taylor Old Style' tin were not just what it is, the price would be high, but being the best roofing tin that can be made, it is low. No matter how good other tins may be, no matter how long they may last, 'Taylor Old Style' tin is better and lasts longer. They have the documents to prove it, and my own experience bears them out.

"It seems to me that people are getting kind of scared of other sorts of roofing besides tin, no matter how pretty they look. Tiles, gravel, tar, composition, shingles, all of them are dangerous. Look at the Baltimore fire. The gravel-and-tar roofs burst into flames. The only thing that checked the fire was the tin roofs, and if there had been more of them there would be more Baltimore to-day, and after all a tin roof is just as artistic in the best way as any roof.

"I heard a college professor say that the Greek people, in order to make a thing useful, didn't find it necessary to make it ugly. It seems to me the ugliest thing I know is a leaky roof, on the theory that 'handsome is as handsome does.'

"A roof made of honest 'Taylor Old Style' tin is a work of art because it is honest and serviceable to begin with.

"The real reason the old fashioned furniture of our grandfathers appeals to us so much to-day is because it was so well made. It was so honest and real and true that it satisfies us the longer we live with it.

"We have been through a cheap and jim-crack period the last few years. The things that are left over now are the things that are worth keeping. We are getting to where we want simpler things, but things that give actual service. We want our houses to be built of raw material that lasts.

"I do not know any quality in a house that seems more inconsistent than flimsiness. A building should be more or less permanent, and the roof is part of the building. Tin that lasts, tin that is as much a work of art as the Chippendale or Sheraton furniture inside the house, is the proper finishing off of a house.

"It is not often that I branch out into art talk, but I believe these things are so. If you kind of chew these things over in your mind a little, you will, like as not, find I am right."

RUFUS, THE ROOFER.

TAPESTROLEA DECORATIONS.

WITH the view to presenting to the intending house builder suggestions regarding the use of their burlaps and canvases, the Richter Mfg. Co., of Tenafly, N. J., has issued an attractive booklet that will also interest architects and builders who frequently find difficulty in presenting to their clients the effect of interior decoration plans.

It is entitled *Tapestrolea* and contains useful suggestions illustrated in half-tone. It is without doubt the handsomest booklet issued on decorative subjects.

It is intended for general distribution in connection with the extensive advertising campaign of the company. A copy will be sent free on application.

AMERICAN vs. RUSSIAN TIME TABLES.

HOSTILITIES in the East having drawn particular current attention to the Trans-Siberian Railroad, examples of American railway performances, as compared with Russian schedules, are interesting.

The following is schedule of fast run made by Chicago & Alton Railway special train carrying Mr. Pabst, the prominent brewer, and his party, Chicago to St. Louis, February 13, 1904.

Left	Chicago,	2.43 P. M.
Arrived	Joliet,	3.35 P. M.
"	Bloomington,	5.24 P. M.
"	Springfield,	6.38 P. M.
"	St. Louis,	8.55 P. M.

Elapsed time six hours and twelve minutes, which included stops of seven minutes for train orders, six minutes in changing engines, eight minutes for obtaining water, and one minute on account of being held by adverse signals. Total time lost by necessary stops, twenty-two minutes, which, subtracted from elapsed time, gives a net running time of five hours and fifty minutes for the 283 miles.

If the above Chicago & Alton schedule were maintained, and American long-distance runs have proved it feasible, from Moscow to Vladivostok, the time for the 5,320 miles would be five days, against Russian schedule of eighteen days for their fast trains, and a month for their accommodation trains. It is safe to say that under war pressure, the Chicago & Alton and many other standard American railways could maintain an uninterrupted six days' schedule between Moscow and the Russian front.

PAINT — ALGONQUIN RED, ALGONQUIN OLIVE.

ALGONQUIN Paint has been used for nearly a quarter of a century. It is a natural paint. The basis of it is slate rock. Its chief ingredients are most enduring materials — silica, alumina and peroxide of iron. It contains no acid, lime, or gypsum. It will wear better than any other paint on earth. A surface covered with it receives a hard, firm coating that, in time, seems to become not merely a coating, but a part of the material to which it is applied. Many reds are red at first, but what at last? Algonquin red is red at first and red at last — it begins red, it stays red. Being a light pigment, it spreads easily. There is small bulk in a pound of lead; there is big bulk in a pound of Algonquin; hence a pound of Algonquin will go farther than a pound of lead. Then, too, it costs less than lead. It is furnished in dry form, in the form of paste, or liquid ready for the brush.

For roofs of any kind — iron, tin, shingles, etc., — it is without an equal. It is likewise desirable for structural steel, factories, etc. It seems to have a natural affinity for tin and iron. As a priming coat for other colors it is exceedingly valuable. One manufacturer advertises that his paint gives "the appearance of slate." Algonquin paint *is* slate. It is not an imitation. It is the genuine article.

"Of the various preservatives that we have used for structural iron, we consider Algonquin Red and Algonquin Olive as the best." — *Norcross Brothers, Contractors, Boston, Mass.*

NOTE.

DURING the present year, and probably for a term of years, cotton is likely to be very high.

(*Continued on page 4.*)

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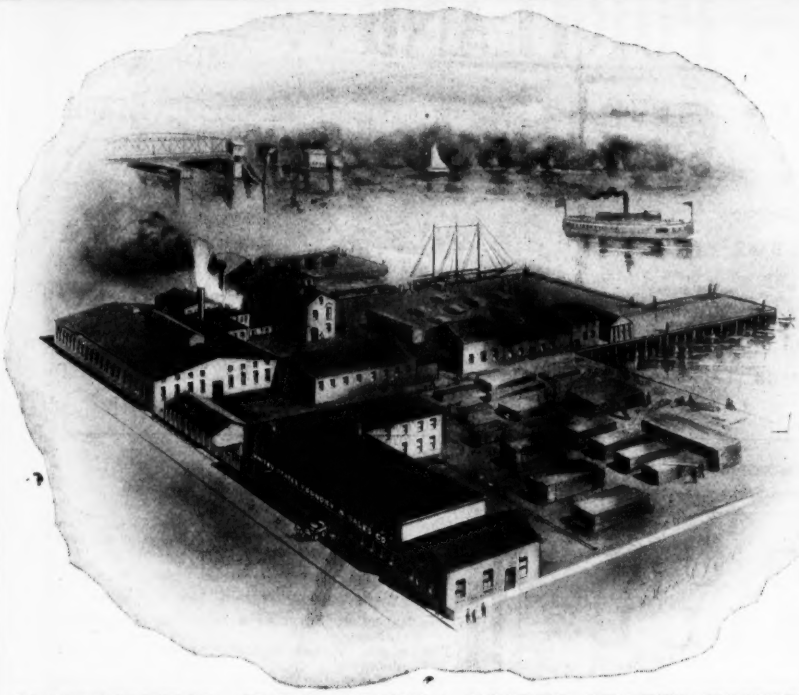

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SECTION 2. A Member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SECTION 3. No Member should be a party to a building contract except as "owner."

SECTION 4. No Member should guarantee an estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer drawings or other services "on approval" and without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

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SECTION 11. No Member should submit drawings except as an original contributor in any duly instituted competition, or attempt to secure any work for which such a competition remains undecided.

SECTION 12. The American Institute of Architects' "schedule of charges" represents minimum rates for full, faithful and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

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SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.

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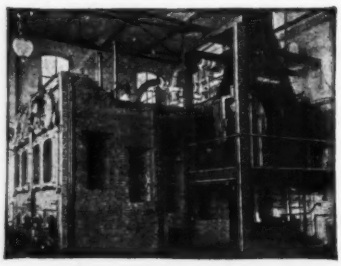

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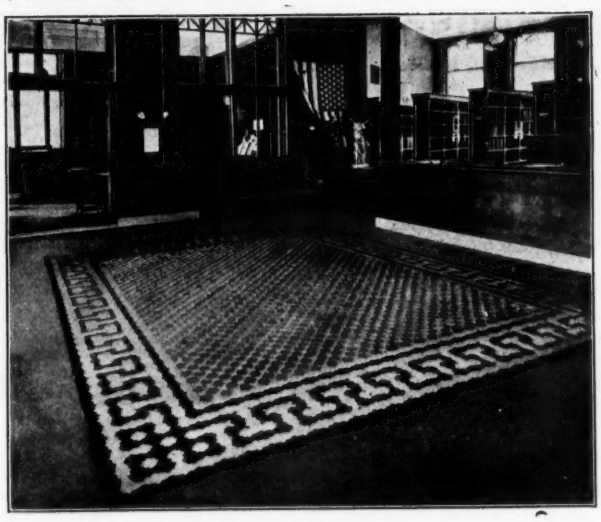

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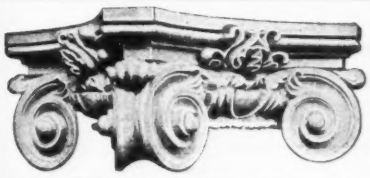

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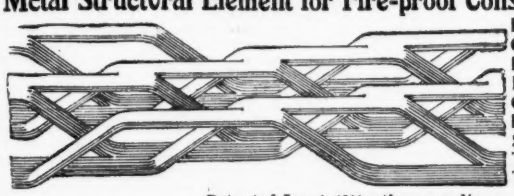

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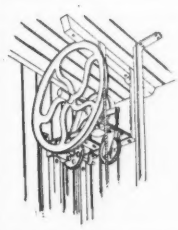

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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News)

[*Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.*]

ADVANCE RUMORS.

Aberdeen, Mass. — A lot of land on Colonial Road, situated on the corner of Wallingford Road, containing 10,000 square feet, has been sold recently to a purchaser who will erect a handsome colonial house containing all improvements.

Allston, Mass. — The Boston Elevated Railway Co has bought from Henry M. Whitney a parcel of land containing 30,000 feet, located in the rear of the company's car barn on Braintree St. The purchase was made that available land might be had for the extension of the car-house when necessary.

Auburndale, Mass. — The celebrated Woodland Park Hotel property has changed owners, having passed from the possession of Charles F. Kidder, trustee in bankruptcy of the estate of Charles C. Baker, to Edwin B. Jackson and Frederick Johnson, mortgagees, who in turn have deeded it to Frederick Wilkey. The new owner will make extensive improvements.

Beverly, Mass. — A press report states that the Noble House on Wallis St. is to be torn down to make room for a new block to be erected by Joseph F. Appleton, of Salem, the owner of the property. The new block will be one-story high and fitted up for store purposes.

Boston, Mass.—Agreement papers have been signed for the sale of a number of estates on Hanover St., not far from Washington St., the purchaser being a prominent estate, which buys for improvement in the near future.

A lot of land on Salisbury Road, between Kilsyth Road and Corey Road, has been purchased by Thos. C. Raymond. Mr. Raymond will improve at once with a handsome building.

Lawrence Bond has purchased a lot of vacant land on Coventry St., near Columbus Ave., South End. The new owner will improve.

The Episcopal Theological School trustees have acquired title to the three-story and basement brick and stone dwelling numbered 189 Beacon St., at the corner of Clarendon St. The purchasers buy for occupancy and will make a number of extensive improvements to the building.

Brookline, Mass. — Jacob W. Pierce has purchased a lot of 11,000 square feet of land, situated at Dean Road in the Fisher Hill section, it being the intention of the purchaser to improve the land with a handsome house for his own occupancy.

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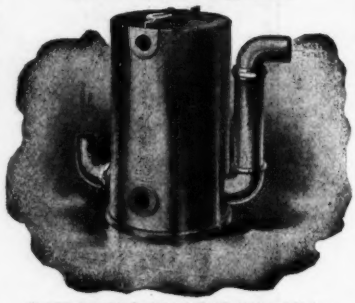

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BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Cambridge, Mass. — The H. P. Cummings Co. has been awarded the contract for Lever Brothers' soap factory to cost $80,000.

Central Falls, R. I. — The common council has appriated $35,000 for a new 8-room school-house on the west side.

Chicago, Ill.—A. F. Pashley has made revised plans for the St. Joseph Provident Orphan Asylum Sisters for a fireproof hospital to be built at N. 40th Ave. and George St. It will be four stories high, of concrete construction, with exterior of paving brick, and will cost $80,000.

It is said that Professor Bischriever of St. Ignatius's College and others are raising funds for the construction of a Belgian Roman Catholic Church at Western and Fullerton Aves. It is expected that $30,000 can be collected in a short time and work of construction begin this summer.

St. John the Baptist Roman Catholic congregation will build a new church at the southwest corner of 50th Pl. and Peoria St., after plans by J. T. Fortin. It will be a stone structure, 70′ x 125′, with tile roof, and will cost $75,000.

Plans have been prepared by William J. Brinkmann for a chancellery building to be built on Cass St., adjoining the rectory of Holy Name Cathedral, at N. State and Superior Sts. It will be a three-story structure, 38′ x 48′, of stone construction. Cost, $20,000.

It is reported that the Casino Club will erect a new club-house at Edgewater and Winthrop Aves. It will be a two-story frame structure with wide verandas on three sides, and will cost $20,000.

George Clothier, Jr., has prepared plans for a new church for the congregation of the Nazarene. It is to be a stone and brick structure, built at the northeast corner of Saratoga and W. Monroe Sts. Cost, $30,000.

J. B. Walkes plans the erection of two $70,000 apartment-houses on the north side.

A big vaudeville trust has been formed under the name of the Western Association of Vaudeville Managers, and a half-million dollar theatre for vaudeville, surpassing in cost and luxury any of the present playhouses in Chicago, is to be erected in this city. Work on the new playhouse will begin at once, and its completion is promised within six months. Site is not yet made public.

Cincinnati, O.—Gustave Drach has completed plans for the nurses' home, which is to be built by the Board of Managers of the Jewish Hospital in Burnet Ave. It will be three stories, brick, with stone trimmings.

Gustave Drach is receiving bids for the construction of the Harrison Building, on the site of the Pike fire.

Boll & Taylor, architects, have completed plans for a $25,000 warehouse for the Diem & Wing Paper Co., which is to be built in Eggleston Ave. during the summer.

The Anderson Fish and Poultry Co. will erect a $15,000 cold storage plant in the West End this summer.

Tietig & Lee have closed bids for the new Jewish Temple to be erected in Main Ave. for the congregation of the Mound Street Temple. The cost is estimated at about $250,000.

Columbus, O.—Eight building permits for two-story brick houses to be built on Mt. Pleasant Ave., between 1st and 2d Aves., have been taken out by S. A. Sharp. He will let the contracts and push the erection work rapidly.

On a lot fronting on High and extending back to Starr Ave., a three-story store and apartment building will be built for A. G. Wyatt, at an estimated cost of $40,000.

Dedham, Mass. — The James H. Prince heirs have sold the homestead estate on East St., consisting of a house of 10 rooms and other buildings, and about 10 acres of land, to Frederick I. Pratt, of Boston, who will make extensive alterations and repairs, and will occupy for a home.

Detroit, Mich. — Stevens & Blume have planned a three-story building, 59′ x 105′, for Thomas Rocho, to be built at the corner of Maple and Chene Sts. There will be five stores on the ground floor, and five flats each on the second and third stories. The

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BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

building will be constructed of paving brick on its street fronts.

Seven two-story houses will be erected on the north side of the Boulevard, near Beaubien St., by Matthew and Jos. V. Finn, from plans by Baxter & O'Dell. They will be frame, with brick foundations, stained shingle roofs, furnaces, and other modern improvements. Cost, $25,000.

Dorchester, Mass. — Emma Wickwire has taken title to a parcel of land on Tonawanda St., near Waldeck St., containing 4,500 feet. The buyer will immediately improve the property by the erection of a dwelling.

Jersey City, N. J. — Butler Bros., Chicago, have engaged Jarvis Hunt to design for them a large warehouse to be built here at a cost of $600,000. It will be an eight-story structure, 200′ x 400′, and will be built in three fireproof sections, provided with the latest labor-saving devices.

Lewiston, Me.—The contract to erect the parochial school building has not yet been let. The proposed building will be 63′ 6″ x 91′, and will be two stories high. The plans were drawn by Messrs. Coombs & Gibbs.

Los Angeles, Cal.—A tract of land east of the Long Beach pier extending about 2,000 feet along the beach and 426 feet toward the bluff has been sold for the Seaside Water Co. to George E. Hart and W. S. Collins for $100,000. The property will be divided into 100 lots and a large hotel will be erected on a part of the site.

Negotiations are pending for a 50-year lease of the southwest corner of 6th and Hill Sts., the former property of the First Congregational Church. It is proposed to erect a modern office building or an exclusive apartment hotel upon it. In either case the building will be six or seven stories in height and cost from $300,000 to $400,000, it is said.

This city is to have a new hospital, the Angelus, from plans prepared by John C. Austin, architect, and involving the expenditure for buildings and grounds of about $150,000. The hospital will occupy the entire block between Washington and 20th Sts. on Trinity. Work will begin as soon as bids shall have been received on which an award can be made. The contractors are making estimates.

I. W. Hellman will expend $56,033 in the erection of a five-story and basement block on Main St., between 4th and 5th Sts. Plans for the structure will be furnished by Morgan & Walls. The five-story building to be erected by Mr. Hellman will occupy ground 60′ x 158′, and will be built for a store with lofts above.

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THE AMERICAN ARCHITECT AND BUILDING NEWS

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Manchester, N. H. — All bids on the proposed new county courthouse have been rejected, the reason being that the bids called for an expenditure of $15,000 more than the appropriation.

Mason City, Ia.—The corner-stone of the new high-school building for this city was laid recently. The new building will be thoroughly equipped for modern methods of teaching and will cost $75,000.

Milwaukee, Wis. — A permit has been issued for the new office-building to be erected by the North-western National Insurance Co. at the corner of Jackson and Wisconsin Sts. at a cost of $120 000.

A building permit has been issued for the $60,000 boilerhouse and smokestack to be built by the Blatz Brewing Co. at the northeast corner of Market and Johnson Sts.

A permit has been issued to Gimbel Brothers for a new store building on Grand Ave., between 3d and 4th Sts., to cost $19,000. Ferry & Clas, archts.

H. J. Esser has prepared plans for the erection by the Milwaukee Electric Railway and Light Co. of a five-story brick addition, 85′ x 150′, to the Commerce St. plant of the company. The improvement will mean the tearing down of the old Medbury & Stevens stone mill, a Commerce St. landmark. The cost of the proposed building and plant will be $400,000.

Plans have been prepared by Fred Graf for the erection of a double residence building for B. W. Felthousen on Lake Drive, near Kenilworth Pl., to cost $15,000. He also has made plans for a double residence for John Meinecke on 10th St., near State, to cost $10,000.

Plans for the $10,000 library to be erected for Milwaukee-Downer College through the generosity of Mrs. H. A. J. Upham have been accepted by the College Board of Trustees and the Board is now ready to receive bids on the contract. The library is to be erected north of East Hall, a corridor connecting it with both East and Merrill Halls. The plans were drawn by A. C. Eschweiler, and provide for a building, 33′ x 73′, of red brick to correspond with the other buildings and of the same style of architecture. As soon as the contract is let the work of construction will be begun, it being expected that the new building will be ready for occupancy when the college year opens next September.

Monte No, Ark. — A new club-house hotel is to be erected at this place. The company has a capital of $250,000.

Nahant, Mass.—Foundations for the $40,000 school-building to be erected at Ocean St. and Valley Road are being laid. The building will be of brick and stone.

New Haven, Conn. — Joseph A. Jackson, of New York City, has completed the plans for the new church to be erected on Edwards St. by St. Joseph's R. C. Church. It will be a handsome structure, built of buff pressed brick with Indiana limestone trimmings.

F. A. Munson has taken out a permit to erect 5 cottage residences at 126-134 Canal St. They will each be 16′ x 25′.

Architect Richard Williams has completed plans for a new block to be erected in Chapel St. in the near future. It will be a frame structure arranged for four families, and provided with all modern improvements.

Newton Upper Falls, Mass. — The H. P. Cummings Co. has been awarded the contract for the Wade school buildings to be erected here at a cost of $65,000.

New York, N. Y.—The work of razing the old building now occupying the site of what is to be the new Produce Exchange Bank has begun. The location is at the corner of Broadway and Beaver St.

Plans have been filed for the group of new Fordham Hospital buildings to be erected by the city at Crotona Ave. and the Southern Boulevard. The structures will include the main hospital building, five stories in height, a four-story power-house, a two-story brick stable and morgue, and a five-story nurses' home. The total cost of these buildings will be $560,315. Plans by R. F. Almirall.

The plans for the new Bellevue have been made public. They provide for the largest hospital in the world, a magnificent building extending from 26th to 29th St. and from 1st Ave. to the East River. It will take ten years to finish the structure and it will cost $12,000,000. It will be constructed of brick and stone and will be fireproof. Bellevue Hospital now covers two city blocks. In order to construct the new building an additional block, the one bounded by 28th and 29th Sts., 1st Ave. and the river has been acquired. The building will be shaped like the letter H. A 300-foot terrace will extend from the front to the water. This will include long stone steps, a walk and artistically laid-out lawns and flower-beds. The new Bellevue will accommodate 2,500 patients. It is expected that ground will be broken within a month.

Northampton, Mass. — The proposed new Hawley grammar school building will be built this summer at an estimated cost of $85,000. It will be built in colonial style, after designs by E. C. and G. C. Gardner, of Springfield.

Paducah, Ky. — The contract for constructing the fire-station at 10th and Jones Sts. has been let to Acree & Niemann.

Pittsburgh, Pa.—Among the large building projects in progress or contemplated on Lincoln Ave., 21st Ward, the most important are the new home of the Sisters of the Good Shepherd, to cost $300,000, and the buildings of the Sisters of Divine Providence, to cost $200,000.

Port Huron, Mich. — The erection of a new hose house in the north end is being considered.

Riverside, Mass. — A movement has been started for the establishment of a fire-station at Tilton's corner.

Roxbury, Mass. — Mr. Charles J. Johnston has purchased a lot of land on the corner of Humboldt Ave. and Homestead St., Elm Hill. It is Mr. Johnston's intention to begin work at once on 3 apartment-houses, which will cost in the neighborhood of $10,000 each above the land.

South Boston, Mass. — Joseph Orlinski has bought the property numbered 258 and 260 Broadway, comprising two buildings, with two large stores and four modern apartments, with 4,080 feet of land. The purchaser buys for investment and will improve.

South Fitchburg, Mass. — The Shirreffs Worsted Co., which operates a mill at North Chelmsford, Mass., will remove to South Fitchburg. A mill will be erected at once.

St. Louis, Mo. — W. A. Rutledge has sold 600 feet of ground in East St. Louis to W. C. Carl which will be improved by the purchaser with eighteen 8-room brick dwellings.

Robert W. Morrison has purchased the property on the northwest corner of Olive St. and Taylor

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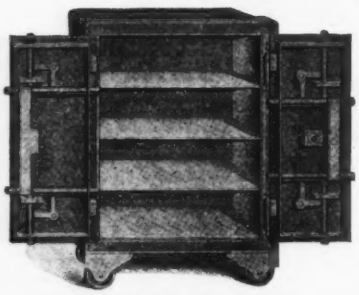

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BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Ave. Mr. Morrison has had plans drawn for the erection of a three-story store and office building on the corner, to cost $70,000.

Torrington, Conn.—The new government building to be erected here within a year will cost $30,000. It will be of brick with blue limestone base and trimmings, with terra-cotta cornices, and located at Water and Prospect Sts. Work of tearing down the old Holley building is nearly completed, and ground will be broken for the new building at an early date.

Waltham, Mass.—Ellen M. and Arthur G. Childs, executors of the estate of William G. Childs, have bought a parcel of land on the corner of Moody St. and Washington Ave., on which they will erect an apartment-house.

The Waltham Trust Co. has purchased land on Moody St., near Central Sq., on which it will erect a brick business block for its own occupancy.

Whitman, Mass.—Charles E. Holmes, of Malden, has bought of the Hiram Jenkins estate, 5½ acres of improved land with buildings situated on Franklin St. Mr. Holmes contemplates making many additions to the buildings and occupying the property.

HOUSES.

Cincinnati, O.—*Mooney St.*, bet. Madison & Erie Sts., two and one-half st'y bk. dwell.; $6,000; o., John W. Lee, 1317 Grace St.; a. & b., Carey & Zimmerman.

Eden St., bet. Corry & Oak Sts., two and one-half st'y bk. & st. dwell.; $5,000; o., Chas. Keyer, 1225 Main St.; a., Emil Reuckert.

McGregor St., bet. Nelson & Krause Sts., two and one-half st'y bk. & st. dwell.; $4,000; o., Boflinger & Hopkins, 540 Main St.; a., Philip Pfeiffer; b., C. E. Fox.

Oak St., No. 619, two and one-half st'y bk. dwell.; $7,000; o., D. F. Cash, Union Trust Building; a., Rapp, Zettel & Rapp.

Burdette St., bet. Woodburn & Ashland Sts., 2 two and one-half st'y bk. dwells.; $8,000; o., J. G. Cooper, Union Trust Building; a., A. E. Best; b., Cooper Bros.

Sedam St., No. 765, two and one-half st'y bk. dwell.; $4,000; o., Henry Krueger, 769 Sedam St.; a., M. Fischer.

COMPETITIONS.

CLUB-HOUSE. [At New York, N. Y.]
The American Societies of Mechanical, Electrical and Mining Engineers, and the Engineers Club of New York City, are proposing to erect adjacent buildings on 39th and 40th Sts. in New York City, for which the necessary means have been provided by the gift of Mr. Andrew Carnegie. Six firms of architects have been specially invited to prepare designs in competition for these buildings, and permission to do so will, at the discretion of the Building Committee, be granted to other architects who may apply for it. The buildings are to cost about $1,000,000, and the drawings on the scale of 16 feet to the inch are to be handed in by the 15th of June. Architects desiring to enter this competition will please address the undersigned, inclosing information as to their training and experience. Only those who have had for two years an established professional position will be acceptable as competitors. Respectfully, F. R. HUTTON, Secretary Engineering Building Committee, No. 12 W. 31st St., New York City.

COMPETITIONS.

MONUMENT. [At Toronto, Can.]
The Plans and Designs Committee of the South Africa Memorial Association invite competitive designs for a shaft with sculpture, to be erected in the city of Toronto. Particulars are to be obtained on application to SYDNEY H. JONES, Secretary, 28 Wellington St. West, Toronto. 1481

PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 30, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 31st day of May, 1904, and then opened, for new magnetic controlling device and new safety devices, etc., for the electric passenger elevator in the U. S. Court-house and Post-office, Scranton, Pa., in accordance with the specification, copies of which may be obtained at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1481

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 28, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 8th day of June, 1904, and then opened, for the tanks, pumps, piping, etc., for a crude petroleum burning plant for the boilers in the U. S. Post-office, Court-house, etc., at San Francisco, Cal., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at San Francisco, Cal., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1481

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 28, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 9th day of June, 1904, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post-office at Gloversville, N. Y., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Postmaster at Gloversville, N. Y., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1482

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 27th day of May, 1904, and then opened, for the low-pressure steam-heating apparatus, complete in place, for the U. S. Post-office at Waterbury, Conn., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Waterbury, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1480

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 26th day of May, 1904, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office at Waterbury, Conn., in accordance with the drawings and specifications, copies of which may be obtained at this office or at the office of the Superintendent of Construction at Waterbury, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1480

PROPOSALS.

BUILDING. [At Fort Warren, Mass.]
Office Constructing Quartermaster, 170 Summer St., Boston, Mass. Sealed proposals will be received **until May 24, 1904**, for furnishing all material and labor for construction, plumbing, steam heating and electric wiring of following brick buildings at Fort Warren, Mass.: One double set of captains' quarters, one double set of lieutenants' quarters, and one double set of N. C. staff officers' quarters. All information and necessary blank forms will be furnished intending bidders upon application to MAJ. JOHN E. BAXTER, Q. M., U. S. Army, Room 410. 1481

OFFICE BUILDING. [At St. John, N. B.]
Bids will be received **until May 20** by Jas. G. Taylor, Mgr. Canadian Bank of Commerce, for erecting a new office building here. 1481

BUILDING. [At Boston, Mass.]
Bids will be received **May 14** by Mordecai T. Endicott, Ch. Bureau Yards and Docks, Navy Dept., Washington, D. C., for constructing a brick dispensary building at navy yard here. Funds available, $11,300. 1480

POST EXCHANGE AND GYMNASIUM. [At Fort Huachuca, Ariz.]
Bids are wanted **May 16** for constructing a post exchange and gymnasium building at this post. Address LIEUT. COL. J. W. POPE, Ch. Q. M., Denver, Col. 1480

BUILDING. [At Norwood, O.]
Bids will be received **May 13** by W. E. Wichgar, City Aud., at office of J. A. Stewart, Rm. 813, Traction Building, Cincinnati, for $15,000 bonds to be issued for erecting fire department building and police station. 1480

MACADAM DRIVEWAYS. [At Fort Myer, Va.]
Sealed proposals for macadam driveways and concrete walks, near Post Exchange, will be received **until May 17, 1904**. Information furnished upon application. CAPTAIN G. C. BARNHARDT, Quartermaster. 1480

DAIRY BUILDING. [At Tomah, Wis.]
Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals addressed to the Commissioner of Indian Affairs, Washington, D. C., will be received at the Indian Office **until May 16, 1904**, for furnishing and delivering necessary materials and labor required to construct and complete a frame dairy building at the Tomah School, Wis., in strict accordance with plans and specifications and instructions to bidders, which may be examined at this office and at the school. For further information apply to L. M. Compton, Superintendent, Tomah, Wis. A. C. TONNER, Acting Commissioner. 1480

HOSPITAL. [At Fort Mott, N. J.]
Office Constructing Quartermaster, Delaware City, Del. Sealed proposals for constructing, plumbing, heating and electric wiring 12-bed hospital at Fort Mott, N. J., will be received **until May 16, 1904**. Information furnished here. LOUIS F. GARRARD, Jr., Capt. and Q. M., Dept. 1480

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PROPOSALS.

BANK BUILDING. [At Waterloo, Ia.]
Sealed proposals will be received by the building committee of the Commercial Building Co., of Waterloo, Ia., **until May 15, 1904**, for the construction of a six-story bank and office building at Waterloo, Ia., in accordance with the plans and specifications prepared by Liebbe, Nourse & Rasmussen, architects, Des Moines, Ia. Plans and specifications may be seen at the office of W. W. Miller, Waterloo, Ia., or at the office of the architects, Des Moines, Ia., after May 1, 1904. 1480

HEATING. [At Wheaton, Minn.]
Sealed bids will be received **until May 16, 1904**, at the auditor's office, Wheaton, Minn., for heating the Traverse County Courthouse, at Wheaton, Minn. Plans and specifications for the work may be seen at the County Auditor's office, in Wheaton, Minn., and at the Builders' and Traders' Exchange, Minneapolis. (Signed) ALFRED SETTERLUND, Vice Chairman, Board of County Commissioners. 1480

SEWER. [At Prescott, Ariz.]
Office Constructing Quartermaster, Whipple Barracks, Prescott, Ariz. Sealed proposals will be received at this office **until May 20, 1904**, for furnishing labor and material for the construction of a sewer. Plans, specifications and other information in this office and in the offices of the Chief Q. Ms., San Francisco, Cal., and Denver, Col. CHAS. C. WALCUTT, JR., Constructing Quartermaster. 1481

BUILDING. [At Portsmouth, N. H.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, **until May 21, 1904**, for constructing a two-story steel frame building, 90′ x 250′ in plan, at the navy yard, Portsmouth, N. H. Plans and specifications can be seen at the bureau or will be furnished by the commandant of the navy yard named upon deposit of $10 as security for their return. MORDECAI T. ENDICOTT, Chief of Bureau. 1481

COURTHOUSE. [At Fargo, N. D.]
Bids will be received by Co. Aud. Arthur G. Lewis **until July 20** for erecting a courthouse, to cost about $80,000. C. E. Bell, architect, Helena, Mont. 1481

MACHINE TOOLS. [At Portsmouth, N. H., Boston, Mass., New York, N. Y., League Island, Pa., and Pensacola, Fla.]
Proposals will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., **until May 24, 1904**, to furnish at the navy yards, Portsmouth, N. H., Boston, Mass., New York, N. Y., League Island, Pa., and Pensacola, Fla., as specified, a quantity of machine tools, etc., comprising lathes, pumps, planers, saw benches, saws, hydraulic press, gap punch, boring machine, etc. Blank proposals will be furnished upon application to the navy pay offices, Portsmouth, N. H., Boston, Mass., New York, N. Y., Philadelphia, Pa., and Pensacola, Fla. H. T. B. HARRIS, Paymaster General U. S. N. 1481

CHURCH. [At Madison, S. D.]
The Building Committee of St. Thomas Catholic Church, of Madison, S. D., will receive sealed bids for the construction of a church building at Madison, S. D., according to the plans and specifications on file at the Builders' Exchange, St. Paul, Minn.; the office of Anton Dohmen, architect, State and 3d Sts., Milwaukee, Wis.; the book store of L. McCarty, Sioux City, Ia., and the residence of Rev. T. A. Flynn, Madison, S. D. Bids will be opened at Madison, S. D., **June 1, 1904**. Bids sent by mail should be addressed to Rev. T. A. Flynn, Madison, S. D. Rev. T. A. Flynn, pastor. JOHN F. DALY, Secretary. 1481

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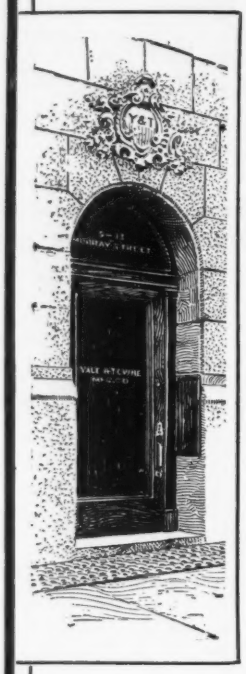

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