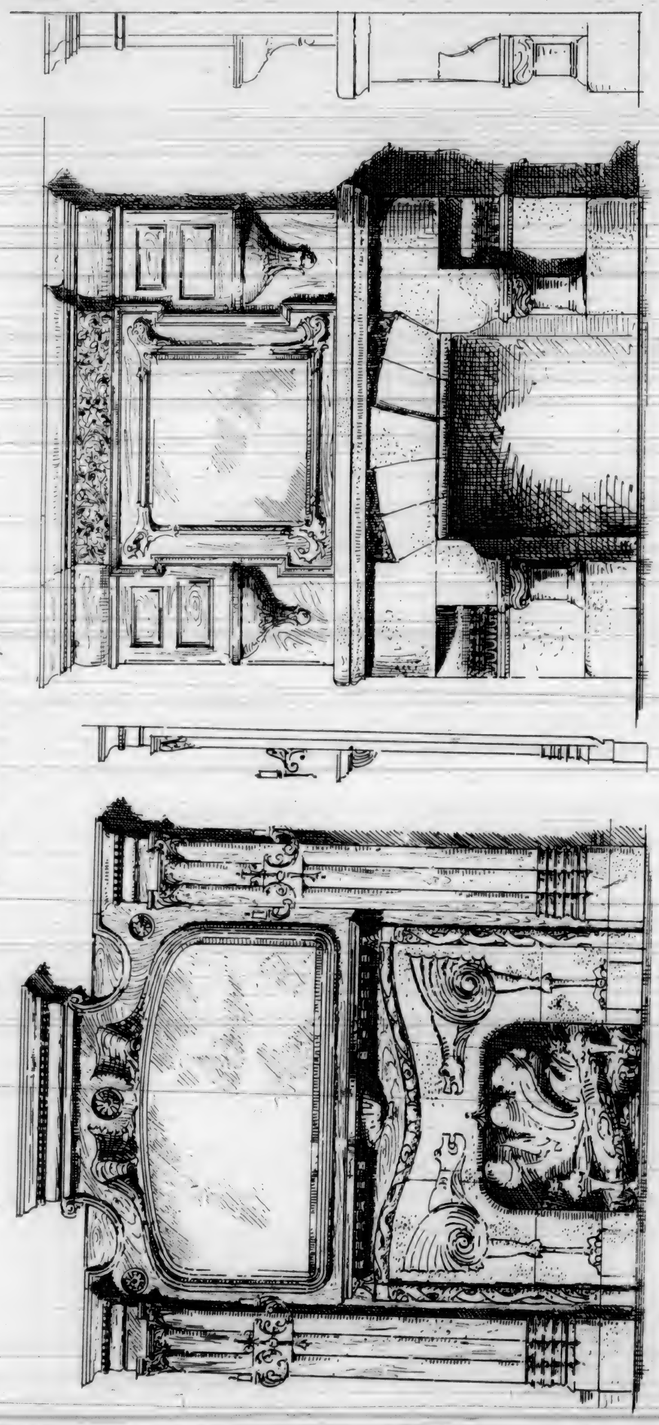
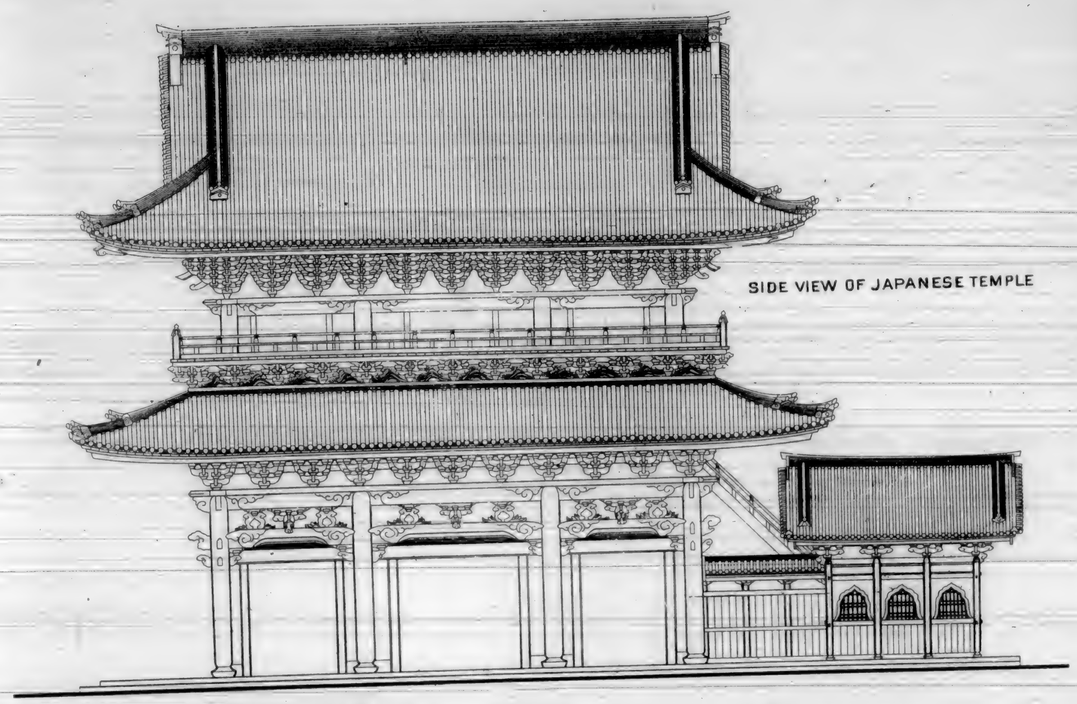
MANTELS FOR THE SUTTER CLUB · SACRAMENTO.

Curlett & Cuthbertson · Architects.

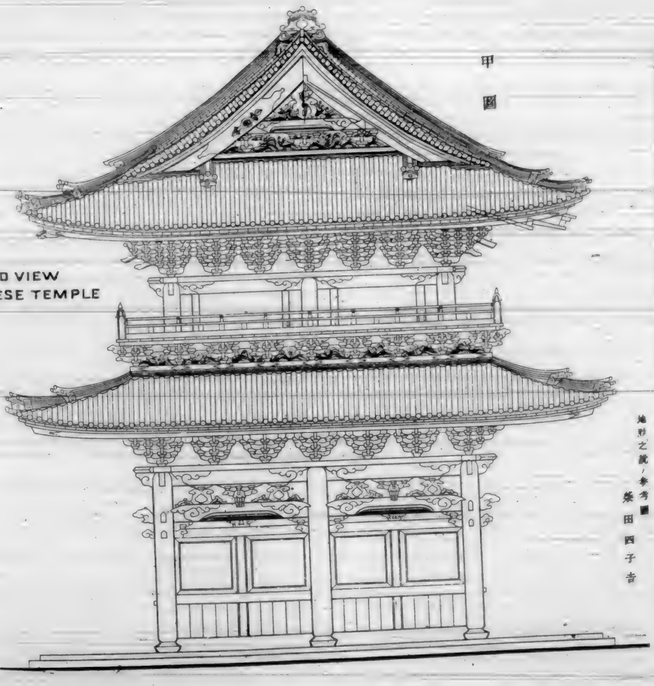


LIBRARY

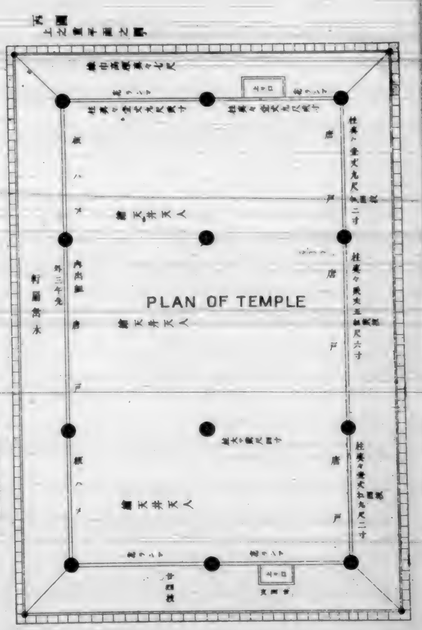
PARLOR



SIDE VIEW OF JAPANESE TEMPLE



END VIEW
OF JAPANESE TEMPLE



PLAN OF TEMPLE

square feet of Italian marble mosaic floors, containing over fifty million separate pieces of marble.

The cost of the building with its equipments, etc., reached nearly three million dollars.

The office portion of the building is located in the ten stories fronting on Wabash Avenue, and is reached by a broad flight of marble and iron steps, and three elevators. There are one hundred and twenty-six offices finished in antique oak.

The hotel occupies the ten stories on Michigan Avenue and Congress street fronts, and has four hundred rooms.

The entrance to the theatre is from Congress street. Its high arched ceiling studded with electric lights, and supported by massive pillars of porphory, its inlaid mosaic floor, its graceful box offices of bronze, its marble walls of scintilating colors contrasting with the polish of the mahogany trimmings, make a scene to vie with Aladdin's palace.

The seating capacity of the various portions of the theatre are as follows: Balcony, 1432; Family circle, 437; Gallery, 526; Parquet, 1442; 40 Boxes, 200. Total, 4037.

PROTECTING ELECTRIC WIRES.

The rules of the Boston Manufacturers Mutual Fire Insurance Company for guarding insured property against the hazard of stray currents of electricity generated outside of mill yards are as follows:

First—No foreign wires of any kind shall be attached to buildings insured by this company for the purpose of carrying electric currents across the yard to any point.

Second—All electric wires which may be required by the insured shall enter the premises at one point near the headquarters of the nightwatchman, where they can be kept under supervision; each of said wires shall be guarded by a protector against strong currents, operating by opening the circuit, and by a lightning arrester.

Third—Such protectors against strong currents shall be located in a dry, accessible place inside the building, and as near the point of entrance of wires as possible, and shall be without ground connection; such protectors shall be mounted on non-combustible and insulated supports, which shall be provided with a receptacle for the burning or melted parts of such apparatus.

Fourth—The lightning arresters on all wires must be placed between the protector against strong currents and the electrical portion of the apparatus within the building to which such wires are connected. No ground wires for such lightning arrester shall be attached to gas pipes within the premises of the insured.

Fifth—All electric wires which may enter the premises of the insured must be insulated between the line wire on the insulator attached to the buildings outside and the protecting device within with the best quality of waterproof insulation. Moreover, such wires must enter at a distance of not less than three (3) inches from any other wire or any conducting material.

Sixth—If any wires carrying high tension or strong currents are to be carried over or under other wires on the property of the insured they shall be attached to poles so near to each other, with one wire so far above the other that if a break should occur the pendant wire between these poles may not be long enough to come in contact with the wire below, or, if not carried on poles, these wires shall be so placed or protected with guard wires as to render a contact between different wires impossible.

Seventh—If the high and low tension systems are in use in the same yard, even when developed within the works, the wires must be kept separate, and so wide apart that no contact or cross arc can be made.—*Fire and Water.*

ANNUAL MEETING OF THE CALIFORNIA ELECTRICAL SOCIETY.

The annual meeting of the California Electrical Society was held at their rooms the 3d instant. By the reports of the officers for last year, the Society is in a good financial condition. The following named officers were elected for the ensuing year: N. S. Keith, President; Orion Brooks, Vice-President; W. W. Wight, Secretary; W. Hanscom Jr., Treasurer, and Edward Roe, H. T. Bestor and A. W. Smith as the three other members of the executive committee. On account of their aid in the science of electricity the following named gentlemen were proposed and unanimously elected honorary members of the Society: A. G. Davis of Baltimore, G. H. Pride of New York, and P. B. Cornwall, L. L. Baker and Alvinza Hayward of this city.

THE MYSTERY OF THE SPHINX.

BY CHARLES S. ROBINSON, D. D., LL.D.

At the foot of the pyramids of Ghizeh, immediately below one who is sitting up on the ledges, there rises out of the verdureless sands, confronting the observer like a statue which looks toward him but not at him, one of the most singular creatures that ever the art of sculpture has given to the ages. A fantastic imagination of some forgotten artist has planted there in the desert an image with one of the oddest heads and one of the awkwardest bodies that can be conceived.

This is what has been known as the Great Sphinx. It is massively constructed, and carved with admirable ingenuity, but no line of any style of beauty has it anywhere to exhibit. The ears are enormous, and disreputably long; the nose is gone beyond criticism; the mouth is now ragged, thick-lipped, and uncouth; the beard is boorish; the open eyes stare blankly into space; the wig bags flatly and flaringly out on either side; the chin has lost half of its stony hair and all of its ancient semblance of dignity; the face was formerly painted, but the red color has been washed off by the sand-showers on the weather side. Altogether the structure seems pretty much gone under the effects of age and decrepitude, and has quite the look of a used-up heathen idol.

And still all tourists agree that there remains a tranquil majesty in the mien of it, which every one would recognize the moment his eyes caught a glimpse of the forehead aloft in the air. Even the fastidious Dean Stanley appears to have considered it "a giant representative of royalty." And he further pronounces that "it fitly guards the greatest of royal sepulchers." So finally he offers his testimony that "with its half-human, half-animal form, it is the best welcome and the best farewell to the history and to the religion of Egypt."

There it stands very quietly; and everybody must be allowed, with due charity, to cherish his own opinion. Coarse in its construction as a work of art, stiff and clumsy in every lineament, it is yet able, as the notebooks of a thousand visitors testify, to impress the souls of Eastern travelers with the vague sense of its greatness. It is better seen from below. The first sight of it, when caught as a part of that matchless landscape displayed from the top of the Great Pyramid, inevitably belittles and dwarfs its proportions. It looks grandest of all from the long and winding approach of the old path. Most persons know that the general figure is of a colossal form, sculptured roughly from the cliff on which it reclines; indeed, it is a lofty rock cut into a symbolic shape representing a lion lying down, with the face of a human being, erect above the forepaws,—a brute's body with a man's head and neck. The body seems to lie reclining at length in the sand; the head is poised finely, with noble features; the figure stands more than fifty feet high, and once had a royal helmet above; the stone is nummulitic, full of millions of minute marine shells, thus showing that years ago this part of the plain lay under the waters of the distant sea.

The entire effect is much lowered because of the overpowering achievement of size in the pyramids close by. Harriet Martineau has an amusing account of her eager anticipation as she went forth upon these excursions around Cairo. Always she said to herself, "Whatever else my eyes will see, they will see the Sphinx." But when she rode up toward the Great Pyramid she was so absorbed that she missed the sight altogether of this idol, and thought afterwards it had been only a heap of rock piled up there amid the interminable sands of the desert. But an attentive contemplation of it subsequently enabled her to reach, and even retain, her former enthusiasm. She says it made her half afraid of it. She noticed particularly that they had placed a man "sitting in a fold of the Sphinx's neck, as a fly might settle on a horse's mane; in that crease he reposed, while far over his head extended the vast pent-house of the jaw, and above that the dressed hair upon either side of the face, each bunch of it a mass of stone which might crush a dwelling-house; so life-like, so huge, so monstrous,—it is really fearful. The full gaze and stony calm of its attitude almost turn one to stone."

It is likely, however, that the Sphinx owes much of its singular impressiveness to the sense of mystery which for generations has inexplicably surrounded it. It is, perhaps, the most written-up and advertised curiosity in the East. Poetry and legend, painting and etching, have vied with each other in throwing a glamor around this forlorn idealization of mythology. The Bedouin say that there are spirits who in the night-time visit the Sphinx. One wears the form of a giant man; the other, that

of a beautiful boy. These move together, and may be detected by the smell of the incense which, as they burn it under the nostril of the idol, floats all through the neighboring air. It is dangerous to interrupt them in their worship at twilight, and hence no Arab child ventures out there after dark among the mysterious tombs in the ledges. The wild sons of the desert call this Sphinx *Abu'l Hol*, "The Father of Terror," and they keep shy of all contact with it.

Besides this, there is the nurses' story of Rhodopis, the maiden who, when she grew old, bewitched people that passed. In her childhood, however, she was a sweet little girl; and one day, when she was bathing away down by the great sea, an eagle bore off her shoe, and took it over the Libyan sands, clear to Memphis. There she suddenly dropped it upon the lap of the king of Egypt as he sat at judgment. And the shoe fell so strangely, and it was such a small and delicate shoe, and the beautiful embroidery upon it was so dainty, that messengers were sent over the whole land to find the owner. They caught the fleeing damsel down in Naucratis, and she was brought to the palace. Then the king married her. And when she died he built the third pyramid for her monument, even though some said she was a witch; he said she was only a beauty.

Beyond these fanciful legends there always remained the fact, everywhere admitted, that nobody knew what this Sphinx was, or who built it, or when it first saw the light, or what it was for any way. It appeared so different from everything else, that the best scholars shrank back from giving an opinion. The name of sphinx was applied to it only from some supposed resemblance which the figure had to what used to be pictured in the Greek mythology. Indeed, it has often been thought that the Egyptian term took its origin a thousand or two years after a new race of conquerors overthrew the ancient dynasties. The kings were dead and forgotten who caused these vast figures to be fashioned there in the temples, and the temples were long in ruins before the name of Sphinx was applied to their work. And it may be that it was just that sense of inexplicableness in mythology which fixed the title here.

In the Greek fable we are told that there was once a monster who was born the direful daughter of Typhon and Chimæra. She had the body of a lion, with its breast, feet, and tail, but the face and head of a female, and the wings of a bird. She was sent by Mars to avenge the death of his son, the dragon slain by Cadmus, and by Juno sent to Dionysus' city to ravage the territory of Thebes. She had been taught to make riddles by the Muses, and one of these she offered on the Phicean Hill: "What creature is that which has one voice, is four-footed, two-footed, and at last three-footed?" Those who could not answer she devoured, and the whole land fell into awful fear. The oracle told every one who asked for help from the gods that Thebes could not be freed until some one should solve the Sphinx's riddle. Finally Creon, who, at the time, was king, lost his son, seeing him devoured by the monster. A proclamation followed, that whoever should answer the Sphinx should be the king of Thebes and have the monarch's sister Jocasta for his wife. Œdipus then came from Corinth into Egypt, and at once answered the enigma. "Man," he said, "is the animal which has but one voice; in his infancy he is four-footed, for he creeps on his hands and feet; but he goes on two feet when he is grown, and, when old, he carries a staff for his help." Then the Sphinx, conquered, flung herself down and died.

This was the Grecian story, but it had no connection with the Egyptian theology, and the Sphinx at Ghizeh was in its place a thousand years before the Greeks came to reign in the land of the Pharohs. It is useless to wander around among the scholars. They differ with each other, and sometimes grow fierce. Mariette says the idol belongs away back in the fourth dynasty; Cheops (who is supposed to have erected in the oldest times the Great Pyramid) found it dilapidated, and gave it a new life with some needed repairs, and so immortalized his name. Then comes Brugsch Bey, saying that this statement of Mariette "bears a lie on the face of it." And Piazzi Smyth actually grows spiteful at these efforts to bring the image any more into notice; he declares that this mutilated object is only an image of superstition, fairly obscene with its idolatrous impiety, unfit to be in the neighborhood of the pyramid or associated with its name. His language grows almost amusing in its explosion of petulant temper: "That wretched Sphinx, I repeat, need be no more referred to again by any Christian man, woman, or child, looking for instruction to the Rock of Ages alone," thus he concludes.

There is no necessity now, certainly, for further keeping up the sense of mystery which has had so much to do with the fame of this image. For everything which any one wants to learn, is told us by George Ebers, and Miss Edwards adds the latest confirmation. The sand, which covered all the front of the idol, has been excavated; something looking like a temple or votive chapel was found just between the paws the lion extends along the face of the rock; statues of King Khafra, three in number, one of which is now in the Bulak Museum, were standing quietly waiting to be dug up and to tell their story. The making of this rock into a figure of a deity was begun by Cheops; it was finished under the direction of King Chefren; and it was dedicated to Harmachis, the God of the Rising Sun. This is learned from a large tablet covered with hieroglyphics which was found fixed upon the breast of the animal down beneath the sands of the ages. There used to be an altar in one of the chambers, and this was so located that the sweet savor of a sacrifice might most easily be supposed to reach the god's nostrils.

That is to say, there is no longer any mystery of the Sphinx; it represents a transformation of the deity Horus, so an inscription discovered lately at Edfu relates; the god, in order to vanquish Typhon, the evil spirit, took the shape of a human-headed lion, thus he arose upon the imagination of those ancient idolaters in the remote past for their worship. Hence the Sphinx was the colossal embodiment of Egyptian idolatry at its highest power and basest degredation. The sun-god was not equal to his own defenses, and the structure lies in ruins. A strange sort of beauty must once have graced it as a thing of art; but the Mamelukes used the big head for a target when they practiced their artillery in shooting. That was what broke the nose and tore fragment after fragment out of the wig and the beard and the chin. Then the open desert invited the winds to come and bury the enclosure below; and so the old battered creature gazes out across the ages, lonely and lost in its vain attempt to summon its friends for rescue, with the far-off look of a deserted monarch. And so Egypt stands crownless to-day; the obelisks, the pyramids, the sphinxes—all are desolate. They lingeringly proclaim their own humiliation before their conqueror. And that was what the Lord said by his prophet in his Word: "He shall break the images of Beth-shemish that is in the land of Egypt; and the houses of the gods of the Egyptians shall he burn with fire." This was what the sad Jeremiah wrote while he was an exile in that country; his eyes had to bear the pain of sights he saw, but he hoped on and kept the faith.

It seems to me, that, if I were asked to offer a convincing proof of the certain fulfillment of Divine prophecy, I should be willing just to rest my case upon the picture which is here suggested. Could Jehovah, the living and true God, show more conspicuously the depth of the contempt and derision in which he holds these idols of the ancient mythologists of Egypt, than by exhibiting them in this plight of ruinous dilapidation? There they stand, battered and deserted, amid the rifled graves of their forgotten priests. Imagine the scene with the infidel and alien race of Mamelukes training their guns upon the temples where the Pharaohs worshiped their highest deities with incense and the bodies of beasts, and laughing with jeers of applause and congratulations whenever a better shot than usual shows by the little cloud of dust in the air that the cannon-ball nipped on the nostril of the Sphinx.—*Sunday School Times.*

STUDENT'S COLUMN.

Relief (re-leef), Rilievo (ré-le-á-vo). The projecture or prominence of a figure above or beyond the ground or plane on which it is formed.

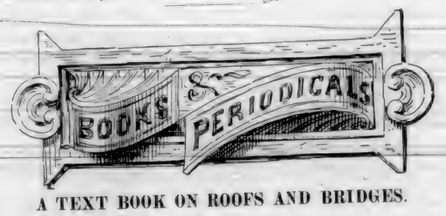
Relief is of three kinds, namely, low relief or bas relief (bä-re-leef); bass relief (bás-re-leef); basso rilievo when the figures do not stand out far from the plane on which they are formed, as in medals, festoons, foliage, etc.; demi relief, demi rilievo, when one half of the figure rises from the plane; mezzorilievo (met-*or*-med-zo-re-le-á-vo), a middle degree of relief in figures between high and low relief; high relief, alto relievo or alto rilievo the projection of a figure half or more, as when a figure stands completely out from the ground, being attached to it in only a few places.

Intaglio (in-täl-yo) is a figure cut into a material, as a seal, matrix, or the like, so as to form a depression or hollow.

PERSONAL.

John McArthur, Jr., the well-known architect of Philadelphia, is dead. Mr. McArthur has held high positions during his lifetime, having been architect for the War Department during the war. His greatest work, however, is the Philadelphia City Hall, now in the course of erection, and which has already cost $14,000,000.

I. K. Pond, of Pond Bros., Architects, Chicago, has come to this Coast on a pleasure trip.



A TEXT BOOK ON ROOFS AND BRIDGES.

PART II—GRAPHIC STATICS.

—BY—

Prof. Mansfield Merriman and Henry S. Jacoby.

The above is the title of a new book just issued by John Wiley and Son, New York, 15 Astor Place. It treats of the *Analysis of Stresses* by graphic methods, together with additional matter so as to form a tolerably complete treatise on Graphic Statics, as applied to the discussion of common roofs and bridges. Abbreviated methods are employed in calculating wind stresses.

A novel feature of the book is that every other leaf is a blank, and of a suitable quality of paper, upon which drawings can be made, and new problems worked out with the assistance of given problems on the adjacent leaves. It is a text book that will be of great value in an Architect's or Engineer's library.

American Architect, Jan. 11, "Civil and Domestic Architecture," "Loss of Power by Radiation of Heat," "The Cost of a Small Museum," "The Ideal Disposition of the Dead," "Electricity's Victims in Europe," "Methods of Reducing the Fire Loss." Jan. 25, "The Art of the Vikings," Architectural Shades and Shadows, "Prehistoric Ruins and Works of Art at Yucatan."

Architecture and Building, Jan. 18, "Electric Motor for Domestic Purposes," "Hot Water Heating." Jan. 25, "Comparative Cost of Electric Lighting," "Notes on Estimating." Feb. 1, "Notes on Surface Drainage," "An Architectural Musuem and Library," "Stray Thoughts for Young Architects."

Inland Architect, January, "Vaulted Churches in Romanesque Architecture," "Development of Architectural Style," "Economy in the Use of Steel in Building Construction."

Architectural Era, January, "The General Character of Romanesque Architecture."

Canadian Architect, January, "Office Management and Routine," "Architecture without Decoration."

Northwestern Architect, January, "The Reduction of Fire Loss."

Journal of Proceedings, (R. I. B. A. organ) "Paris Plasterers, "Height of Buildings," "Westminster Abbey," "Architectural Education."

The Engineering and Building Record, Jan. 11, "The Organization of an Architect's Office," "Improving Country Roads," "Wiring Buildings for the Electric Light." January 25, "Hydraulic Power in London," "Mills and Mill Engineering," "Recent Progress in Sinking Deep Foundations for Engineering Works." Feb. 1, "Government Action as to Accepting the Lowest Bid." "Experiments Relating to Hydraulics of Fire Streams," "A Report on Waste Water."

Sanitary News, Feb. 1, "Building in Other Conntries," "Fire Proof Buildings."

The *Western Architect and Builder* of Denver has begun the publication of a four page weekly supplement.

Architects, Builders and Hardware Journal, Atlanta, Ga., January, "Iron Houses," "Poisonous Gases," "Does it pay to employ an architect?"

Manufacturer & Builder, New York, January, "Suggestion for World's Fair" 1892 illustrated, "The Linotype," "Buerenstock Cable road, Switzerland," "Effect of Vibration on a building."

NOTES & COMMENTS.

Supervisor Bingham proposes an ordinance removing the Chinese quarter to the Potrero.

About $2,000,000 is the value of the lumber trade of Portland, Or. and vicinity.

It is estimated that the Southern Pacific Railroad Co. lost over one and one-quarter million dollars by the recent storm in the mountains.

The Saw Mills in the Puget Sound region are said to have a total capacity for 1,000,000,000 feet of lumber per year, of which the output is about 750,000,000 feet.

In a certain locality in Boston $2,000,000 is estimated to have been spent upon buildings all situated within a radius of one quarter of a mile.

In the suit of Pissis & Moore against Dr. J. H. Stallard, the Justice Court decided in favor of the plaintiffs, notwithstanding the contract had not been recorded.

Washington State has an increasing industry in the cedar shingle manufacture, which amounted to nine million shingles for the past year at a valuation of over two and one quarter million of dollars.

The Illinois State Chapter, A. I. A., has been formed by a consolidation of the Chicago Chapter, A. I. A., with the Illinois State Association of Architects. A committee was appointed to consider the rental of a room at $1,000 per year, on the third floor of the Art Institute. It was decided to make the annual dues of the new body not less than $15 per annum.

The contractor or builder should never prepare the drawings and specifications. *He is on the other side of the case.* A learned judge once said that "a contractor preparing the drawings and specifications of work that he is to perform for a party who has little or no technical knowledge of the subject, is like the opposing lawyer preparing both sides of the case." However honest he may be, such a lawyer and such a contractor will give his own side the advantage.—*Ex.*

The Senate will probably appropriate the following amounts for public buildings: Oakland, Cal., $300,000; Cheyenne, Wyoming, $150,000; Helena, Mont., $150,000; Salt Lake City, Utah, $500,000; Stockton, Cal., $85,000; Mammoth Hot Springs, Yellowstone National Park, $10,000; Portland, Or., $500,000; Virginia City, Nev., $75,000; Hastings, Neb., $150,000; The Dalles, Or., $100,000; Salem, Or., $100,000; Reno, Nev., $75,000; San Diego, Cal., $300,000.

Statistics recently tabulated show that there was consumed during the past year of clay products in building in twelve of the leading cities, the following number of brick: New York City, 1,000,000,000; Chicago, 440,000,000; Philadelphia, 300,000,000; Boston, 150,000,000; St. Louis, 200,000,000: Washington, 125,000,000; Cincinnati, 100,000,000; Cleveland, 84,000,000; Omaha, 80,000,000; Pittsburg, 80,000,000; New Orleans, 36,000,000; Indianapolis, 35,000,000; making a total for these cities of 2,730,000,000, which merely hints at the enormous consumption in the country at large.—*Ex.*

Governor Hill, of New York, in a recent message to the legislature, suggested that in view of the unsatisfactory condition of the county roads, the State should construct in every county two roads intersecting each other in about the center of the county, connecting with similar roads in the adjoining counties and so form a system of State roads to be kept in repair at the expense of the State. The advantage to be gained would be convenient means of communication between different parts of the State, whether near or far. If this idea is carried out successfully in New York there will be an excellent precedent for other States to follow, and thus make public highways over the length and breadth of the nation.

A project is on foot to build a large salt water bathing establishment on the northwest corner of Sutter and Stockton streets; the water will come direct from the ocean, through several miles of pipe; the building will be a handsome structure, containing, besides a large number of single bath-rooms, one large plunge bath 50x100 lined with marble and two smaller plunge baths for private clubs whose membership will be limited to two hundred. One club being composed of ladies, and the other of gentlemen. Mr. Wm. Greer Harrison is at the head of the enterprise; the company has its office at 305 California street, and is known as the Pacific Ocean Bathing Corporation. Such an enterprise should be made a very profitable one—at present would-be bathers have long distances to go to enjoy the pleasures of a swim in salt water, and yet there are many who put up with the discomforts of a long ride and the consequent loss of time, for the sake of the pleasure they take in a dip.

M. Pechard, the French chemist, has discovered a new substance, called "oxalomolybdic acid," being composed of oxalic and molybdic acids. The crystals of this new acid can be kept unchanged both in light and darkness, but soon become blue if moistened and placed in the sun. When it is used upon paper it will not appear distinct unless put under the strongest sunlight, which turns it to a deep blue. However, this only happens when the solution is spread over some surface, as in the bottle it remains unchanged. To use it for photographic purposes, dip a sheet of paper into a saturated solution, dry in the dark, and then expose behind a common photographic negative for about ten minutes, when a very sharp blue print is obtained. If placed in contact with water, the color immediately disappears, thus allowing one to write upon a piece wholly exposed to the sunlight with a pen dipped in water; but heat this blue print once, and it turns a jet black, which water cannot change.

The American Fine Arts Society has been organized with a capital stock of $50,000, besides which a gift fund was raised of upwards of $30,000, now reported to have reached $200,000, contributed chiefly by Cornelius Vanderbilt, George Vanderbilt, C. T. Barney, John D. Rockfeller, Robt. Gorlet, Henry G. Marquand and John D. Archibald. The Architectural League, Art Students' League, Society of American Artists, New York Art Guild and Society of Painters in Pastel, have united with the organization. A building is to be erected in New York soon in which exhibitions can be held and the study of Art pursued.

"The formation of this powerful union", the committee having the matter in charge announces, "is doubtless the most important step yet taken in the establishment of a true school of American Art. It will correspond to the Ecole des Beaux Art in Paris. It brings together no less than three hundred artists and architects of merit and as many more ambitious students. This Union is destined to become the Art power of the country.

Plans have been drawn for another suspension bridge across the Hudson, at a point where the river is narrowest, between Hoboken and Fourteenth streets, New York. Gustav Lindenthal is said to be the projector of the work, which is to be carried out by the North River Bridge Company, of which Jordan L. Mott, of the Mott Iron Works, New York, W. A. and W. F. Roebling, the famous bridge builders, are amongst the principal incorporators. The bridge is to have but a single span, 2,850 feet in length, thus outstretching the much talked-of English Channel bridge, whose longest span will be only 1,700 feet. To place a pier in the center of the river would incur a greater expense than a single span, as it is two hundred feet down to rock formation. The bridge will be 150 feet above the river and will be constructed of open hearth steel wire. The Brooklyn bridge was built with crucible steel wire that cost eight cents a pound, while the material now to be used is estimated at half that price. There will be six railroad tracks crossing, and the length of time taken to build is computed at not more than seven years, unless delayed by legal proceedings.

WARFARE ON OAK TREES.

"The world seems to have waged a special warfare upon oak trees," says a St. Louis man. "Before iron ships were built, and that was only twelve years ago, oak was the only thing used. When this drain ceased oak came into demand for furniture, and it is almost as expensive now as black walnut. No one feels the growing scarcity of oak like the tanner, and the substitution of all sorts of chemical agencies leads up to the inquiry as to whether other vegetable products cannot be found to fill the place of oak bark. The wattle, a tree of Australian growth, has been found to contain from twenty-six to thirty per cent. of tannic acid. Experiments have been made on the Pacific Slope, where the wattle readily grows, and in a bath of liquor, acid was made from it in forty-seven days, whereas in liquor made from Santa Cruz oak, the best to be found in all the Pacific States, the time required is from seventy-five to eighty days. The wattle will readily grow on the treeless plains of Texas, New Mexico and Arizona, the bark of which ought to yield five dollars per acre, counting the fuel as nothing."—*Invention.*

CAUSE OF THE TRACY FIRE.

Result of Building-Inspector Entwisle's Investigation.

Complying with your order to make an examination to ascertain, if possible, the origin of the fire in the building, 1634 I street northwest, owned and occupied by the Hon. B. F. Tracy, I have the honor to report that I have made a thorough examination of the building, and it is evident from the condition of the house that the fire first started on the west side of the front parlor on the main first floor, and its rapid progress was no doubt caused by the fire getting behind the wall paneling. The room was lined its entire height with panel work on all the walls, leaving small chambers through which the fire passed around the entire room and through the floor to the second story. It also passed out into the hall and by currents rapidly up the stairway, cutting off all chance of escape from the upper floors. The building was heated by low pressure steam, on the indirect system, and in tracing the supply to the different localities of coils and coil chambers there is no evidence that the fire originated from the heating apparatus or from any chimney flue, but immediately under the point where the fire started there was situated in the basement a pump run by a Bunsen gas-burner, and it is possible that this may have been out of order, allowing the gas to escape to the room above, and the fire started by an explosion of gas. This building was erected in 1876, and there is evidence that it was carefully and safely constructed. An addition was made during last season on the east side, and the mansard roof removed from the front and the front all carried up. This last portion is damaged principally by smoke and water; nor was the basement of the old portion burned; the fire starting on the floor above, but that was greatly damaged by water. I cannot positively decide the origin of the fire, but the escape of gas and the explosion of gas seem the most probable cause.—*National Builder.*

ADOBE HOUSES IN LOUISIANA.

The following description of building the old style adobe houses in Louisiana when that peculiar style of architecture was a necessity, will be found interesting: Friends and neighbors were invited in sufficient number with ample refreshments made and provided. A place was selected convenient to the building with loamy soil suitable for brick, and a hole was dug of sufficient size for the quantity of material required. This, after deep spading, was watered to the consistency of brick mortar. Then green moss, of which a sufficient pile had been provided beforehand, was spread like a gray blanket over the mortar bed, when a certain number of men, barefooted, with trousers rolled up above their knees, tramped the circle, crushing in the moss to the bottom of the loose earth. Then came another layer of moss and another tramping and so repeated till the pit was full to the top of adobe—moss and clay. This material was then pulled out by blankets or sections as it was tramped in and taken to the building already completed except the wall or weather boarding for which this mixture was the substitute. In sections of country where there was no Spanish moss, prairie grass or hay was used as a poor substitute. Beginning at the sill they went up, firmly driving sticks nearly horizontal between the studding about every six inches, to hold the mortar to its place, and when finished, these sticks were in the center of the wall. This, when half dry, was shaved off with a sharp spade and left to dry, and when well whitewashed made a solid and pretty wall, cool in summer and warm in winter.—*The Journal of Building.*

CITY BUILDING NEWS.

Buchanan and Washington. Owner, Isaac Strassburger; architect, SAM'L NEWSOM; contractor, Geo. R. Lang; surety, Frank P. Latson, $4,000; cost, $13,500; signed, Jan. 28; filed, Jan. 31; payments, 75 per cent. on 1st and 15th of each month as work progresses, balance 35 days.

Buchanan and Geary. Carpenter work; owners, Miss B. K. Dunne, et al; architect, CHAS. J. I. DEVLIN; contractors, John Blake, et al sureties, J. Sullivan and J. T. Lynch, $1,500; cost, $2,554; signed, Jan. 9; filed, Jan. 13; time, 6 weeks; payments, 75 per cent, as work progresses, balance 35 days; artificial stone work, contractor, Geo. Goodman; surety, Geo. Richardson, $1,000; cost, $1,575; filed, Jan. 13; payments, same as above.

Bush and Lyon. Frame cottage; owner, W. I. Morgan; architect, M. J. BUGBEE; contractor, A. J. Wheeler; cost, $1,821; signed, Jan. 13; filed, Jan. 14; payments, $456, enclosed; $456, brown coated; $456, accepted; $456, 35 days,

Buchanan and Washington. To build; owner, Isaac Straburger; architect, Samuel Newsom; contractor, Geo. R. Lang; cost, $10,350; surety, F. Latson. $4,000; signed and filed, Feb. 12.

California, between Stockton and Powell. Dwelling; owner, F. Hess; architects, Townsend & Wyneken; contractor, R. O. Chandler; signed, Jan. 8; filed, Jan. 18, cost, $5,097; payments, $950, framed; $950, enclosed; $950, trimmed, etc.; $962, completed; $1,275, 35 days.

Clara Avenue and Seventeenth street. Cottage; owner, P. W. Braas; contractor, Gustave Pavel; cost, $1,688; signed and filed, Jan. 29; payments, $300, mortar on; $600, completed; $588, 35 days.

Clayton, near Page. 2-story frame; owner, Henrietta Maynard; architect, SAMUEL NEWSOM; signed, Jan. 18; filed, Jan. 28; cost, $4,300; payments, 75 per cent. on the 1st and 15th of each month, as work progresses; balance, 35 days.

Devisadero and Waller. 2-story frame; owner, Annie Green; architects, Shea & Shea; contractor, J. B. Taubman; sureties, F. G. Norman & J. Beaumant; signed, Jan. 9; filed, Jan. 14; cost, $5,460; payments, $1,023, enclosed; $1,024, rough plumbing in; $1,024, outside primed; $1,024, completed; $1,365, 35 days.

Devisadero near Clay. 2-story frame; owner, Mrs. E. M. Carter; contractors, John B. Gonyeau Bros. architects; sureties, G. W. and C. A. Hooper, $4,000; signed, Jan. 14; filed Jan. 16; cost, $11,800; time, 110 days; payments, $2,950, frame set up, etc.; $2,950, brown coated; $2,950, finished; $2,950, 35 days.

Dolores and Nineteenth. To build; owner, S. Hortop; architect, S. HATFIELD; contractor, C. Peterson; sureties, A. W. Starbird and W. Bennett, $2,000; signed, Jan. 20; filed, Jan. 22; cost, $3,600; payments, $666; roof boarded, $668; first coat mortar on, $666; plastered, windows in, $700, completed; $900, 35 days.

Douglas Street. 2-story frame; owner, Bridget Carr; architect, T. W. McKee; contractors, W. C. Aickley, et al; signed, Jan 25; filed, Jan. 27; cost, $1,600; time, 60 days; payments $500; ready to be enclosed; $200, brown coated and floor laid; $500, windows hung; $300, completed; $100, 35 days.

Ellis and Powell. Owner, Edward Auzerais; architects, PISSIS & MOORE; signed, Jan. 13; filed, Jan. 16; payments, 75 per cent. on the 1st and 15th of each month as work progresses; balance, 35 days. Carpenter work, J. W. Wissenger; cost, $20,885. Brick and stone work, Richardson & Gale; cost, $20,900. Wrought-iron work, Bigelow & Little; cost, $1,462. Cast-iron work, O'Connell & Lewis; cost, $2,560. Plumbing and gasfitting, Fritz & Kean; cost, $2,574. Painting, J. St. Denis & Co.; cost, $1,423. Total cost, $52,686.

Geary and Gough. Interior additions to church; owner, First Lutheran Church; architect, Samuel Newsom; contractors, Fink & Schindler; cost, $2,025; signed and filed, Feb. 12.

Harrison and Eleventh. Alterations; owner, James Moran; architect, W. H. ARMITAGE; contractor, S. T. Green; surety, Frank P. Latson; signed, Jan. 18; filed, Jan. 28; cost, $2,625; time, 60 days; payments, 75 per cent. as work progresses; balance, 35 days.

Laurel Hill Cemetery. Mausoleum; owner, James L. Flood; architect, Wm. Patton; contractors, Patrick Deegan, et al; signed, Dec. 5; filed, Jan. 21; cost, $66,700; payments, 75 per cent. as work progresses; balance, 35 days.

Lyons and Washington. 2-story frame; owner, Perry Stinson; architect, P. R. Schmidt; contractor, J. O'Connell; signed, Jan. 15; filed, Jan. 21; cost, $2,100; time, 90 days; payments, $575, enclosed; $575, brown coated, etc.; $575, hard finished, etc.; $575, completed; $900, 35 days

McAllister and Webster. Two houses; owner, Elizabeth Gluck; architects, John & Balczynski; contractor, Adam Miller; signed, Jan. 20; filed, Jan. 23; cost, $14,200; payments, $3,000, frames up; $2,500, enclosed; $2,500, rough mortar on; $2,650, ready for paint; $3,550, 35 days.

McAllister and Larkin. Cast-iron work for 5-story brick; owners, J. G. and T. N. Day; architect, T. J. WELSH; signed, Dec. 2; filed, Jan. 13; cost, $9,300; payments, 75 per cent. as work progresses; balance, 35 days.

Pierce and Fell. To build; owner, C. Westphal; architect, H. GEILFUSS; contractor, John F. O'Brien; signed, Jan. 20; filed, Jan. 23; cost, $3,770; payments, $865, frame up; $865, enclosed; $865, brown coated; $ 65, white coated; $865, completed; $1,445, 35 days.

Pine and Polk. To build; owner, John Hemphill; architects, B. McDOUGALL & SON; contractor, John H. McKay; signed, Jan. 9; filed, Jan. 20; cost, $14,400; payments, $1,800; excavating done, etc.; $2,000, ready for second tier of joists; $1,800, roof boarded; $1,200, brown coated; $1,200, sash glazed and hung; $2,800, completed; $3,600, 35 days.

Pine, between Franklin and Gough. Frame dwelling; owner, G. M. Davis; architect, W. O. Banks; contractor, J. G Adams; sureties, F. Joost and S. H. Harmon; signed, Jan. 22; filed, Jan 29; cost, $8,870; time, 130 days; payments, $1,500, first story joists in position; $2,640, brown coated; $2,500, completed; $2,229, 35 days; Another dwelling, costing $8,660; same description in other respects; payments, $1,500, first story joists in position; $2,490, brown coated; $2,500, completed; $2,170, 35 days.

Pine and Polk. To build; owner, J. J. Conrad; architects, B. McDougald & Son; contractor, J. H. McKay; cost, $4,680; signed, Feb. 10; filed, Feb. 13.

Pine and Kearney. Carpenter work; owner, S. P. Blumenberg; architect, Fred E. Wilcox; contractor, N. C. Post; cost, $1,250; payments, 75 per cent. as work progresses; balance, 35 days.

Stockton and O'Farrell. To build; owner, Schiever Levy; architects, Schulze & Meeker; contractors, McGowan & Butler; cost, $20,500; signed, Jan. 22; filed, Jan. 23; time, July 15, '90; payments, 75 per cent. as work progresses; balance, 35 days.

Stockton and Vallejo. To build; owner, Robert R. Hind; architects, Ashton & Stone; payments, 75 per cent. as work progresses; ballance, 35 days; filed, Jan. 14; contractors, Faucher & Connor for brickwork, etc.; cost, $24,900, with F. Joost and O. H. Greenwald, $10,000; Henry Williamson for plumbing, gasfitting, etc.; cost, $3,028; the Gray A. S. P. Company for patent stone walks; cost, $1,100; E. J. Mosley for painting; cost, $1,625.

Scott and Vallejo. To build; owner, R. K. Palache: architects, Smith & Freeman; contractor, R. P. Sanchez, signed, Jan. 20; filed, Jan. 21; cost, $4,595; payments, $500; second story joists on: $1,100, covered in; $803.25, plastered; $973, completed; $1,128.75, 35 days. Plumbing, Duffy Bros.; filed, Jan. 23; cost, $522; payments, $195, rough plumbing in: $195, completed; $132, 35 days.

Scott and Jackson. Foundation etc.; owner, Albert Gallatine; architect, Clinton Day; contractor, John McCarthy; cost, $18,984; signed, Feb. 10; filed, Feb. 13; time, Aug. 31, '90; payments, $6,000, brickwork ready to build; $5,000, to second floor joists; $3,215, completed; balance, 35 days.

Taylor, No. 1517. Repairing, except plumbing, etc.; owner, Martha Scooffy; contractor, Wm. Berry; signed, Jan. 10; filed, Jan. 17; cost, $1,037; payment when completed; time, 35 days.

Townsend near Second. To build; owner, John G. Adams; architect, CHAS. I. HAVENS; contractor, Jos. Moore; signed, Jan. 21; filed, Jan. 27; cost, $6,468; payments, $1,600, rough frame up; $1,600, enclosed; $1,618, completed; $1,650, 35 days.

Van Ness Avenue and O'Farrell. Mill work and inside finish; owners, Mahoney Bros.; architect, T. J. WELSH; contractors, P. A. Buell & Co.; signed, Jan. 28; filed, Jan. 30; cost, $15,000; payments, 25 per cent. as work progresses; balance, 35 days.

Van Ness Avenue and O'Farrell. Stairwork and steps; owners, Mahoney Bros.; architect, T. J. WELSH; contractors, Drew & McLaughlin; signed, Jan. 22; filed, Jan. 24; cost, $6,000; payments, 75 per cent. on the 1st and 15th of each month, as work progresses; balance, 35 days.

Waller and Octavia. Completion of 2-story frame; owner, Pauline D. Skadberg; architect, M. J. WELSH; contractor, August Deischer; signed, Jan. 29; filed, Jan. 31; cost, $1,275; payments, $425, brown mortar on; $425, completed; $425, 35 days.

Washington, between Polk and Van Ness Avenue. Brickwork; owner, Clark Blethen; architects, Percy & Hamilton; signed, Jan. 20; filed, Jan. 25; cost, $1,450; payments, 75 per cent. on the first Saturday night of each month; balance, 35 days. Carpenter work, same as above, except contractor is J. B. Gonyeau, and cost, $5,781.

Oakland.

Market and Twelfth. High School; owner, City of Oakland; architect, W. J. Mathews; contractor, Robt. Smillie; signed, Jan. 11; filed, Jan. 14; cost, $14,385; payments, $2,157.75, as one-fifth of the work is completed.

Chestnut and Tenth. 2-story frame; owner, Chas. Young; architect, Chas. Mau; contractor, M. Jackson; signed, Jan. 15; filed, Jan. 16; cost, $2,161; payments, $840.25, as one-third of the material is furnished and work done.

Tenth Avenue, between 17th and 18th streets. Cottage; owner, Edward Dolan; architect, Thos. McGauley; signed and filed, Jan. 20; cost, $1,680; time, seven weeks from date.

Washington and Twelfth. Painting; owner, M. K. Blake; architect, W. J. Mathews; contractor, Al. Wood; cost, $1,125; payments, 75 per cent. as work progresses; balance, 35 days.

Cypress and Sixteenth. To raise building; time, 60 days; owner, Sallusch Scheyer; contractor, J. C. Johnson; cost, $1,890; signed, Jan. 23; filed, Jan. 30; payments, $700, rustic on; $650, first coat of mortar on; $450, 35 days.

Webster and Fourteenth. To build; time, 45 days; owner, Mrs. E. E. White; architects, J. J. and T. D. Newsom; contractors, Wm. Sturgeon & Son; cost, $3,600; payments, $700, rustic on; $900, floors laid; $1,000, completed; $900, 35 days.

Alameda.

Encinal Avenue and Morton street. To build; owner, Frederick Wild; contractors, A. W. Pattiani & Co.; cost, $4,190; time, April 15 '90; signed, Jan. 9; filed, Jan 13; payments, $900, chimneys built; $800, exterior primed; $600, completed; $890, 35 days.

Encinal Avenue and Morton street. 1-story frame; owner, L. W. Sanborn; contractor, A. R. Benke; signed, Jan. 27; filed, Jan. 28; cost, $3,900; payments, $800, roof on; $1,000, windows fitted; $1,000, 35 days; time, May 1, '90.

Union and San Antonio. To build; owner, A. W. Fink; contractors, A. W. Pattiani & Co.; cost, $4,145; signed, Jan. 29; filed, Feb. 1; time, May 1, '90; payments, $1,300, chimneys built; $1,100, brown mortar on; $820, when completed; $1,125, 35 days.

Fresno.

F. Banta has been awarded the contract for an engine house to cost $5,170.

Santa Rosa.

T. J. Furbee has drawn plans for a $13,000 church on Mendocino street.

Antioch.

A new school house to cost $11,740, contractor J. B. McKenzie of Benecia.

San Rafael.

Hotel Rafael property, three cottages; contractor, C. Chisholm; cost, $15,500; and tower, cost, $6,000. Residence, costing $5,600, for L. Gerstle.

Livermore.

M Street. Cottage; owner, Wm. Thorn; contractors, Palmer, Hunter, Taylor & Wilder. Second and K streets. Cottage; owner, Joseph Fletcher. Arroyo Valle. Building; owner, J. C. Keene.

Oregon.

W. J. Snodgrass is building a $20,000 planing mill of three stories at Oro Dell near La Grande. Also at the latter place it is reported plans for 50,000 three-story brick hotel soon to be built.

Washington.

Plans and specifications for a three-story building in Cosmopolis to cost $40,000 have been drawn.

Whatcom Court house designs have been submitted. The cost of the building which is to be of brick, will be $65,000.

Seattle is to have a shoe factory costing $100,000. W. J. Ilman, of Boston, is the projector.

TACOMA.

Five-story brick warehouse. Owner, F. S. Harman & Co.; architects, Farrell and Darmer; cost, $20,000.

Building. Owner, M. J. Cogswell; architect, S. Bertelson; cost, $6,000.

Residence. Owner, F. Dittmore; architects, Farrell and Darmer.

C. Langlois is drawing plans for the National Bank of Commerce, of a six-story brick and stone building to cost $100,000.

Montana.

Supervising Architect Bell of Washington, has written to Postmaster Curtis, for information concerning the needs of Helena's Government officials, with the idea of drawings up plans for a public building.

Los Angeles.

Alpine Plaster and Cement Company, wooden building, corner Alameda and Washington streets, $20,000.

W. S. Reevis, frame dwelling, Water street, between Reservoir and McDuff streets, $1,316.

Pierre Nicholas, brick store and rooms above, northeast corner Marchessault and New High streets, $5,000.

Mrs. Jennie Harbert, frame store with rooms above, Hain street, near Thirty-third street, $1,000.

Mrs. Sallie Harkness, frame building, Adams street, lot 1, St. James Park tract, $5,500.

Mrs. J. C. McMenomy, frame dwelling, 741 Hill street, $4,600.

State of California, frame gymnasium, Normal school grounds, $9,500.

K. Messer, brick store, corner Rose and First streets, $1,000.

W. C. Furrey, frame dwelling, corner Orange and Farragut streets, $4,000.

City of Los Angeles, two-room frame school house, corner Pritchard and Flora streets, $2,900.

City of Los Angeles, two-room frame school house, corner Swain street and Griffin avenue, $2,900.

City of Los Angeles, four-room frame school house, corner Vignes and Thomas streets, $8,508.

City of Los Angeles, four-room frame school house, Beaudry street, $8,508.

City of Los Angeles, eight-room frame school house, Sixteenth street, $13,997.

City of Los Angeles, eight-room frame school house, corner Ninth street and Stanford avenue, $13,997.

City of Los Angeles, two-room frame school house, First and Savannah streets, $3,495.

City of Los Angeles, four-room frame school house, Conwell and Grant avenues, $7,750.

City of Los Angeles, four-room frame school house, Collado street, $8,989.

City of Los Angeles, four-room frame school house, corner Alpine street, $9,393.

City of Los Angeles, brick high school building, Castelar street, $59,300.

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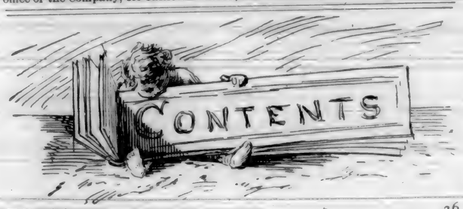

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN W. CURTIS, Treas.

TECHNICAL SOCIETY, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

AT a special meeting of the SAN FRANCISCO CHAPTER OF A. I. A. held Feb. 28th, a committee was appointed to confer with the Directors of the Mechanics' Institute, concerning the proposed improvements to their property.

The regular meeting of the Chapter was held on the 14th of March, at which the usual routine of business was transacted.

At a regular meeting of the Technical Society of the Pacific Coast an interesting paper was read by Otto von Gelden on the history and construction of the Dry Dock at Mare Island, near San Francisco. The character of the ground, the construction of coffer dam adopted to carry the excavation some 35 feet below low water mark and the system of piling was fully described. The "gravity" mixer for concrete work was illustrated by drawing and the method of working described. The masterly economy of political engineering was lightly touched upon; one instance, a synopsis of which may be stated thus, "the powers that were" sent out a number of gun powder pile drivers, one of which cost some $1700 and a royalty of $3000 paid for the privilege of using it. A twelve horse power steam engine with steam up was kept in position in order to raise the piston when the powder failed in its work. About five per cent. of the piles were driven with this wonderful machine. The work was begun in 1873, is not yet finished, and up to the present time has cost two and three quarter million of dollars. The discussion on the ubjects was continued till next meeting. An agent from an eastern manufacturing house, exhibited improved instruments for engineers, surveyors and architects. The level had an improved arrangement for detaching and re-adjusting the level to swivel stand. The transits shown had improved side standards whereby increased strength was gained; and more firmness given to the pivots of the tube, the scale on the circle being cut a short distance back from the edge and a vernier arranged for reading same; by this arrangement the scale will remain legible for a longer period than if cut to the edge. The regulating screws are worked by yokes against all movable joints which reduces the inaccuracy by wear to a minimum. A new form of draughtsman's scales was shown, and will soon be placed in the market, which consists of a layer of white celluloid let into the common wooden rule, thereby making a scale equal to one of ivory at a slight cost over one of wood.

THE proposition laid before the Mechanics' Institute to offer prizes for a scheme of utilizing this property commends itself as a sensible method of arriving at the best solution of the problem which stares the Institute Directors in the face. When this has been thus settled upon, definite instructions could be formulated for the guidance of architects to enter the final competition. Unless these definite instructions are given a great waste of work will be the result, as a good design in every other way through failure to fit in with the scheme of the Directors may be laid aside to the loss both of the public and the architect involved.

We are afraid that public spirit alone will not suffice to bring the best talent to bear upon this question and a stimulus of a money reward is required. And money spent upon this object

would very likely have the effect of saving a vast amount in the future.

The problem before the Institute seems to resolve itself into which of the following propositions, among others, would be most conducive to the welfare of the Institute and at the same time to the welfare of the citizens of San Francisco, its constitutents.

1st. The removal of the Fair building to Folsom St., selling the Library building on Post St., and erecting a new Library building and hall on Larkin St. property with or without stores attached.

2nd. Selling both the present building and the Folsom St. property and concentrating both the Exhibition Hall and the Library upon the Larkin St. property again with or without stores.

There are other plans than these that may commend themselves, but these two seem the principal ones under consideration.

Now, sketch plans say to a scale of 20 feet to 1 inch showing what could be done with the different pieces of property to the best advantage would without doubt be an immense help to the arrival at some good result, and lead to a great deal better understanding by the Directors of their position. Such a proposition deserves very serious consideration on their part before rejection.

CHICAGO appears to have distanced all competitors in the race for the World's Fair, and we tender our congratulations. Chicago is a representative American city, full of energy, push, and if you will, of *cheek*. With the well known business activity of her citizens, it is a foregone conclusion that she will do every thing possible to make the important event an entire and complete success.

New York lost her chance through an unfortunate combination of circumstances and naturally feels pretty sore over the matter, and is somewhat disposed to say disagreeable things about her fortunate rival. However, she will have to take her loss philosophically and after she has had a little time to get over her disappointment will doubtless join the procession and give as much aid as she would expect to receive had the conditions been reversed.

THE *Canadian Architect* expresses the hope that the bill respecting the practice of architecture in the province of Ontario will become a law. It provides that before any man can be registered as a qualified architect, he must pass such examinations as may from time to time be determined on as sufficient to ensure his having a fair knowledge of architecture in all its branches. It is designed to give the public information as to the qualifications of the men they employ, so that if they choose to employ incompetent persons or none at all, they will only have themselves to blame for faulty construction or defective bnildings.

It then goes on to say:

It will be argued that the object of this Act is to make the profession of architecture a close profession, solely to the benefit of its members and not necessarily for the benefit of the public, and that the public does not desire that such a Bill should pass. There is nothing in the Bill constituting the profession of architecture a close profession, but even if there were, we maintain that the public has shown in many ways that none but qualified men should be allowed to practice as architects. The newspapers, as representing the public, are always complaining of defects in buildings, resulting, as they maintain, from the ignorance of architects. Well, if there is this ignorance on the part of some architects, something should be done to weed the ignorant out of the profession and leave only the intelligent, as it would appear that the public is not capable of selecting the competent from the incompetent, or such mistakes would not occur, since there are qualified men, though not in such numbers as the unqualified. Unless there is a standard, the competent man cannot say to the incompetent one that he is not a properly qualified architect, and that he should not claim to be an architect, as he injures the standing of the profession and calls down upon it the condemnation of the public. If he did, he would only be laughed at for his impertinence.

Architects, in submitting this Bill to the Legislative Assembly of Ontario, are only doing the work that the public should perform for itself. In nearly every case where a building has been found to be defective in any particular, the press has laid the blame on the profession as a body. If every case of failure were investigated, it would be found that the mistakes were owing to the engagement of an ignoraut man, who had no right by training or natural ability to assume the duties of an architect, as well as to the fact that the public is unable to distinguish between the competent and incompetent. It certainly is not fair to blame a profession as a body for the errors of individuals who have no standing with the profession. These men claim to be of the profession, the public accepts their statements, employs them, finds them incompetent, and forthwith condemns the profession as a body as if there were no competent men in it, but that all were like those men whose statements they are so ready to accept. The Bill of Registration, if passed, will remedy this state of affairs, unsatisfactory alike to the profession and the public. The man who employs a registered architect will have some guarantee that he has a reasonable knowledge of his business, that is, after the Bill has been in force a few years—for as all men now professing to be architects will be entitled to be registered, it will require time for those among them who are incompetent to pass out of sight. If the profession asked the Legislature to pass an Act which would make it unlawful for any but a registered architect to practice architecture, and which would not allow anyone to erect a building except he employed a registered architect, there would be more than ample grounds for the throwing out of the Bill. The profession cannot gain anything from the passing of the Bill except in an indirect way. The men who are now practicing will in the course of a few years have to contend with young men who will have had the advantage of a thorough and systematic training. Our best men will feel the competition of these young men, and the inferior men must suffer materially. Yet in spite of such facts, nearly all the architects now practicing in this province are united in asking for the passing of this Act.

Some may imagine that this movement for the incorporation of the profession of architecture is local and recent in its character. Such is not the case. The question has been more or less before the profession for the last twenty-five years, since the Royal Institute of British Architects made a movement toward that end a quarter of a century ago. During the last three or four years the movement in Great Britain has assumed a definite form, and a Bill was submitted to the House of Commons in 1888, which, however, was withdrawn at that time, owing to the opposition of the Royal Institute of British Architects and the Civil Engineers, but submitted again in 1889 in a revised form. There is no doubt but that it will eventually pass. In some of the Australian colonies the matter has been taken in hand, and a Bill to incorporate the architects of these colonies is now under discussion. In the United States, Bills have already been submitted to some of the State Legislatures, and advanced several stages; and in many of the other States Bills are under preparation for submission to the Legislature. It will thus be seen that this movement is not a new or sudden one. It is rather an old one which has slowly gathered force until Acts of incorporation are now being asked for in all quarters of the world for the proper and equitable acknowledgement of the profession of architecture, in order that the public may be protected from loss of life and money through the ignorance of many supposed qualified practitioners. The membershlp of the Ontario Association of Architects includes 92 per cent. of all men now practicing architecture in this province, and when those who have applied for admittance to the Association are received, the percentage will be 97. The movement has received the full and hearty support of the medical profession in Great Britain. Medical men are brought into contact with the ill effects of bad building, drainage, etc., and knowing the results, are only too anxious to aid in securing such legislation as will remedy an evil which has caused many deaths, much sickness, and heavy pecuniary losses.—*The Canadian Architect and Builder.*

THE GIRALDA IN THE SPANISH CITY OF SEVILLE.

THE GIRALDI.

This famous belfry tower was built in 1196, as a minaret of a Mohammedan mosque. It displays the architectural characteristics of the Moorish people at the time they occupied the southern provinces of Spain. It now forms a portion of the Catholic cathedral. The tower is fifty feet square at its base, and is three hundred and fifty feet high.

There are records that on the present site there was once a heathen temple, erected by the Carthagenians, which the Romans afterwards appropriated to their own worship, and in turn were dispossessed by the Moors.

It is a curious reflection, that in the course of time and the unforeseen changes it brings, the present occupants may, perhaps, be forced in their turn to vacate in favor of still other beliefs.

VIBRATION IN BUILDINGS.

One of the most perplexing problems that confronts the engineer, is the vibration in buildings caused by running machinery Westinghouse, Church, Kerr & Co. of New York, being frequently called on to locate Westinghouse engines on the upper floors of buildings, have had a wide experience in this line, and have given the subject much thought. In determining these questions, they say the character of the building, the ground on which it rests, the weight, power and speed of engines, are all factors which must be considered, some of which are very indefinite, or at least their effect is hard to predetermine, combined with which is the very important influence, namely, the relation which the speed of the engine bears to the natural time of vibration of the floor beams. It is evident that if the slight motion which every engine has is exactly in time with the natural vibration of the floor beam, each pulsation of the engine will increase the scope of the vibration of the floor, resulting in a most disastrous shaking, while if the pulsations of the engine are in discord with the floor, comparative quiet will exist. As floor beams are usually long, and their time of vibration correspondingly long, it is usually found that a fast running engine will give less of its vibration to the floor beams than a slow running one. It is also worthy of note that the vibrations of a fast running engine are more numerous and less forcible, hence easier resisted by the mass of the floor.

An interesting example of preventing vibration by discord was shown in the case of a Westinghouse 10 H. P. engine which, on an upper story of a silverware manufactory created such a commotion as to rattle the silverware on the shelves 100 feet distant. A change of 25 revolutions in the speed, which change was in the direction of increasing the speed, entirely stopped the vibrations. A most interesting work of this nature, also, is in the great coffee house of Arbuckle Bros. in Brooklyn, where two Westinghouse engines of 125 H. P. each and one of 45 H. P. are located on the fifth floor. These engines were erected on the heavy floor timbers, the floor boards being cut away and extra timbers being inserted between the joints. Across the timbers were placed oak stringers, which latter have been seasoning since the war in some unfinished vessels in the Brooklyn Navy Yard. On these the engines were mounted with plain fly wheels, and experiments were conducted to determine the speed at which it would be best to run. It was found that at 204 revolutions the vibration was at the minimum and was very slight, being as little as that caused by any of the ordinary driven machinery. The speed was therefore fixed at this point, and the wheels then made to give the proper belt speed.

The erection of engines as large as this on upper floors is somewhat novel, and should only be undertaken with full consideration of the surrounding conditions and with engines which are completely balanced.

Most of the old houses on both sides of the Tiber, at Rome, have been removed, fine embarkments of masonry have been erected, slightly deepening and widening the river to an average width of sixty-five yards, and on top of the embankments, on both sides, esplanades are formed as on the Thames embankment at London. One of the new bridges crossing the stream is thirteen yards wide, and near it at either end, stand new buildings seven stories high, completely shutting out the views of the Janiculum and San Pietro hills.

The Romans well understood the necessity of protecting from dust the materials with which they made their mortar; its importance is not sufficiently realized by the builders of to-day, as workmen may often be seen mixing mortar and concrete from materials that have been emptied in piles on a dusty street. More care should be taken by those who desire to get the best results at the least expense.

Washington, Feb. 24.—Secretary Windom has awarded to the Hall Safe and Lock Company of Cincinnati a contract for constructing steel-lined vaults, including two doors, in the Mint building at San Francisco, at their bid of $23,936.

The successful design in the competition for the Prudential Insurance Building at Newark, N. J., was submitted by Mr. George B. Post, architect, of New York. There were five invited competitors.

THE MACHINERY HALL, PARIS EXHIBITION.

Of the splendid series of buildings which formed the great Exhibition of last year, the Machinery Hall was undoubtedly the most magnificent in conception and scale. The architect and engineer specially charged with the design of this immense structure, were M. Dutert and M. Contamin respectively, and the confidence placed in their ability was fully justified by the universal admiration accorded to their great work.

The hall is 1,381 ft. long and 490 ft. wide, inside dimensions, and is divided into one great central nave 375 ft. wide in the clear, and 151 ft. 6 in. high to the ridge of its roof, with an aisle each side 57 ft. 6 in. wide, having a gallery floor over of the same width at 26 ft. 3 in. above the ground level. There are nineteen bays in the length of the hall, viz:—1 bay at each end of 83 ft. 1 in., 1 center bay of 86 ft. 8 in., and 16 intermediate bays of 70 ft. 6½ in.

The side galleries are covered by a series of roofs, one to each bay, which have their ridges at right angles to the axis of the building, and stop against the vertical sides of the center nave just below its eaves, showing a series of low-pitched and slightly curved gables on the lateral facades of the hall. The construction of these side galleries and their roofs, though exceedingly well designed, offers nothing of exceptional interest for our consideration.

It is otherwise with the roof over the great central nave, and a brief description of its principal constructive features, together with a summary of the mechanical principles on which its stability and strength depend, may be of interest as a record, however insufficient, of this remarkable work.

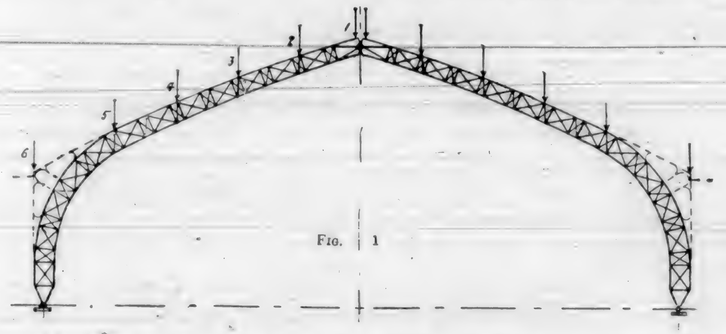

FIG. 1

The roof is carried by eighteen arched principals, at the distances apart above given, and two end principals of exactly similar appearance, but altered scantlings, which are the upper members of the glazed screens forming the end facades of the hall. The arched principals carry on each side the center line five ranges of longitudinal girders or main purlins placed vertically; those nearest the center on each side are only 3 ft. 10 in. apart, and carry a ridge gangway; the other ranges are spaced at a uniform distance apart of 35 ft. 2 in.

Three ranges of intermediate rafters are carried by the main purlins in each bay, following the lightly curved outline of the roof, and these rafters carry thirty ranges of secondary purlins on each side the center line, running continuously over intermediate rafters and main principals, the secondary purlins in their turn carrying the sash bars and light wood framing for the glass and zinc roofing. Each end bay is braced against wind pressure by a system of diagonal tie-rods, extending from the ridge to the gutter on each side.

The four longitudinal bays on each side the ridge between the outer main purlins are glazed in the center seventeen bays of the roof, the lower part on each side in those bays and the whole of each end bay being covered with zinc on boarding and having an inner boarded ceiling.

The sash bars are 2″ by 2″ by $\frac{3}{16}$″ ⊥ iron 6 ft. 6 in. long, resting at each end on the secondary purlins, and fixed to them by cold riveting. They are spaced 1′ 8½″ centers for 20″ glass, and overlap at the lower ends 7 in. The secondary purlins are formed of channel iron 5⅝ in. by 1¾ in., with a 2½ in. by 1¾ in. by $\frac{1}{8}$ in. ⊥ iron riveted on the back to take upper ends of sash bars, the lower ends of same resting on the top of the channel iron. The intermediate rafters are of riveted I section, web 15¾ in. deep by ¼ in., and four ⊥ irons 2.8 in. by 2.8 in. by 0.28 in. They are not continuous, but fit in between the top flanges of the main purlins, and fix to curved plate and angle iron gussets attached to the vertical web members of the latter.

The main purlins connecting the principals are lattice girders with N bracing, and are 6 ft. deep in the middle, becoming slightly deeper towards the ends; the top boom is level, and the lower boom falls from each side center of span, meeting the arched principal at each end with a bold curve. The booms are each formed of a vertical web 14 in. deep by 0.28 in., two angle-irons 2.8 in. by 2.8 in. by 0.28 in., and one flange plate 12 in. by 0.28 in. The lattice bracing consists of diagonal flat bar ties and vertical struts of double T iron. These girders are not radial to the roof line, but are vertical, this being the best arrangement for purlin girders of long span.

Each arched principal consists of two great curved rafters, pivoted at the springings and summit, forming a "three-hinged arch": (see fig. 1). This arrangement allows free movement under temperature changes without strain to the structure, the center rising or falling freely with a slight rotation of the semi-arches about the pivots. A range of temperature of 100° Fahr. corresponds to a difference in level of 2⅞ in. at the center pivot, and a horizontal movement of $\frac{3}{16}$ in. on each side at the level of the side gallery roof ridges, which last amount is small enough to be taken up by the elasticity of the gallery structure. The calculations of the stresses occurring in the principals are also much simplified by the triple articulation, since the forces acting upon each part are definite in direction and point of application. The main dimensions of the arched principals are as follows:—

Spans between centers of pivots at springings 363 ft.; rise to center of pivot at summit 147 ft.; depth of arched rib at springing 12 ft. 1½ in., diminishing to 9 ft. 10 in. at the summit, where the two semi-arches abut against the center pivot. The springing pivots are turned steel pins 20¾ in. diameter, and 4 ft. 4 in. long, enclosed by cast-iron bedplates, having almost complete semi-cylindrical journals, the upper bedplate being bolted to the foot of the rib, and the lower one to a foundation plate which is secured to the foundation block by long bolts. The pivot at the summit is a turned steel pin, 14 in. diameter, and 2 ft. 4 in. long, similarly enclosed by cast-iron journals, each forming an almost complete semicircle, but with a slight space between their faces at top and bottom on the vertical center line to allow of the very small rotation accompanying vertical movement of the summit.

The section of the arched rib is that of a girder with trough booms facing each other, "see figure 2" and connected by St. Andrew's Cross web bracing with radiating struts, which divide the rib into alternately long and short panels. This peculiar panel division was devised to suit the spacing of the main purlin girders, each of which fixes to one of the diagonal bars crossing a short panel, actually vertical. Each boom consists of two side plates 17¾ in. deep by 0.35 in., placed 16 in. apart, a continuous flange-plate 30 in. wide by 0.28 in.; and four angle-irons connecting these plates 4 in. by 4 in. by 0.4 in. The single flange-plate, 0.28 in. thick, extends from end to end of each boom, but they are largely increased in

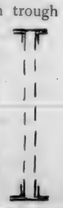

FIG. 2

strength towards the haunches by a number of additional plates of varying length, which are stopped off in order towards the springing and summit. The flange-plates at the greatest section of the lower boom or intrados, occuring opposite the center of outer spandrel, are 1 inner plate of 0.28 in., 4 inner plates of 0.32 in., and 1 outer plate of 0.4 in. It is the same for the up- [illegible] except that the outer flange-plate is re- [illegible]

A large part of our extensive river front, bridges, and viaducts, as well as many of our streets, are now lighted with electricity generated by the city at its own plant. The wires, lamps, and entire paraphernalia are owned by the city, free from any sort of control by private corporations. The system is being rapidly extended so as to embrace the whole city. It is the intention ultimately to make connection with stores, factories, and residences, so as to supply light for private consumption.

In our last issue we published several articles and portions of articles, taken from our exchanges, and by oversight neglected to give the proper credit to which they were entitled. We will consider it a favor if each subscriber will make the necessary corrections in the March number under the uncredited articles as follows:—

The article under the heading of "The Machinery Hall, Paris Exhibition," was an extract from a paper contributed to the *Journal of Proceedings of The Royal Institute of British Architects*, by Henry Reilly, Assoc. M. Inst. C. E. For "St. Louis City Hall Competition" we are indebted to the *Building Trades Journal*, of that city.

THE MACHINERY HALL, PARIS EXHIBITION.

Of the splendid series of buildings which formed the great Exhibition of last year, the Machinery Hall was undoubtedly the most magnificent in conception and scale. The architect and engineer specially charged with the design of this immense structure, were M. Dutert and M. Contamin, [illegible]

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[redacted]

There is an excellent article in *The Architect and Contract* on "Office Management and Routine," by R. W. Gambi Bonsfield.

The Northwestern Architect and Improvement Record for Marc publishes the second Royal Academy Lecture of this season o "Roman Architecture," by Prof. George Aithchinson, A. R. A

Volume 1, Number 1 of *The Architectural and Buildin Monthly*, is the first issue of a new monthly published by A. J Bicknell, New York.

CITY BU

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The radiating struts fit in between the side plates of the boom, and between the outer purlins marked (5) on the figure [fig. 1], consists of a web 15.2 in. by 0.28 in., and 4 angle-irons 3.2 in. by 2.4 in. by 0.28 in. The diagonals are attached to the inner and outer faces alternately of the boom side-plates. Between purlins (5) they consist of four angle-irons only 3.2 by 2.4 in. by 0.28 in. Beyond purlins (5), the angle-irons in struts and diagonals become 2.8 in. by 2.8 by 0.28 in., and flange-plates are added 7.87 in. by 0.28 in.

The lower end of each semi-arch is made of almost triangular form, being narrowed down from 12 ft. at the foot of the lowest bay to 4 ft. at the cast-iron bearing-plate resting on the springing pivot, while the flanges are at the same time widened out to 4 ft.; it has two solid webs with thickening plates, which are reinforced by a diaphragm and gusset plates, with inside and outside angle-irons. The upper ends of the semi-arches are provided with two diagonal struts, formed of plates and angle-irons, which converge to the center pivot and take up the resultant thrust passing through it; these ends have a curved shape between the inner and outer booms, and are stiffened by webs, to which are fixed the ends of the center pair of main purlins, forming here the ridge girders. These girders are connected together opposite to each intermediate rafter by gussets of plate and angle-iron, between which a plate of lead, ⅝ in. thick, is placed, and which yields sufficiently to allow the slight motion due to temperature changes.

The straight sides of the angle spandrel are of the same trough shape as the main booms before described, and of the same scantlings, with the single outside plate 30 in. by 0.28 in. The side-plates are cut so as to form openings of bold curved outline, and between them are fixed radiating members which carry on the lines of the radial struts in the principal, and are of similar construction.

In the plane of the vertical back of spandrel, which is that of the outer enclosure to the center nave, the arched principals are connected together by a series of latticed arches, semicircular on the soffit except in the center bay, and of which the extrados repeats the slightly pointed and curved outline of the side gallery roofs. Uprights in the spandrels of these arches support a continuous purlin girder, which carry the outer ends of all the intermediate rafters of the main roof and also its outside gutters. The principals are further connected by a range of lattice girders carrying the floor and forming the front of the side galleries.

The material employed in the main roof was almost entirely steel, specified to have a breaking tensile strength of 28 tons per sq. in., and a tensile limit of elasticity of 15¼ tons per sq. in.; also that at fracture a reduction of sectional area not less than 45 per cent. should take place, with an extension of at least 24 per cent.

Each ordinary main principal rafter weighed 196 tons, and each end principal rafter 240 tons, the ten main purlins in each bay weighed 42 tons, and the intermediate rafters, minor purlins, and sash-bars had per bay the total weight of 62 tons. The weight of material in the center roof framing per square foot of area covered was 22½ lbs.

MUNICIPAL OWNERSHIP OF ELECTRIC LIGHTS.

Chicago is now engaged in establishing a Municipal Electric Light System. It is an undertaking directly in line with Nationalism. The work has progressed far enough to demonstrate itself a "sure thing," both as to saving money for the people and as a blessing to humanity. It therefore finds hearty endorsement, save only by our Gas Trust and private Electric Light corporations.

A large part of our extensive river front, bridges, and viaducts, as well as many of our streets, are now lighted with electricity generated by the city at its own plant. The wires, lamps, and entire paraphernalia are owned by the city, free from any sort of control by private corporations. The system is being rapidly extended so as to embrace the whole city. It is the intention ultimately to make connection with stores, factories, and residences, so as to supply light for private consumption.

How did we succeed in getting such a work established without being headed off by private monopoly? Through a beginning so small as not to attract special notice! To our faithful servant, Mr. John P. Barrett, City Electrician, are we chiefly indebted for our good fortune. Some two and a half years ago, as Superintendent of City Telegraph Department, Mr. Barrett asked the City Council for a small appropriation with which to experiment in lighting the river front by electricity. About twelve thousand dollars was granted him. With this he purchased a small outfit, and commenced operations in an abandoned Fire Engine House belonging to the city. He laid his wires in the ground, from the first, and started a few lamps on the river front and at certain bridges. The effect was *truly* electric. The dark narrow river, dangerous alike to passing vessels and such people as were belated along its wharves, became like day, and safety was vouchsafed to all within the rays of these lamps. This small venture gave wonderful satisfaction, and the next year, a larger appropriation was voted with which to extend it, and try the lighting of a few streets. Mr. Barrett made the most of his opportunity, and the city's electric lamps soon became noticable on prominent corners.

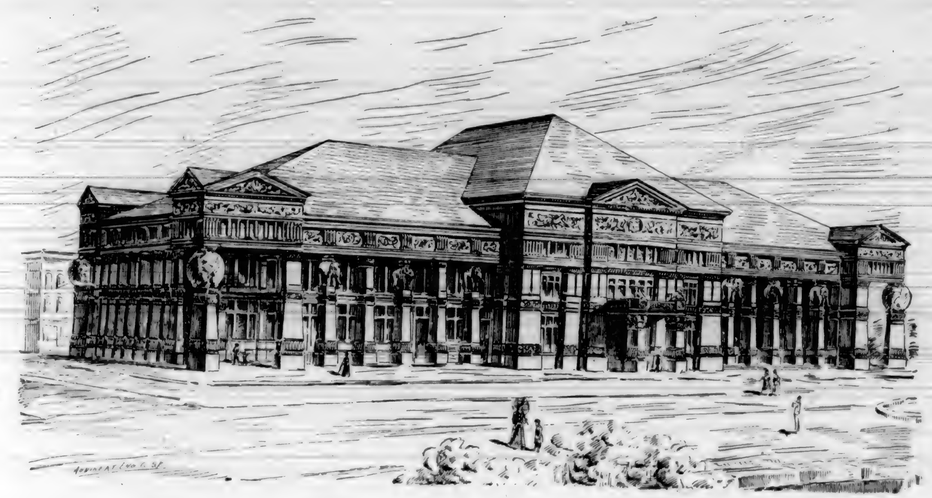
As these increased in number, the councilmen from wards not thus lighted, began importuning Mr. B. for an extension of the service to their wards. They would say to him, "My constituency are observing your electric lights down town, and, as tax-payers, want to know why they can't have the same thing out their way; what's the reason you can't run your wires out to our ward and give *us* the benefit too? To which it gave Mr. B. great pleasure to reply, "that is exactly what I propose to do, just as fast as you gentlemen will vote me the money to do it with." With the "Constituency" thus aroused and making demands, there was little disposition to refuse Mr. Barrett's request for a larger appropriation; in fact a vote against it would be political suicide.

During 1889, there was appropriated for this service, two hundred and seventy thousand dollars ($270,000.) A large part of this sum is being expended in the building of three very substantial plants in as many divisions of the city. These will be completed and running by March 1st, next. In addition, a system of trunk lines is being rapidly extended throughout these districts, the wires being laid under ground. At present the city is operating 310 lamps. By March next 500 more will be added. March 1891 will see another 1000 added, making about 1800 in all. By March 1892, there will be in operation 2500, sufficient to light every street which is now lighted by gas. Chicago will be able to present to its visitors from all over the world in 1892, a sight to be found no where else,—a great city entirely lighted by electricity, the service performed by itself.

The present cost per lamp per night, according to the city electrician's last report, is about nineteen (19) cents. With the new plants in operation, the cost will be reduced to about (50) fifty dollars per lamp per year. St. Louis considers herself fortunate in contracting with a private corporation to supply city electric lighting at $80 per lamp per year, an advance of sixty per cent. over Chicago's cost.

We now pay our Gas Trust the modest sum of six hundred thousand dollars ($600,000) per year for lighting our streets. Our 25,000 electric lamps at $50 each will do it for $125,000,—and, as Mr. Barrett says,—give us forty times the light. The same authority says that the private consumers of the city electricty will pay less than for monopoly gas, and the city still have a profit on the business. In fact, he expects that after a time, the city profit on private consumption, will pay the expense of city lighting, and thus the city save the whole $600,000 per year now paid the gas trust.

Thus is Chicago publishing to the world, in the universal language of dollars and cents, *how much* better and cheaper the people can perform their own service, than they can get it done by farming it out.—*The Nationalist.*



COLORADO MINERAL PALACE.—O. BULOW, ARCHITECT.

We present above the design for a mineral palace to be erected at Puebla, Colorado; the cut is made from the drawings of the architect, Mr. O. Bulow, whose project was chosen from among a number submitted in competition.

The description of the building is as follows, and embodies some very unique and pleasing ideas. The plan is a parallelogram, 333 feet long by 164 feet wide. The main entrance admits the visitor to the central chamber, circular in form, 100 feet in diameter and 70 feet to the apex of the dome which surmounts it, and which is flanked by two smaller apartments, each 75 feet in diameter, of similar finish and design.

It is intended to make the building a permanent exhibit of the various minerals, ores and building stones of Colorado and elsewhere, by so using them that they form a part of the construction itself, instead of being displayed in the usual manner. The various quarries will be each represented by one or more columns or pilasters of the particular variety of marble, granite or sandstone they produce, and the effect secured by the contrasting colors can be rendered very striking, if the designer exercises good judgment in massing his colors—though of course such conglomeration would be inadmissable under ordinary circumstances.

Different mines will contribute specimens of their ores with which to adorn the walls, arches and ceilings, which will contrast handsomely with sparkling galena quartz and pyrite, mica, agate and feldspar. In the center of the middle dome will be a prismatic fountain, modeled after that of the Paris Exhibition. The roof will be covered with burnished copper.

The style of architecture employed is Egyptian, with some details modified to meet particular requirements.

COURT DECISIONS.

Judge Van Reynegom has reversed the judgment of the Justice's Court in a suit brought by the Fire Wardens against Samuel Hancock, for violating that section of the Fire Laws requiring light shafts in all buildings to be lathed with iron lahts previous to being plastered. Hancock was convicted, and fined fifty dollars for having failed to cover the framing in the light shafts at 414 Ellis street, in conformity with the iron laths called for. In the appeal, Judge Van Reynegom, in summing up, said there was no proof that a light shaft or well, according to the meaning of the term, was on the premises; that the ordinance fails to define what constitutes a light shaft, but he presumed it must mean a well-like structure, extending from a skylight to its base, for the purpose of giving light; that as the premises in question had no enclosed shaft, but merely a hand railing running around the hole, and as architects had testified that there was no light shaft in the building, for these reasons he reversed the judgment of the lower court.

While admitting the power of the Board of Supervisors to pass such an ordinance, the Judge declared it had not legally exercised its powers in the present instance.

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhereto contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

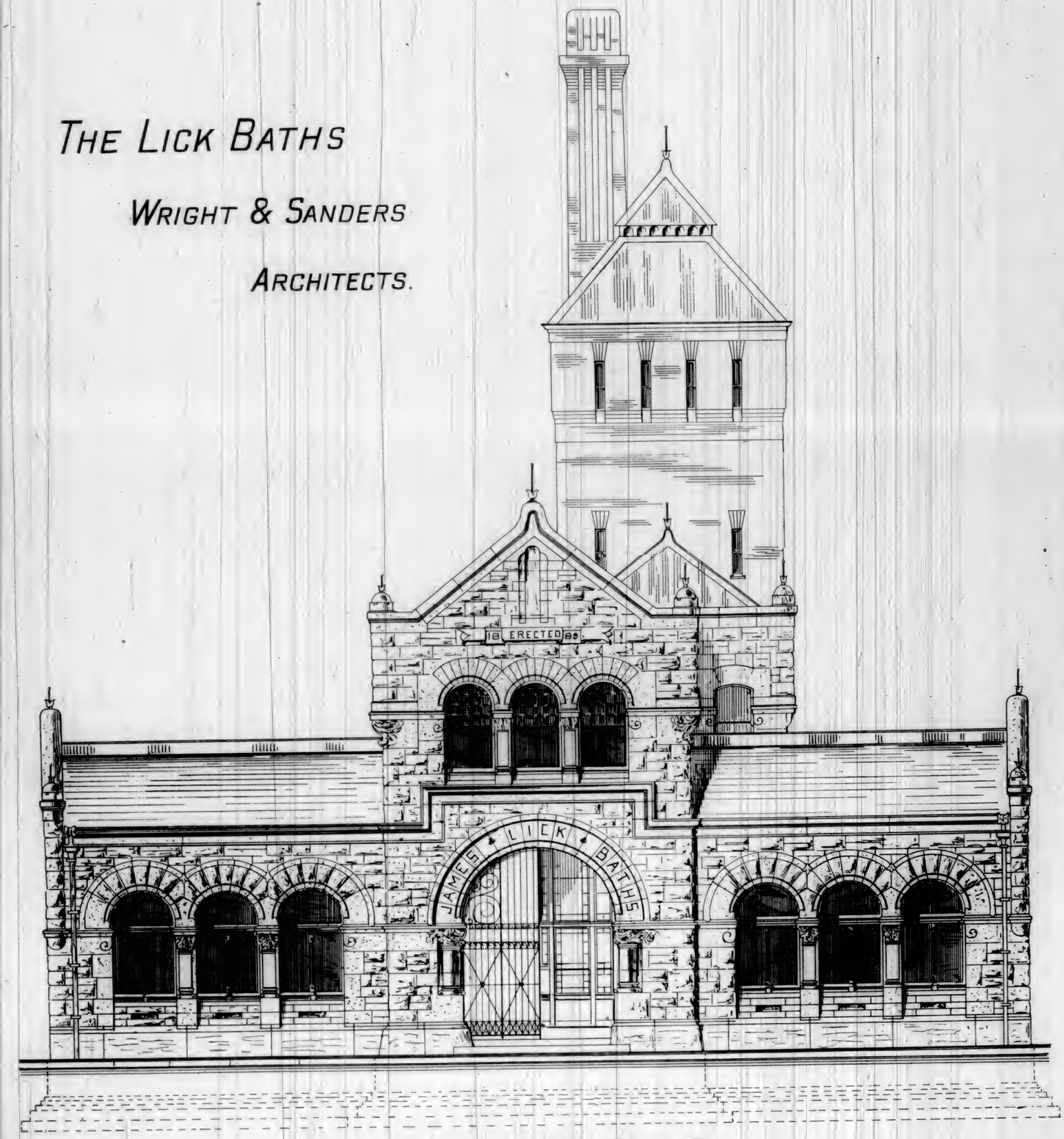
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Our lithographs this month show a residence designed by Architect Young of Los Angeles, and the Lick Free Baths by Messrs. Wright and Sanders of this city. The other designs are described in the text.

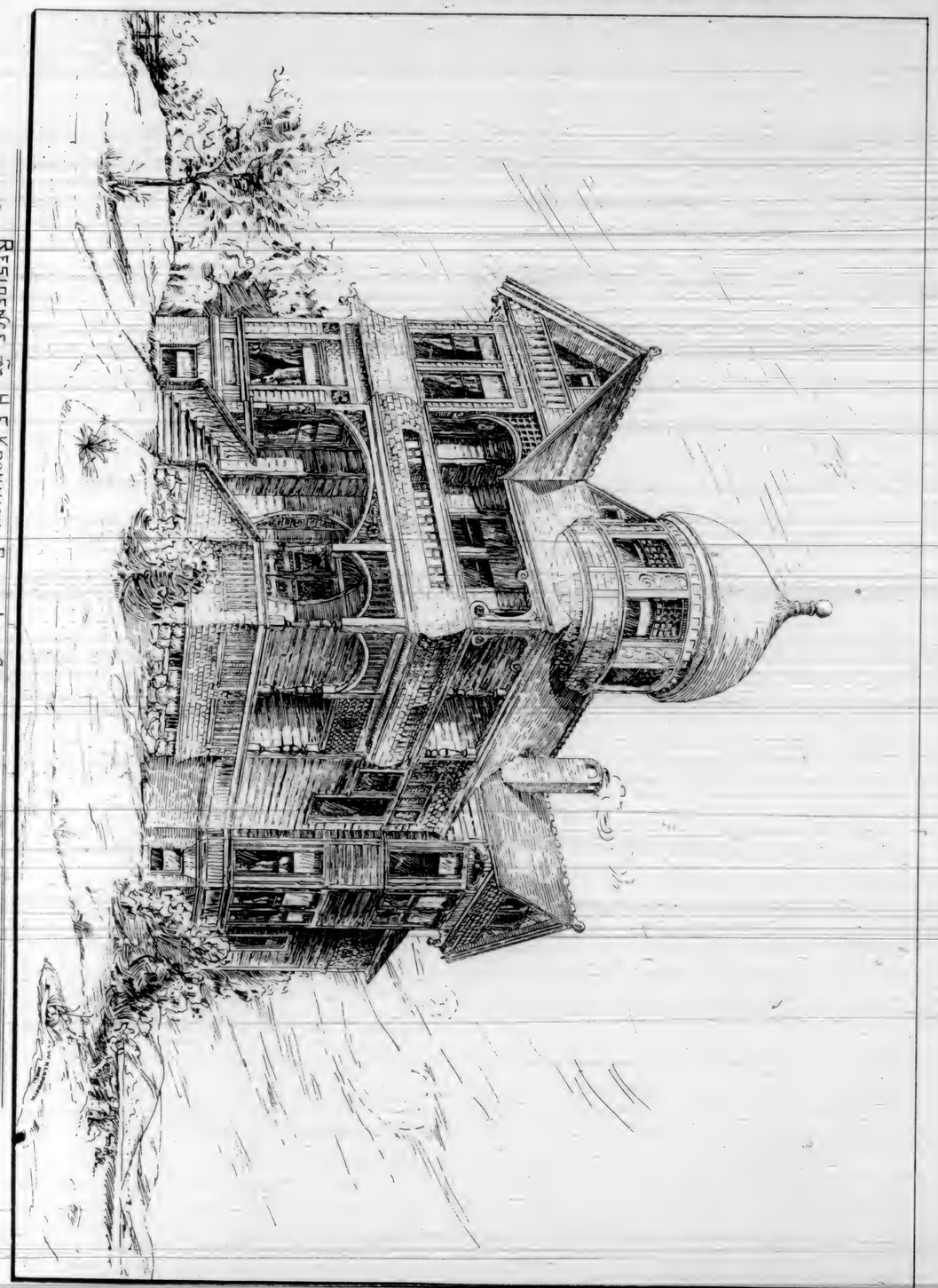
THE LICK BATHS

WRIGHT & SANDERS

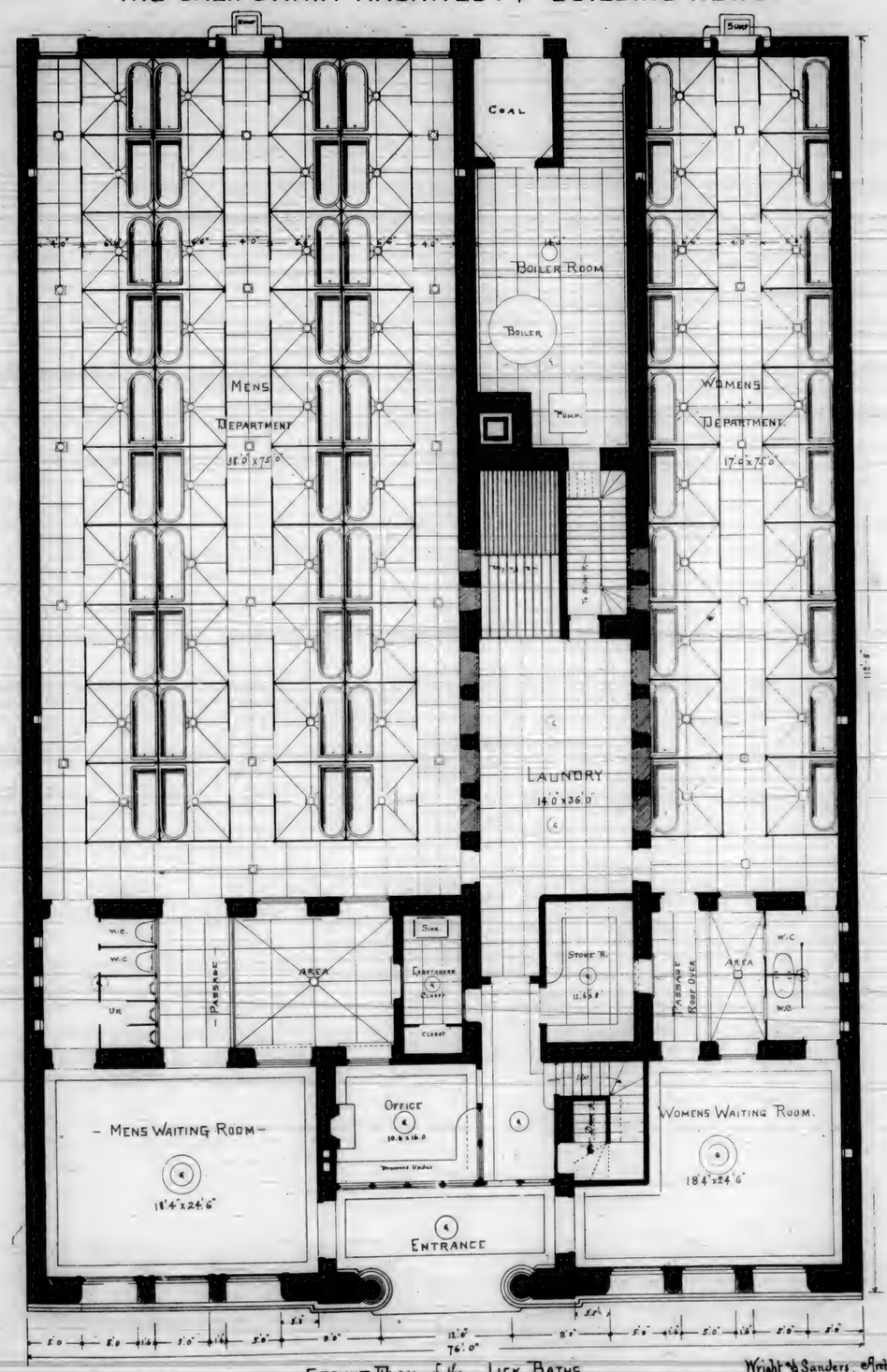
ARCHITECTS.



FRONT ELEVATION ON TENTH ST.



RESIDENCE OF H. E. KRONNICK ESQ. LOS ANGELES, CAL. R. B. YOUNG, ARCHT.



GROUND PLAN of the LICK BATHS Wright & Sanders, Architects.

ST. LOUIS CITY HALL COMPETITION.

The competition for furnishing plans for the new City Hall for St. Louis has at last been decided. The Board of Commissioners held a meeting, at which it was agreed that the three plans marked "Unity," "Pro Patria" and "St. Louis," were especialiy worthy of notice. These designs were put into the hands of Architect James McGrath, of this city, with instructions to report upon the comparative cost of each at the present ruling prices of material and labor. Mr. McGrath reports that this duty has been especially arduous, as the plans were not accompanied with sufficient data on which to make a ready estimate, although the code particularly provided for detailed specifications on which to found a basis of estimate. For this reason the work was delayed.

The City Hall Commissioners met on the 14th inst., in the Mayor's office, Mayor Noonan presiding. All the members were present, and Mr. McGrath was on hand to give an opinion as to the cost of constructing the buildings provided for in the several sets of plans considered the best. Mr. McGrath did not make a formal report, but gave his reasons as to why the set termed "St. Louis, 1892," should be selected. Such a building as would be erected in the event of the adoption of the plans, it was argued, would not exceed the appropriation in point of cost, and would be acceptable in every particular for a model City Hall. The matter was further discussed and the commission then, by a unanimous vote, adopted these plans. It was not known when this action was taken who submitted the plans. When it was adopted, the envelope containing the name of the architect was opened, and it was then ascertained that Eckel & Mann, of St. Joseph, Mo., were the lucky competitors for the first prize, which is $5,000, with privilege of superintending construction.

The five consolation prizes of $1,000 each were then awarded as follows: "Pro Patria," by Sidel, Ginssort & Ginder, of Birmingham, Ala.; "Faith," Carreve & Hastings, New York; "Civic," E. T. Fassett and A. J. Russell, Kansas City; "Star and Crescent," W. H. Dennis, Minneapolis, Minn.; "Unity," James & James, New York.

The high standing of the expert selected is a guarantee that his decision was impartial and his estimates approximately correct. He was prominently mentioned, four years since, in connection with the office of Supervising Architect of the Treasury, and is well known throughout the country.

Mr. McGrath states that the work represented by the 37 plans is worth in the neighborhood of $40,000, and yet the competition has been one of the fairest conducted of late years in this country.

DESCRIPTION OF PREMIUM DESIGNS.

St. Louis, 1892.

This plan received the $5,000 prize. The design is in the Norman-French style of the Fourteenth century and is very handsome and elaborate. Ample provision is made for lighting all the departments. The halls of legislation and the Treasurer's office are given positions of architectural importance, but the latter is unduly prominent externally, while the former are externally diminished in importance by the bays that flank them. The exterior is consequently less expressive than in some of the other designs. It lacks repose and simplicity, being greatly injured by the two bays just mentioned. The main entrance is hardly adequate, but the main hall, the double staircase and the elevators are very happily combined. The stairs, main corridors and offices vary in this respect from admirable to poor. The material will consist of Missouri granite, rock face and St. Louis pressed brick. The dormers and cornices to be composed of terra cotta with finials and crestings of copper. Roof to be covered with copper and slate. The building to be thoroughly fireproof. The floors of the main halls, public spaces and rooms and the wainscoting to be of marble of various hues. The stair cases to be also of marble and stone. The estimated cost of this building is $1,100,000. The architects, Eckel & Mann, of St. Joseph, have been notified to come to St. Louis to confer with the board regarding necessary changes.

PRO PATRIA.

This design was drawn by Sidel, Ginssort & Ginder, of Birmingham, Ala. It was rated by Prof. Ware as the best of the thirty-seven submitted. It is certainly a beautiful design in the Gothic style, but its great comparative cost rendered it unavailable. Mr. McGrath thought that it could not be built for less than $2,000,000.

UNITY.

The claim for this building made by its architect is that it is useful and within the limits of cost. The architectural plan is the peculiar American development of the Romanesque. The details of the design are calculated to withstand the action of dirt and soot. The plan assumes the form of a parallelogram with a large court in the center, lighting the halls, corridors and staircases. There are four principal entrances, those on the east and west wings being covered. A grand staircase leads primarily to the Council and House of Delegates. The cost was estimated by the expert at $2,000,000.

STAR AND CRESCENT.

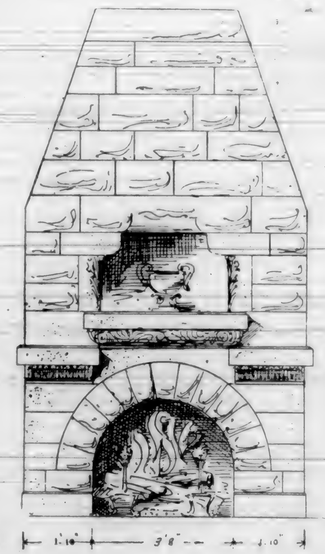
By W. H. Dennis, of Minneapolis. Classic in design, with very ample provisions for light and entrance. This would have made a very imposing building, surmounted with corner and central towers. The specifications provided for the use of saw-dust instead of sand in the plastering.

CIVIC.

By E. T. Fassett and A. J. Russell, of Kansas City. Very handsome, and apparently in full accord with code of competition. Very convenient arrangement of legislative and business departments.

FAITH.

By Carreve & Hastings, New York. Deserving of special mention. Style, French Romanesque, with a few early Gothic features. Thoroughly fire-proof. Ample light and air. Whole building in exact conformity with instructions.



MANTLE IN STONE, FOR THE SUTTER CLUB.
CURLETT AND CUTHBERTSON,
ARCHITECTS.

Most of the architects of Great Britain have signed an agreement not to compete for any building if their designs are to be submitted to anyone for decision who is not an architect known to the profession.

IN THE "VERNACULAR."

The question is often propounded by the inquiring American, Why it is that America is without a distinct American style? Many remarkable attempts have been made to answer this inquiry. Some have even gone so far as to call the attention of explorers and other scientifically inclined minds to the wonderful structures reared by the mound-builders; others have risked life or limb in vain attempts to fathom the mysteries of the cave-dwellers in the wild cañons of Colorado. Others, again, have not hesitated to declare that the Incas have left monumental remains of a long lost art that any nation might be proud of. In fact, archæology itself has been appealed to and invoked to restore to us evidences of a great bygone American architecture, but in vain. The restless American eye has turned itself inward at last, and revealed an astonishing discovery—a style so rich in its decorative emblazonry as to astonish even the learned beholder, displaying to the thoughtful student such a wealth of encrusted enrichments as no Etruscan artificer ever dreamed of. The manifestations of this style are so peculiar and so striking that to understand the meaning of their story needs an erudition that is profundity itself. To see this style developed in its pristine beauty and unrivaled freshness, it is necessary to take a train to any far inland town, particularly if it be near a planing mill. The first glimpse one gets of a dwelling in this style is, of course, the general outline. What this is it would be indeed difficult to say. The sky-line is such a zig-zag contour, with pro-Norman feeling here, unmistakable Queen-Anneism there, Cinquecento yonder, Neo-Grec farther on, that where to begin and where to end is puzzling; but finally the eye itself, after wandering about the maze of sub-roofs, dormers, peaks, turrets, spires, campaniles, light-house bell-towers, smokers' snuggeries, and other quaint modern devices, lights upon the entrance-porch, or verandah, or piazza, or porto-cochere, or Dutch stoop, or reminiscence of Cluny, and is delighted to find—just as expected—that this porch, or stoop, or what-not, is tacked on to the building like a dog-kennel or chicken coop. This feature is noted and commented upon with peculiar satisfaction, for it is one of the unmistakable evolutions of modern architectural progress, and by the one-and-a-half-per-cent. men is styled a "cute" innovation.

What the most marked characteristics of this style are, not to make a long story too short, it would be equally difficult to say, "but there is one thing I hav' notiss," as Mr. Cable's famous creole Narcisse says, and that is the jumble of roofs just cited, the unaccountable corners, angles and elbows of the elevations, the "quaint" (?) breaks in the cornice, the snow traps on all parts of the house and the elaborate schemes of ornamentation offered.

The porch posts, for example, are arranged into compound columns of the most striking orders; one column consists of drum upon drum without base, plinth or capital, the more shown the richer the order. The entablature itself exhibits in a striking degree the triumphs of the modern jig-saw, and the cornice itself is modillioned and encrusted with mouldings to such an extent that one finds it difficult even to count them.

Some one has said that it is to the window we must look for evidence of a new style. Whenever the form of the window, its arrangement or its grouping, has been crystallized into permanent usage, then the world has become enriched by a new style. Applying this dicta to the scene of our investigations, we discover this; in the new style it is the custom to have but one window to a room, and that must be broad and low, and have its upper sash filled with encrusted glass—encrustations still wherever one may look for them—so, we suppose, that the inhabitants thereof cannot see thereout. Some mean and envious and unsuccessful architect has bitterly called this style the "barnacle style," and this outrageous person has gone so far as to divide this style into two groups, one in which the buildings arrange themselves on account of their size, being too great for their purpose, and the other on account of their dimensions being too small for the people who occupy them. But this arrangement and arraignment may, we assure our readers, be passed by with contempt and disdain. The style we have only briefly glanced at is very different from this. We are not responsible for its name; we do not know who is; but the name has passed into history—it fits the architecture as a glove does the hand, and it is needless to say the style of house we refer to is built in the popular "Vernacular."—*Architecture and Building.*

PAINT AND VARNISH BLISTERING AND ITS PREVENTION.

The question of blistered paint or varnish is a very vexed one. It has caused much anxiety and perplexity, and any amount of hard and unjust abuse, simply because it is invariably attributed to the use of inferior materials or "bad paint," as the phrase goes. Those, however, who have had long practical experience, and who have thought the matter well out, will not have the slightest hesitation in saying that it is nothing of the kind, an expression I may, perhaps, before I finish, be able to justify.

I was called in only the other day to examine and pass judgment upon the external painting of a bank, near Manchester. The work was done by a very respectable firm some time ago, and portions of it were fouud to be very much blistered, the lower part of the entrance or vestibule door (which was partly shaded by a lead covered roof) in particular; and to such an extent was this the case that for about eighteen inches from the floor it was a mass of blisters, and from that point upward a beautiful piece of work, as level and smooth as a polished plate. Bad paint or varnish, I think, could not be the cause of this; if so, why was it not blistered all over? How, then, was it to be accounted for? Simply this; the sun's rays striking the door at an angle of about forty-five degrees caused the mischief. This was explained to the manager, and he expressed himself perfectly satisfied on that point; but at the same time made the remark that there were no blisters on the same door when done three years ago. Quite likely, but from experience I find that the more paint or varnish the more blistering, hence the necessity of removing the old paint or varnish before applying the new. The more scientific question may arise, "Why does the action of a moderate degree of heat on the surface of paint or varnish cause blistering?" Because almost every kind of wood, more particularly white and yellow pine, being soft, contain, to a more or less extent, air and moisture, and, as a rule, immediately on leaving the joiner's hands, is painted with a coat of oil priming. Then begins the mischief; coat upon coat of paint follows in rapid succession, until this waterproofing and air-tight process is completed. Kept in the shade, the work is everything that could be desired, and nobody grumbles. No sooner, however, is it exposed to the rays of the sun, than the surface becomes heated (the more so if the paint is dark in color), the air and moisture underneath are expanded, steam generated, and in its effort to escape raises or upheaves the air and water-tight coatings in the form of blisters. Invariably the reputation of the painter is damaged in proportion to the exposure of his work to the destructive power of the sun, an agency over which he has not the slightest control.

Now in the case of iron or other metallic substances being painted, I have stated that soft woods under paint or varnish are more liable to blister than the hard or close-grained qualities, which partake more of the nature of iron and other metallic substances, and which, irrespective of quantity and quality of paint or varnish, or however much exposed to the sun, are seldom if ever found to be blistered. Why? Because the non-absorbent nature of the metals precludes the possibility of air or moisture entering into their composition, hence the absence of blisters as compared with the softer kinds of timber. Then, again, we have internal blistered paint, which in some instances differs in appearance from that already described, being more like heavily embossed leather. It is often deeply furrowed into patches, resemblng in appearance the skin of a crocodile, and in many cases it is drawn into lumps as large and not unlike the form of split peas. This kind of damaged work is from the same cause, and results from long-continued exposure to the sun's rays, which, when reflected or focussed through glass, are much more powerful and destructive in their action on paint on that account. This kind of damaged work is chiefly to be found on the fronts of shutters exposed to the sun in the hottest part of the day, but never on the soffits or other interal or external portions of the painted or varnished wood work, entirely shaded or otherwise protected from the sun.

There is yet, however, another kind of blistering which may be occasionally met with, and in places, too, upon which the sun may never shine. This we find to be the case on newly-plastered walls having been oil-painted too soon, and also in places where old plastered or painted walls have been saturated with water through the bursting of pipes and other accidental causes. Nevertheless, the same influences have been at work, though more unequally combined, or, in other words, less heat on the one side and more water on the other, with the hermetic film of dried paint or varnish between.

It will, I think, be seen from my line of argument, anent the question of blistering, that practical prevention in the case of oil paint or varnish is almost impossible, and could only be accomplished—first, by the use of white paint only, the destructive power of the sun upon dark surfaces having little or no effect upon white; second, by extracting the air and moisture effectually from the finished wood work in a heated chamber, and, on the instant, coated over with linseed oil priming; third, by complete protection from the sun; fourth, by stopping the sun from shining, which, I think all will agree, would be the greatest impossibility of all.—JAMES RENWICK, in *The National Builder.*

WASHINGTON'S BIRTH-DAY.

Architecture and Building, commenting on the anniversary of Washington's birthday, says:

The grave of Washington's mother is without a monument, and the money for the Washington Memorial Arch comes in but slowly, although the design has been accepted with universal approval. One magnificent edifice we may consider a memorial of the great statesman—the Capitol at Washington—the site of which was selected by President Washington in 1791. A plan was prepared by Dr. William Thornton, of Pennsylvania, and, after material changes, it was approved by Washington and submitted to Stephen Hallet, a French architect, to whom was entrusted its execution. On September 18, 1793, the corner-stone of the edifice (southeast corner) was laid by Brother George Washington, assisted by the Worshipful Masters and Free Masons of the surrounding cities, and the military and a large number of people. The silver plate deposited in the cavity of the stone bore the following inscription: "This south-east corner-stone of the Capitol of the United States of America, in the City of Washington, was laid on the 18th day of September, 1793, in the thirteenth year of American Independence, in the first year of the second term of the Presidency of George Washington, whose virtues in the civil administration of his country have been as conspicuous and beneficial as his military valor and prudence have been useful in establishing her liberties, and in the year of Masonry 5793, by the President of the United States, in concert with the Grand Lodge of Maryland, several lodges under its jurisdiction, and Lodge No. 22, from Alexandria, Virginia. Thomas Johnson, David Stewart and Daniel Carroll, Commissioners; Joseph Clarke, R. W. G. M. P. T.; James Hoban and Stephen Hallet, Architects; Collin Williamson, M. Mason." It may be interesting to note here the other architects employed on the erection of the Capitol: In 1803 R. H. Latrobe was appointed architect; in 1818 Charles Bulfinch had charge of the work, and in 1851 Thomas U. Walter's plans for the extension were accepted. It is stated that the cost of the Capitol has been less than that of the Court House in our City Hall Park! being estimated at $13,000,000.

NOTES & COMMENTS.

The new company that is to supply East St. Louis with gas is to receive 50 cents per thousand.

We regret to chronicle the death of architect Geo. H. Miller, whose office was in the Flood Building.

Owing to complications arising from the death of Mr. Gray, of Gray & Stover, the firm has assigned the contracts it had on hand at the time of Mr. Gray's death, to be completed by the assignees.

We see that the French authorities have issued an order directing the secretary and others connected with collapse of the copper syndicate to be handed over to the correctional police to be dealt with.

There is now being erected a skating rink in Paris, covering a plot of ground about 300 feet in diameter. The ice will be made artificially. Would not such a rink pay in San Francisco?

The Boston Architectural Club proposes to hold an exhibition of architectural work, beginning May 12th, and continuing three weeks. Contributions should be sent in not later than April 15th. R. C. Sturgis is the Secretary of the club.

Doe Brothers, sash and blind manufacturers at 44 Market street, San Francisco, are about to construct a six-story building on the gore lot bounded by Market, Hayes and Larkin streets. A theater, second only in capacity to the Grand Opera House, and of most modern style, will occupy a portion of the buiiding.

The National University of Chicago has arranged for a National Circulating Library of 20,000 volumes, to aid in its University Extension work, modeled after the English system. The The volumes will be sent by mail from Maine to Texas. It will supply a long felt want. To cover expenses, catalogues are sent only on receipt of ten cents. Address 147 Throop street, Chicago, Illinois.

Los Angeles gets her additional appropriation of $370,000 for the enlargement of the postoffice building. This was a necessary step to insure a suitable Federal building for the city. It is to be hoped that this money will be available at an early day, and that work on the structure will soon be resumed. The coming summer may be a quiet one in business, and the employment of mechanics and laborers on this building will help out materially.

Wm. Ward, an architect of Salt Lake City, suggests that future competitions require drawings to be made to a scale much smaller than that usually employed, say 20 or 25 feet to the inch, such drawings to be made with black ink *only*, and any drawings submitted larger than called for to be reduced by photography to the standard scale before being compared with the other designs. This would save competitors much labor in making elaborate drawings and allow many sets of drawings to be examined and compared at the same time.

Four women were engaged last week working as bricklayers on a building corner of Montgomery avenue, Dupont street and Hinckley alley. All the four were dressed in men's clothes, and though not very competent workmen toiled very faithfully and hard. The occasion of the work was the order of the Street Superintendent that a brick foundation should be built under the wooden house on the corner. Although willing the women were not skillful, and yesterday regular male brick-layers were called in to take down what the women had built, and construct the foundation in a proper manner. It is stated that one of the women insisted on doing the work herself and superintending the job.

The report of the Grand Jury shows that a new county jail is an imperative necessity. The present one is neither safe nor comfortable. The property of the people of this city has been pretty severely taxed the past year, but we do not know that this fact has anything to do with the obligation of the people to maintain safe and healthful public buildings. If the people cannot find some way to elect men to responsible offices who will not waste a third or more of our municipal revenues, they must stand the consequences of their own incapacity. But the small taxpayer, who has just succeeded in getting together the heavy tax of last year, will be inclined to ask himself why, with all these taxes, the city is in need of so many things. It is not only the County Jail, but the school-houses, the Police and Fire departments which are kept in a state of inefficiency by the lack of conveniences which are supplied in other cities with less revenue than we provide.

The American Architect and Building News has the usual quantity of interesting matter.

In the *Architectural Era* for February will be found a continuation of *Good Things Gleaned from Different Eras of Architecture.*

Our esteemed contemporary and near neighbor, *Industry*, will soon have to increase the number of its advertising pages. No better proof could be had of its success.

Architecture and Building under its new name, presents an improved appearance. Its issue of February 15 concludes an article on *The Influence of Materials on the Development of Architecture.*

The Engineering and Building Record for February 15, contains a plan and description of the office of Shepley, Rutan & Coolidge, architects, of Boston, and an interesting account of how these gentlemen conduct their extensive practice.

The National University of Chicago announces a new Spanish Grammar in preparation. It is by Prof. Schele de Vere of the University of Virginia, is written on a novel plan, and will form one of the "University" series of text books.

The February number of *The National Builder* contains, part V of Adolph Cluss' article on *Mortars and Concretes of Antiquity and Modern Times*, describing the manufacture of Portland cement and the chemical actions of its component parts also.

An article by James Renwick, on *Paint and Varnish Blistering and Its Prevention*, and installments of the articles on *Ventilation of Sewers*, and *The Art of Drawing.*

The *Building Budget* for January contains translation of *Viollet le Duc's Dictionnaire Raisonee de l'architecture* and an interesting article on *Adoban Architecture by Andre Matteson*, and proportion in Doric architecture by *Prof. A. Thiersch*, translated by *Prof. N. Clifford Ricker*, also the proceedings of the joint meeting of the Chicago Chapter, A. I. A., and the Illinois State Association of Architects, at which their consolidation was effected.

The February number of the *Western Architect and Building News* is one of the two *special numbers* issued during the year, and is thoroughly deserving of *special* mention. The gelatine plates are as near perfection as choice of subjects, and skill in this process of reproduction combined can attain. The most interesting plates are a general view of the Chicago Auditorium Building, Adler & Sullivan, architects, an interior of the Kansas Senate Chamber, L. M. Wood, architect, a residence designed by John J. Huddart, architect, and a perspective view of the Peoples' National Bank Building by F. E. Edbrooke & Co., architects.

The National Magazine for March, contains the continuation of an interesting article by Prof. Schele de Vere of the University of Virginia, entitled *How We Write*, giving many curious historical facts. Rev. J. C. Quinn, L. L. D., contributes *Biblical Literature.* F. W. Harkins, Chancellor of the National University of Chicago, describes the workings of the *National Circulating Library* of 20,000 volumes and the new non-resident courses of study of the University. A timely article on the University Extension system of England is by Rev. C. C. Willett, Ph. B. The ladies will be particularly interested in the new Woman's Institute and a unique plan, here described.

Published on the 1st of each month at 147 Throop street, Chicago, Ill. Sample Copy, 10 cents.

THE LICK BATHS.

We are enabled to present to our readers this month through the kindness of the architects, Messrs. Wright & Sanders, the design for the Lick Free Baths now being erected on Tenth street near Howard street, in this city.

The deed of trust, executed by the late James Lick, providing for the construction and perpetual maintenance of free public baths in this city, reads as follows:

"And in further trust to expend the sum of one hundred and fifty thousand dollars under direction of H. M. Newhall, Ira P. Rankin, Dr. J. D. B. Stillman and John O. Earl and the survivors of them, in the erection and maintenance in the city of San Francisco of free baths, the site or sites therefore to be acquired and held by the persons last named and the survivors in trust forever to maintain such baths for the free use of the public under proper and reasonable regulation, said baths to be erected as soon as practicable to raise the money after the money has been provided to erect said telescope."

The building has now been in course of construction for several months past, and is so far advanced as to afford the observer a good idea of the handsome appearance it will present when completed. The facade has a frontage of 76 feet and the material employed is San Jose sandstone, very effectively treated. The main entrance is in the center, and opens into a spacious vestibule, flanked by separate waiting rooms for men and women. There are forty separate bath rooms in the men's department, and half that number in the women's; each room is furnished with an enameled iron bath tub, and the whole well lighted by large skylights.

Tanks for hot and cold water are located in the tower, which is situated near the center of the building.

Apartments have been provided for the employees in the second story, and every convenience provided for the work they will be called on to perform,

Following that which we have written relative to the *Lick Baths*, we learn that the *Joshua Hendy Machine Works*, whose place of business is at No. 54 Fremont Street, this city, furnished the boiler, engine and all of the necessary shafting, pulleys, etc., connected therewith and as well the *Laundry Machinery* from the Pacific Laundry Machinery Company.

This Laundry Machinery comprises hot and cold water tanks having a capacity of 10,000 gallons each, and the further assessories of a washing machine, mangler, centrifugal hydro-extractor, soap tanks, etc.

The drying room is to be specially constructed of iron upon plans and specifications prepared by the manager of the Pacific Laundry Machinery Company, the office of which is at No. 51 Fremont Street, this city.

Mr. Jos. F. Forderer, 226 Mission street, is doing the galvanized iron and slate work. The front roofs are covered with California slate, the rear ones being of corrugated iron. The skylights are built with the Forderer patent, of which Mr. Forderer is the patentee. Persons contemplating building should call on Mr. Forderer and inspect his skylight, as it has many advantages over other styles. The partitions in the bathing department are all built of galvanized iron. Mr. Forderer is well known to the building community and the public in general, as doing nothing but first-class work in his line of business, and having acquired an enviable distinction will always endeavor to maintain it.

The plumbing in this establishment is, as its name implies of great importance and the work therefore was to be done in the most approved sanitary manner, and with the lastest and best plumbing appliances as well as to have it durable. Mr. W. F Wilson, whose place of business is at 204 Stockton street in this city, was therefore choosen by the architects and the trustees for the Lick Baths, to perform this branch of the building, and who has spared no time or trouble to make the plumbing in this building, a credit to those who entrusted him with this work as well as to himself. The drainage pipes are of extra heavy cast iron, and so arranged under the cement floor that any part of it can be cleaned or flushed at any time, these drain pipes empty into large cast iron tanks specially designed for this building by Mr. Wilson, and by this means making it impossible for sewer gas to enter the building. As an extra precaution, the drains are constructed in such a manner, that there is a constant circulation of air passing through these pipes from rear to front of building.

The traps for bath-tubs, catch-basins or floor strainers are of a unique pattern as are also the waste and supply fixtures to the bath-tubs. A marked feature in this plumbing is the absence of lead pipes, no lead pipe of any kind to be used in the connection of any part of the plumbing in the Bath House, all material being extra heavy, strong, cast iron, or heavy brass, thereby avoiding the risk of having any part of the plumbing damaged by carelessness or intent; the bath tubs, made of solid porcelain, are 2½ inches thick and weigh each about 800 lbs. Each tub is set and connected in such a manner that it can be uncoupled and removed without interfering with any other part of the plumbing,—the supply to the bath-tubs are taken from two large tanks situated in tank-tower, and consist of galvanized iron pipes 4 inches in diameter, and sufficiently large to fill each tub in about 2 minutes. A large and commodious room is fitted up for gentlemen with a combination needle and shower bath something entirely new, and will be enjoyed by those who know the benefit of such a luxury, the plumbing in lavatories and toilet rooms are in keeping with the work in the bath-rooms. The water-closets are of the latest approved pattern, with a large square opening and are known as the *Pedestal Syphonia*, each water-closet is furnished with an antique oak seat and cistern and is automatic in action, the urinals are of petroleum, the floors, sides and back of which are of California slate, the supply to each through an automatic periodical flushing cistern.

J. Steuart Mackay, whose office is No. 330 Sutter Street, room 3, has the contract for the performance of the carpenter work. Mr. Mackay is a well known builder of long standing in the community, and has erected many prominent buildings in and around this city. Being a thorough man of business as well as a competent mechanic, attentive to his work, and careful to fulfil all agreements to the satisfaction of his clients; it may be stated without hesitation that he will take particular pride in carrying out this important contract, in such a manner as to reflect credit on himself and the architects who designed the work.

Messrs. W. W. Montague & Co., of 309 and 317 Market street, have the contract for the tile work and their name is a sufficient guarantee that the work will be done in an artistic manner and the material will be of the best.

The offices and waiting rooms are wainscoted with English glazed tile in light cream with a Grecian border in colors, and the floors and halls of the rooms are laid with encaustic tileing in mosaic designs and colors. The walls of the main bath rooms are all wainscoted with English cream colored tile from floor to ceiling with a Tennessee marble base running all around.

The plastering has been let to Mr. Charles Dunlop, who is an experienced man in his line of business, and as the result of his knowledge and ability, he secures a great deal of the best work in the city. His headquarters are at 330 Pine street, at the Builders' Exchange. Among the prominent buildings lately plastered by Mr. Dunlop, may be mentioned the First National Bank, corner of Sansome and Bush streets, and the Strathmore Apartment House on Larkin street. He has also contracted to do nearly twenty thousand dollars worth of work for the new building now being erected for the California Academy of Science on Market street.

Messrs. Fraser & Keefe, the well known painters of 317 Sutter street, whose exhibit at the last Mechanics' Fair attracted such universal attention, have the contract for the painting and glass work. The work done by these gentlemen speaks for itself. By a long series of experiments they have discovered certain methods of treating natural woods so as to bring out the beauties of the natural grain, and persons wishing to have this kind of work done in a first-class manner, would do well to call and examine specimens of wood so finished, which can be seen at their place of business, 317 Sutter street, between Grant avenue and Stockton street.

Mr. George Goodman, of 307 Montgomery street, has the contract for the foundation and artificial stone work. As the foundation of a building designed to stand for any length of time is of the first importance, it is essential that the composition be the best and that the mixing be done in a thorough manner; his name is a guarantee that the requirements called for has been fulfilled. The sidewalk will be laid with artificial stone, of which he is the patentee and manufacturer. Mr. Goodman has had many years of experience in this business, and does nothing but first-class work.

CITY BUILDING NEWS.

Alpine and Fourteenth. 3-story; owner, D. Swannack; architects, Townsend & Wyncken; contractor, D. Currie; cost, $5,494; signed, Feb. 19; filed, Feb. 19; payments: $600, main floor beams are on; $400, framed: $1,168 ready for lathing; $1,000 work is up and primed; $500, white coat of mortar is on; $500, inside is trimmed; $1,366, 35 days.

Bryant and Third. Concrete cementing and excavating; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, Chattain Gilletti; cost, $20,500; time, 68 days; sureties, Byron Diggins & Diggin Bros., $13,000; filed, Feb. 25; signed, Feb. 24; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Brick work; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, J. W. Wissinger; cost, $24,850; sureties, C. C. Rohlffs and D. Dodge, $16,000; filed, Feb. 25; signed, Feb. 21; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Stone and plastering; owner, E. G. Lyons & Co., architect, Wm. Mooser; contractor, Jno. McCarthy; cost, $13,284; time, 60 days; sureties, J. F. Logan and T. W. Peterson; signed, Feb. 21; filed, Feb. 25; payments, 75 per cent. of value of work done; balance, 35 days.

Church, between Ridley and Fourteenth streets. Owner, Ann Shattuck; architect, T. J. Welch; contractor, Jas. Campbell; sureties, A. W. Starbird and J. B. Goldstone, $5,000; time, 3 months; signed, Feb. 24; filed, Feb. 28; payments, $1,925, enclosed: $1,925, brown coated; $1,925, completed; $1,925, 35 days.

Chattanooga and Twenty-Fourth. Frame building; owner, Robt. McElroy; architect, J. Marquis; contractor, David Perrey; cost, $2,225; signed, March 4; filed, March 4; payments, $350, chimneys are up; $400, building is ready to lath; $400, brown coat of mortar is on; $315, completdd; $360, 35 days.

Drumm and Sacramento. Carpenter work; owners, Mahony Bros.; architects, Ashton & Stone; contractor, John Trotter; sureties, John F. Kennedy and Geo. T. Shaw, $2,000; cost, $5,559; signed, Feb. 27; filed, Feb. 28; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

Ellis and Franklin. Frame building; owner, Henry Payot; architect, Wm. Mooser; contractor, M. C. Lynch; cost, $5,362; sureties, Henry Blythe and J. T. Trott, $3,000; signed, Feb. 13; filed, Feb. 18; time, 75 days; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Buchanan. Painting and graining; owners, Morris Brinn and Philip Flatlow; architects, Salfield & Kolberg; contractor, J. A. Mohr; cost, $850; signed, Feb. 17; filed, Feb. 17; payments, $300, outside has two coats; $325, accepted; $225, 35 days.

Eleventh and Folsom. To complete building; owner, Jas. Scobie; architect, Oliver Everett; contractor, Cook Stover; sureties, Jno. Wagner & Chas. Dunlop; filed, Feb. 19; signed, Feb. 19.

Ellis between Polk and Van Ness Avenue. 3-story frame; owner, A. Pauba; architects, Kenitzer & Kollofrath; contractors, Shutt & Kreker; sureties, T. Hock and J. C. Jensen, $8,000; cost, $9,257; time, May 31, '90; signed, Feb. 18; filed, Feb. 19; payments, $1,500, frame is up; $1,200, roofed; $1,500, first coat of plaster is on; $1,200, plastered; $1,457, entire work is completed. $2,700, 35 days;

Ellis and Buchanan. Carpenter work; owner, Morris Brinn & Philip Flatlow; architect, Salfield & Kohlberg; contractor, H. Holzenberg; sureties, J. F. Kennedy and Geo. T. Shaw, $13,000; cost, $13,000; signed, Feb. 7; filed, Feb. 17; payments, $1,000, up to second floor; $2,000, framed; $2,000, partitions set; $2,000, doors and windows hung; $2,750, accepted; $3,250, 35 days

Ellis and Buchanan. Plumbing, etc.; owner, Morris Brinn & Philip Flatlow; architect, Salfield & Kolberg; contractor, Sam'l Ickelheimer; cost, $1,550; signed, Feb. 7; filed, Feb. 17; payments, $500, rough work is in; $650, accepted; $400, 35 days.

Ellis & Buchanan. Plastering; owners, Morris Brinn & Ph. Flatow; architect, S. V. Kohlberg; contractors, Brennan & Fraser; cost, $1,569; signed, Feb. 24; filed, Feb. 28; payments, $600, brown coat is on; $869, plastering is finished; $400, 35 days.

Ellis and Leavenworth. 3-story frame; owner, Chas. Meyer; architects, John & Balczynski; contractor, Wm. Pluns; cost, $13,640; signed, March 1; filed, March 3, payments, $2,500, frame; $2,500, partitions are set; $2,500, outside finish is on; $2,-780, inside finish is on; $3,410, 35 days.

Ellis and Franklin. Plumbing, etc.; owner, Joseph Getz; architect, Wm. Mooser contractors, Thos. Clark & Son; cost, $1,100; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Leavenworth. Concrete work; owner, Johann A. Schmidt; architect, Julius E. Kraft; contractors, Ransome & Cushing; sureties, C. E. Greene and F. M. Smith, $3,000; cost, $4,173; signed March 1; filed March 3; payments, $1,400, all walls are up to one-half height; $1,723, completed; $1,150, 35 days.

Ellis and Franklin. Carpenter work; owner, Jos. Getz; architect, Wm. Mooser; contractor, J. R. Whalen; sureties, O. H. Greenwald and J. Levi, $9,000; cost, $13,482; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 25 per cent., 35 days.

Ellis and Franklin. Artificial stone work; owner, Jos. Getz; architect, Wm. Mooser; contractor, Geo. Goodman; cost, $835.50; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance when completed.

Grove and Shrader. One-story cottage and 2-story stable; cost, $4,000; owner, John Hasshagen; contractors, Droge & Munster; time, 100 days; signed, Feb. 24; filed, Feb. 28; payments, $750, rough frames are up; $750, brown coated; $750, outside finish on; $750, accepted; $1,000, 35 days.

Grove and Lott. Frame building; owner, Chas. G. Gebhardt; architect, Edward Burns; contractor, Jas. J. Mauseau; sureties, Jas. Greig and Ed. P. Blake, $1,800; cost, $3,500; time, 75 days; signed, Feb. 17; filed, Feb. 28; payments, $750, rough frame is bridged and braced; $800, rough plumbing done; $1,100, completed; $940, 35 days.

Golden Gate Ave. between Baker and Lyon. Frame; owner, Henry Osbourne; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, $8,000; time, 90 days; signed, March 5; filed, March 7; payments, $2,000, framed; $2,000, brown coat of mortar is on; $2,000, white coat of mortar is on; $2,000, 35 days.

Hyde and Vallejo. Alterations, etc. Owner, Mrs. Duffy; architect, J. F. Hayes; contractor, J. F. Hayes; cost, $340; signed, Feb. 17; filed, Feb. 18; payments, $100, roof of old house is shingled; $60, floor is laid; $100, brown mortar is on; $100 complete; $180, 35 days.

Harrison and Sixth. 3-story building; owner, J. Verdenhalven; architect, Henry Geilfuss; contractor, Henry Minster; cost, $3,475; signed, Feb. 28; filed, March 1; payments, $650, framed; $650, partitions are set; $650, finish completed; $655, completed; $870, 35 days.

Hardy and Kearny. Cast-iron work; owner, G. T. Watterson; architect, J. Marquis; contractors, O'Connell & Lewis; cost, $6,745; signed, Feb. 28; filed, March 3; payments, $1,700, third story joists are on E. ⅓ of building; $800, third story joists are on W. ⅓ of building; $1,660, completed; $1,745, 35 days.

Howard and Eighteenth. 3-story frame; owner, Wm. Perkins; architects, R. H. & R. White; contractors, H. O. Noyes & E. W. Hyde; cost, $6,657.50; signed, March 1; filed, March 1; payments, $887.50, roof boards are on; $1,000, rear frames are up; $1,100, brown coat of mortar is on; $1,000, standing finish is on; $1,000, completed; $1,670, 35 days.

Hardy Place and Kearny. Carpenter work; cost, $11,325; owner, Chas. Schroth; architect, J. Marquis; contractor, J. R. Wilcox; signed, Feb. 25; filed, Feb. 27; payments, $2,800, roof joists and boards are on; $2,800, building ready to lath; $2,850 accepted; $2,975, 35 days.

Hardy Place and Kearny street. Grading, excavating, brickwork, iron work, etc; cost, $32,005; owner, Chas Schroth; architect, J. Marquis; contractor, Geo. T. Matterson; filed, Feb. 27; signed, Feb. 25; payments, $2,000 E½ of basement is up; $5,500, third story joists are on E½; $2,000, W½ of basement is up; $5,500, joists are on third story; $2,000, fifth story floor joists are on; $6,950, brick work is all finished.

Howard and Capp. Cost, $3,260; owner, Mary E. Von Shroeder; architect, T. J. Welch; contractor, Gray Bros., A. S. P. Co; filed, Feb. 26; signed, Feb. 16; payments, 75 per cent. of value of work done; balance, 35 days.

Howard and Tenth. Machine work; cost, $6,965.

Hardy and Kearny. Stone-work; owner, G. T. Watterson; architect, J. Marquis; contractors, F. E. Knowles & Co.; cost, $2,960; signed, Feb. 28; filed, March 3; payments, $500, third-story joists are on E ½ of building; $700, third-story joists are on W of ½ building; $1,000, completed; $760, 35 days.

Hardy and Kearny. Wrought-iron and steel work; owner, G. T. Watterson; architect, J. Marquis; contractors, C. Nutting & Son; cost, $3,000; signed, Feb. 28; filed, March 3; payments, $1,700, third-story joists are on E. ⅓ of building; $800, third-story joists are on W. ⅓ of building; $650, completed; $750, 35 days.

Jackson and Scott. Owner, Albert Gallatin; architect, Clinton Day; contractor, John T. Grant; cost, $37,591; time, 5 months; signed, March 5; filed, March 7; payments, $4,500, roof is ready for slating; $9,000, prime coat of paint on; $10,500, all inside finish is on; $4,194, completed; $9,397, 35 days.

Laguna and Pacific Avenue. Carpentry work of seven houses; owner, D. F. Walker; architect, Wm. F. Smith; contractor, F. W. Kearn; cost, $36,500; signed, Feb. 15; filed, Feb. 19; payments, $6,483.75, framed; $6,483 75, ready for plaster; $6,483.75, standing finish is on; $6,483.75, completed; $9,125, 35 days.

Larkin street wing of New City Hall. Brick work, etc. Owners, Hughes & Foster; architect, W. Patton; contractor, J. Wagner; cost, $4,000; signed, Feb. 14; filed, Feb. 18; time, 3 months; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

McAllister and 1st Avenue. 1-story and basement; cost, $1,350; owner, Mrs. Limmermann; architect, P. R. Schmidt; contractors, Droge & Munster; time, April 18, 1890; filed, Feb. 27; signed, Feb. 24; payments, $350, frame is up; $350, roof is on; $350, outside finish is on; $350, finished.

Market and Golden Gate Avenue. Brick-work; owner, Joseph Donohue; architect, A. Page Brown; contractors, Richardson & Gale; cost, $39,260; signed, March 5; filed, March 4; payments, 75 per cent. of value on work done on the first Friday of each month; balance, 35 days.

Nineteenth and Fair Oaks streets. 2-story frame; owner, Jno. Roberts; architect, Chas. Shaner; contractor, Chas. H. Foster; surety, J. Pierce and E. B. Dunning, $1,200; cost, $2,460; time, 105 days; signed, Feb. 14; filed, Feb. 17; payments, $300, frame is up; $400, cornice on; $400, stairs up; $350, brown mortar on; $395, windows are in; $675, 36 days.

New City Hall. Plumbing and gas fitting; contractors, Lawton & Britt; owners, Hughes & Foster; cost, $2,789; signed, Feb. 11; filed, Feb. 18; payments, 75 per cent. of value of work done; balance, 35 days.

Oak & Devisadero. Three 2-story frames; owner, Charles C. McDougall; architect B. McDougall & Son; contractor, John H. McKay; cost $8,000; signed, March 1 filed, March 1; payments, $1,400, framed; $1,400, brown coated of mortar is on; $1,400, one cont of paint is on; $1,500, completed; $2,000, 35 days.

Oak and Devisadero. 2-story frame; owner, M. J. Sahlein and wife; architect, B. McDougall & Son; contractor, Alex. J. Wheeler; cost, $6,200; signed, March 1; filed, March 1; payments, $500, basement story up; $600, framed; $600, roof tinned; $600, inside stairs up; $600, brown mortared; $600, white mortared; $700, completed; $2,000, 36 days.

Polk, between Hayes and Fell. 3-story frame; owner, Mrs. M. Ivine; architect, P. R. Schmidt; contractor, Wm. T. Commary; sureties, C. G. Greenwald and G. Kurster, $8,050; signed Jan. 28; filed, Feb 15; cost, $8,050; time, 100 days; payments, $1,500, rough frame up; $1,500, brown mortar on; $1,500, hard finish on $1,500, completed; $2,050, 35 days.

Page and Ashbury. Two frame stable; owner, J. L. White; architect, A. J. Barnett; contractor, Rountree Bros.; surety, F. Joost, $5,500; cost, $6,875; time, 75 days; signed, Feb. 15; filed, Feb. 18; payments, $1,500 roof boards are on; $1,000 brown mortar on; $1,650, white mortar on; $1,000, completed; $1,725, 35 days.

Post and Devisadero. Two-story frame; owner, Jos. Robinson; architect, C. Zwierlein; contractor, C. Zwierlein; surety, F. Joost, $2,000; cost, $37,500; signed, March 4; filed, March 7; payments, $700, framed; $700, brown coat of mortar is on; $700, outside mill finish is on; $700, completed; $940, 35 days.

Point Lobos and Eighth Avenue. Two-story frame building; owner, C. Giese; contractors, Schultz & Meeker; surety, T. C. Jensen, $4,000; cost, $4,000; time, 65 days; signed, March 4; filed, March 5; payments, $900, roof is boarded; $1,000, brown coat of mortar is on; $1,000, accepted; $1,100, 35 days.

Shotwell and Twenty-third. Additions, etc.; owner, A. Schaar; architect, J. E Kraft; contractor, Wm. Paterson; surety, Chas. H. Ackerson; cost, $3,250; signed, Feb. 18; filed, Feb. 19; payments, $725, roofed; $700, all interior finish on; $1,000 when completed; $825, 35 days.

Scott and Sutter. Plumbing, etc.; owner, Geo. Hageman; architect, Chas. I. Havens; contractor, G. C. Sweeney; cost, $2,147; signed, March 6; filed, March 8; payments, $750, all rough pipes are in; $797, completed; $600, 35 days.

Scott and Sutter. Brick-work, carpenter work, etc.; owner, G. Hageman; architect. Chas. Havens; contractor, F. W. Kern; cost, $18,890; signed, March 6; filed, March 8; payments, $5,500, diagonal boarding is on; $5,500, outside finish is on; $3,500, outside mill work is all on; $3,690, completed; $4,800, 35 days.

Sanchez and Twenty-sixth. Seven 5-room cottages; owner, Louis Landler; architect, J. E. Loomer; contractor, J. E. Loomer; cost, $9,450; time, 5 months; signed, March 7; filed, March 8; payments, $3,150, roofed; $3,150, brown coat of mortar is on; $3,150, 35 days.

Scott and Ellis. Alterations and additions; owner, Chas. Meyer; architects, John & Balczynski; contractor, Wm Plunz; cost $2,275; signed, March 1; filed, March 3; payments, $1,700; underpinning of old house done; $575, 35 days.

Shotwell, between Twenty-third and Twenty-fourth. Frame building; owner, Mrs. H. C. Adams; architect, M. G. Bugbee; contractor, R. O. Chandler; cost, $2,625; signed, Feb. 18; filed, Feb. 18; payments, $656.50 enclosed; $656.50 brown mortar on; $656.50 accepted; $656.50 35 days.

Scott and Sutter. Painting, etc.; owner, Geo. Hageman; architect. Chas. I. Havens; contractor, Jos. Thomas; cost, $1,365; signed, March 6; filed, March 8; payments, $500, inside is second coated; $315, all work is completed; $350, 35 days.

Van Ness Avenue and O'Farrell. Decorating, etc.; owner, P. W. Riordan; architect, T. J. Welch; contractor, Moretti & Trezzini; cost, $6,500; signed, Feb. 20; filed, Feb. 20; payments, monthly, 75 per cent. of value of work done; balance, 35 days.

Van Ness Avenue and Myrtle. Four-story frame building and alterations; owner, L. A. Levy; architect, P. R. Schmidt; contractor, J. F. Logan; sureties, C. Greenwald and I. Levi, $63,300; cost, $63,300; time, Nov. 1, '90; signed, March 3; filed, March 4; payments, $6,000, second-story joists are laid; $6,000, rafters on; $6,000, roofed; $6,000, ready for plaster; $6,000, brown coat of mortar on; $6,000, hard finished; $6,000, standing finish is up; $5,475, completed; $158.25, 35 days.

The California Architect and Building News.

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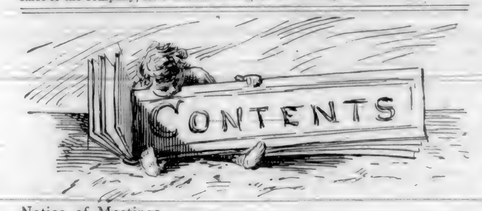

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on Friday evening, April 11th. President Babson in the chair. M. G. Bugbee desired to be advanced to fellow membership. The Committee on binding exchanges made their report and were discharged. It is hoped that the volumes (nearly a dozen in all) will form the nucleus for a valuable architectural library for the use of members of the Chapter and students of the Chapter's classes.

The proceedings of the New York Chapter at their last regular and special meeting were received, and the Secretary ordered to suitably acknowledge the courtesy.

The documents in relation to the Aug. Laver and City Hall case were received from Mr. Root, the Secretary of the A. I. A., and referred to a committee to formulate a suitable reply.

A committee of three was appointed to revise the constitution and by-laws of the Chapter, and make them conform to the requirements of the new constitution of the American Institute of Architects.

Mr. Sanders, the teacher of the class in architectural drawing, presented several drawings by his pupils, on the subject of a design for a frieze.

An interesting subject was broached by Mr. Sanders who suggested the formation, by the architects, of a joint stock company to erect a building designed for the accommodation of scientific, artistic and kindred societies, and to serve as a headquarters for associations of a like nature.

The matter will be discussed more in detail at the next meeting, and if decided to be advisable and practicable, there appears to be a likelihood of the idea taking definite shape.

THE regular monthly meeting of the Technical Society of the Pacific Coast was held Friday evening, April 4th. A communication was read from the American Society of Engineers, requesting the society to make certain tests at the Bear Valley arch dam, when the newer and higher dam relieves the present structure of the pressure it sustains.

It is hoped that by making such observations, valuable information may be obtained on the elasticity of masonry, as such an opportunity may never occur again. A committee consisting of Messrs. E. J. Molera, R. E. Browne, Prof. F. Soulè, and Luther Wagoner was appointed to take charge of the matter, and to request the co-operation of Messrs. A. Lietz and Joseph Sala, as scientific experts.

The paper of the evening was then read by Randell Hunt, C. E., on "Coffer Dams" treating also of the construction of open caissons.

Mr. Wagoner then explained some experiments he had made on stretching steel bars beyond the limit of their elastic strength.

RETAIL LUMBER DEALERS PROTECTIVE ASSOCIATION.

THE retail lumber dealers of this State, have organized an association to protect their business against the encroachments of the manufacturers of and wholesale dealers in lumber, and to enforce the principle that the wholesale and retail are separate branches of the trade, and that no wholesale dealer should violate the established usages by encroaching on the prerogatives of the retail dealers by selling to consumers.

About seventy-five delegates were present at the meeting which was held at the Chamber of Commerce on April 9th, and they represented about four-fifths of the retail dealers of the State.

A. W. Starbird of San Francisco was elected chairman, and Henry Rogers of Oakland as Secretary with Edward Raum as Assistant Secretary.

A constitution and by-laws were adopted; the most important section, provides that whenever any wholesale dealer or manufacturer or their agents shall sell to any person not a regular dealer, or to any lumber-dealer, not a member of the association, upon information lodged by any member doing business in that district, the Secretary shall notify such manufacturer or wholesale dealer who made such shipment, that he has a claim of 10 per cent of the value at retail rates prevailing at point of destination of such sale against him for such shipment. In the event of such wholesale dealer defying the Secretary or Board of Directors, the list of those with whom the association may trade will not include his name, and any member then dealing with him will be expelled from the association.

Provision is made against making any such complaint on account of lumber sold to original manufacturers, or wholesale dealers in their legitimate business, or steam railroads operated by locomotives.

Section 7 states that it is contrary to the spirit of the organization for one retailer to ship lumber into the territory of any other retailer, both being members of the association, at less than the rates established by the retailer for that territory, providing said rates are not higher than the established retail rates at the main point of supplies for that territory, with freight added.

After the adoption of the by-laws the election of Directors was proceeded with. Messrs. George W. Hooper, George H. Payne and S. L. Richards were elected to serve one year, representing respectively San Francisco, Alameda County and Sacramento. The three elected to serve a term of two years were J. F. Kennedy of San Francisco, William Dougherty of San Jose and A. Powell of Alameda County. For the three-year term Colonel W. C. Little, S. H. Harmon, representing San Francisco, and H. G. Stephenson representing Los Angeles, were elected.

The Directors will hold weekly meetings to carry out the objects of the association.

PROPER HABITATIONS FOR ALL.

ALTHOUGH the well-to-do mechanics and tradesmen have ample house accommodation at present, yet we see signs here, as the city of San Francisco grows and assimilates itself more and more to the old cities of the country east of the Rockies, of a growing lack of accommodation for purposes of habitation for the poor, and those unfortunate enough to be in the ranks of those who lack the power of being successful.

This matter will have to be grappled with here, as it has already been found necessary to grapple with it in London, and other overcrowded cities of the old world.

The abstract justice of the duty of those supplying their quota of labor for the common good, to supply themselves with proper habitations, is now pretty well conceded. A state of society failing to do this has already been condemned by many of our deepest thinkers. It seems hopeless however to leave the matter in the hands of capitalists, for although taking London as an example, a number of paying investments of this kind have been made, it is as but a drop in a bucket of water. Capitalists would rather put their money in a more speculative and presumably a better paying investment. There is no doubt that any effective work done in this line must be done by the collective efforts of the citizens working through the municipality. It seems also to be the *duty* of such, in view of the bad effect of unhealthy and unsanitary homes upon the character and morals of its citizens.

Though this may seem a bold suggestion at first, yet everything points in every direction to collective effort in all departments of social life; and it will be the way also in that of providing homes for its constituents.

The best way of dealing with the problem of such an important social question, will not be further entered into here; but left for the working out of our readers.

THE GRANT MONUMENT.

TWO years or more ago the Grant Monument Association of New York, invited artists, architects and sculptors to submit competitive designs for the memorial to be erected in honor of General Grant. Apparently the prizes offered were not large enough to tempt a competent artist, architect or sculptor to devote the time and study necessary to involve a suitable and appropriate project, as out of the seventy or eighty designs delivered to the Committee, not one was deemed by experts, to possess sufficient merit to warrant its adoption.

It is to be hoped that some day Committees, and the public in general, will become sufficiently educated to perceive that it is folly to expect to obtain first-class material by offering third rate inducements.

We are pleased to see that other than architectural journals are aware of the futility of such proceedings, and quote the following from *Harper's Weekly* upon the subject in question:

The Grant Monument Committee has learned by experience what it should not have needed experience to learn, that the masters in the plastic arts do not enter into competition for such work. The reasons for this fact are many and various, but the fact is unquestionable. It is certainly to be expected that the reputation of an artist will be as serviceable to him as that of a man of science or of the learned professions. If a mining company wishes to have the quality and character of its ores determined, it applies to an expert whose distinction is due to his proved ability. If a Committee wishes a statue, or a portrait, or a monument, application to an expert would seem to be equally natural.

The preparation of designs for such a work as the Grant memorial involves a great deal of time and money. The masters in the art are not obliged to depend upon the chance of approval of their designs. They can use their time for labors which are sure to bring a return. If therefore, a Committee should ask a service of them which would be properly reimbursed, if it were only the preparation of designs, the masters, or at least some of them, would be glad to do that work as they would do any other. In this way designs of the proper character could be procured.

This course need not exclude a competition of such others than recognized chiefs as might be willing to try for a prize and an opportunity. The triumph would be greater if achieved in comparison with the works of men of established name. If, however, such men should decline to take any part short of the execution of the work, the result would be either an original selection among acknowledged masters, or among such as were willing to compete. In the case in question we understand that the Committee was advised to invite what was practically such a mixed paid and unpaid competition as we have mentioned, but decided to take the course which has failed to lead to the result desired, none of the designs being satisfactory. The Committee will do well to hasten slowly in the completion of a work so important.

EXAMPLE OF FRENCH GOTHIC.

SUGAR AND MORTAR.

SOME time ago the statement that the mixture of a small quantity of sugar with mortar greatly improved the latter, excited the risible faculties of the building fraternity. The notion was regarded as too ridiculous for serious consideration. There is, however, reason to believe that the addition of saccharine matter to mortar is an extremely valuable discovery. In the first place, it enables bricklaying to be carried on in the frosty weather.

About two pounds of coarse brown sugar to a bushel of lime and two bushels of good sand will supply the proportions for a mortar that will resist frost admirably. It is claimed, however, that in addition to this advantage, mortar with sugar mixed in it is vastly superior to mortar without it. It sets as hard as cement very soon, makes the brickwork extremely strong and quite effective when used with dry bricks. For indoor plastering, also, saccharated mortar sets hard quickly. When portions of the same wall have been covered in one part with sugared and in another with unsugared mortar, the latter has ripped up directly when a nail was run over it, months after the former had become as hard as stone. Much interest is taken in the matter by Mr. Crampton, of Cranleigh, Guilford, and he reports some interesting experiments. He points out that if sugar be added to mortar that is already made, it will render it too thin.

Strong sugared water dissolves lime, in the same way that water dissolves sugar. It is therefore necessary to dissolve the sugar in water first, and then add the sugared water to the lime, slowly and cautiously. The mortar should be as stiff as it can be used. For lime washing, one pound of sugar to sixteen gallons of water will make it adhere splendidly. Drops of whitewash made with water so mixed, if they fall on the floor or window, or any iron plate, cannot be washed off. They stick like enamel, and have to be scraped off. Evidently, sugar is not such an absurd thing to mix with lime as the practical man thought. —*The Manufacturer and Builder.*

SANITATION.

There is no doubt that the science of sanitation, as applied to the different features of building, is so far advanced that those professionally interested are possessed of sufficient knowledge to render building secure from unhealthfulness. The question now is how shall the public be educated up to an intelligent appreciation of this knowledge so that they may understand the importance and value of its great offices? There are many people unable to appreciate sanitation in their homes simply because they have not been made acquainted with it. All ventilation or no ventilation, and all drainage or no drainage is the same to them, and they sit in rooms filled with foul air or sewer gas with indifference. They have not been taught otherwise, and need from some source the knowledge that will teach them the value of healthful homes.—*Exchange.*

NEW YORK CHAPTER, A. I. A.

NEW YORK Chapter A. I. A. The regular meeting was held on March 12th. The most important subject brought before the meeting was the proposed "Act to regulate the practice of Architecture within the State of New York."

After a general debate and thorough discussion of the matter from all points of view, the following resolutions were adopted:

Resolved, That the New York Chapter A. I. A., is glad to give its support to the proposed bill before the Legislature of the State of New York, entitled "An Act to regulate the practice of Architecture," but strongly and unanimously urges the suggestion that the proposed provisions in relation to the appointment, as commissioners, of collegiate professors of architecture be changed, so as to provide for the appointment of one professor of architecture for two years, alternately from Cornell University and Columbia College.

Resolved,—That the Chapter is also of opinion that to induce commissioners to act, it will be necessary to provide that they receive a mileage for travel done in the performance of their duties under the proposed act.

The gist of the bill above referred to is contained in our December number, 1889.—[Ed. Cal. Architect.

A SPECIAL meeting was held at the quarters of the Chapter, in the Welles Building, 18 Broadway, New York, on Wednesday, March 26th, 1890, at 3 P. M., President Littell in the chair.

The President stated that the meeting had been called to consider an important subject presented to the Chapter by the Department of Architecture of the Brooklyn Institute, through Messrs. Upjohn and Dickson, Fellows A. I. A., and members of the Brooklyn organization, and of a Special Committee thereof having the subject in charge.

The Secretary then read the following communication from the Department of Architecture, Brooklyn Institute:

DEPARTMENT OF ARCHITECTURE, BROOKLYN INSTITUTE.

At a meeting of the Department of Architecture of the Brooklyn Institute, March 19, 1890, the following preamble and resolutions were adopted:

Whereas, An act has been introduced in the Assembly of the Legislature of this State, and referred to the Committee of Ways and Means, which reads as follows, to wit:

AN ACT FIXING THE SALARY OF THE COMMISSIONER OF THE CAPITOL.

The salary of the Capitol Commissioner is hereby fixed at ten thousand dollars per annum. And it shall be his duty, whenever requested by the proper authorities, to furnish plans and specifications for all public buildings belonging to the State, and to render such services as may be required, without further compensation.

This act shall take effect immediately.

Resolved, That in the judgment of this Department of Architecture of the Brooklyn Institute, the passage of such an act, which is substantially the creation of office of State Architect, will be detrimental to the interests of the people, and the promotion of architecture by preventing free and open competition.

We are therefore opposed to the office of State Architect as not in accord with the culture of the times and the liberality of our institutions, which call for the highest excellence obtainable—the best from the best.

Resolved, That feeling confident we voice every architectural institution in the land, we would respectfully urge that the plans for all public buildings—Federal or State—be given out among our architects for competition, who shall be compensated therefor, and that none but architects be selected to pass judgment upon the architectural merits of such plans.

In thus protesting against the creation of a Government or State Architect, we do so not believing it possible for any individual to possess originality sufficient which, in the designing of a number of public buildings, will not wane into more or less commonplaceness.

Neither do we favor any individual's peculiar standard of architecture, or interference with, or biasing of, that novelty and attractiveness which is rapidly giving American buildings a prestige.

While thus opposing the office of State Architect, we most respectfully suggest this substitute:

That upon the recommendations to the Governor of the State, or the insertion of the names in the act, of three or five architects, from any institution recognized among the profession as authority in architecture, they be appointed and constitute an Advisory Board, having the management of the competition, subject to the rules of said institutions, and of the building until completed, being paid per session for their services; the architects successful in the competition to receive the customary fee, to be accountable to the Advisory Board, which in its turn reports to the State authorities.

A. J. Bloor, Secretary.

THE ARTIST, BY M. F. EHRMANN.

THOMAS POPE'S FLYING BRIDGE.

AN INCIDENT OF ANCIENT HISTORY REVIVED.

We presented in our impression of February an illustration, with suitable description, of a proposed suspension bridge across the East River at Blackwells's Island, which had been seriously contemplated over fifty years ago. The designer of this ambitious project had worked out the details most carefully, and the failure to execute the work cannot be attributed to any defect in these, but rather, as appears most reasonable to assume, to the magnitude of the undertaking; for the structure proposed, for that time, would have exceeded in proportions all others of its class, then existing, as much as the great Forth bridge to-day exceeds all others.

As we have dipped a little into history to revive the memory of one bridge project almost forgotten, it will be pardonable to supplement our article of last month with the description of another yet more ancient, and greatly surpassing the first in boldness of design and originality.

In a now somewhat scarce book (found to-day only in a few public and private libraries), by Thomas Pope, published in 1811, with the title "A Treatise on Bridge Architecture, in which the Superior Advantages of the Flying Pendant-Lever Bridge are fully Proved," etc., the author describes a method of constructing a timber or iron bridge, "with a single arc, on the principle of the lever." The plan described is identical in principle with what is now designated the canti-lever. This fact is all the more interesting to us, since this particular type of bridge structure is generally believed to be of comparatively recent origin, and to have originated with American bridge builders.

Notable examples of this form of bridge architecture, are, in this country, the great steel railway bridge recently built over the Niagara River a short distance below the falls; and, in Europe, the greatest of all bridge structures, the great steel bridge over the Firth of Forth in Scotland.

In view of the publication of Thomas Pope's plan for a "flying bridge," and which clearly describes the principle of construction now called the canti-lever— that is, a bridge in which the superstructure is formed of projecting beams, or levers, fixed at one end to the abutements or piers, and free at the other end—the best that can be said in behalf of the claims of the present generation of bridge builders, is, that it is a revival of an old idea, and that this revival is due principally to American engineers, who were the first to appreciate its merits, and who have adopted the system successfully in the cases of a number of important structures.

To return now to the project of Thomas Pope. From the work above quoted, we learn that he prepared detailed plans and estimates for the construction of a timber bridge, on the canti-lever system, across the East River at New York, and that he constructed a model to illustrate the practicability of his ideas. In his treatise there occurs, in a foot-note, the following reference to this model: "It was built to illustrate a bridge suitable to span the East River at New York with a single arc, the chord of which would be 1,800 feet; the altitude, or versed sine, 223 feet. The abutements were built in the form of so many warehouses, and the whole was erected on a scale of three-eighths of an inch to one foot; the length of the model of half the bridge, in real measure, was nearly 50 feet. The weight borne at one time by the unsupported arm of this diminutive model since finished, has been ten tons, and has astonished the mind of every beholder." From this description, the reader will be able to appreciate the completeness with which Pope had grasped the fundamental principles of the canti-lever system of bridge construction.

The accompanying illustrations—one showing one-half of the structure, to illustrate the self-supporting nature of the lever arm, and the other the completed structure spanning the river with a single arc—speak for themselves. They are reproduced from the frontispiece of Pope's treatise. This notable project, while it challenges our admiration for the boldness of the author's design and the clearness of his perceptions, at the same time calls forth regrets that it was advanced at a time when men were unprepared to entertain it. The project, considering the time and circumstances in which it was put forth, cannot fail to excite the profound interest of the engineer.—*Manufacturer and Builder.*

THREE PUBLIC COMPETITIONS.

The *Cosmopolitan* magazine offers $600 in three prizes of $200 each for the best competition designs on the following subjects: Public Baths, Public Laundries, and Tenement House Co-operative Kitchens.

The Committee of Award is as follows: Richard M. Hunt, President of the American Institute of Architects, Richard L. Hoxie, United States Corps of Engineers, Albert T. D'Oench, ex-Superintendent of the N. Y. City Department of Building, Seth Low, President of Columbia College, Cornelius Vanderbilt and the editor of the *Cosmopolitan*.

The successful drawings are to become the property of the *Cosmopolitan*, and the right to first publish any drawing to rest exclusively with the *Cosmopolitan*, any competitor to submit, if he wishes, drawings for any one, two, or all the prizes, the following programme to apply to each competitor:

Each competitor is required to exhibit two sheets of drawings, one to contain the ground plan, front elevation, and section, with such other drawings as may be necessary to explain the design and construction, all drawn to a scale of one-sixteenth of an inch to the foot, and one to exhibit a perspective view of the whole, drawn to a scale of one-eighth of an inch to the foot.

The plan and elevation sheet to be finished in line with India ink and lining pen; no brush work on this sheet, except in blocking in openings and sections. No shadows are to be cast. The perspective sheet to be rendered at will.

Each sheet to be cut to the uniform size of 24"x32", and to be white card or Bristol board or Whatman paper, mounted on a stretcher. No colored borders, frames, or glazing will be allowed.

Each sheet must be distinguished by a motto or cipher. A sealed envelope bearing the same motto or cipher must contain the name and full address, and must be mailed to the *Cosmopolitan* Magazine Architects' Competition, Madison Square, New York, on or before May 10th, 1890. Drawings are to be delivered flat, carriage paid, at the same time and place. They will be returned at the close of the competition, at the expense of the contributor.

SPECIFICATIONS FOR PUBLIC BATHS COMPETITION.

The drawings shall exhibit a public bath constructed of stone, iron, or equally enduring material.

The structure is to be located on a plot with light on two sides, not exceeding 200x200 feet, any part or all of which may be utilized, and provision to be made for baths in both summer and winter, adapted to the necessities of both sexes in a population of not less than 100,000 people. A letter of explanation must be submitted with the drawings, setting forth the probable cost of maintenance, the number of attendants needed, and any details not apparent in the drawings, but the price of a single bath should not exceed seven cents. The practicable nature of any plan of operation will be considered in determining the award.

SPECIFICATIONS FOR PUBLIC LAUNDRIES COMPETITION.

The drawings shall exhibit a laundry interior for the requirements of one hundred and fifty families of five each.

The floor space shall not exceed 100x25 feet. Written explanations on separate sheets may accompany the drawings.

SPECIFICATIONS FOR TENEMENT HOUSE CO-OPERATIVE KITCHEN COMPETITION.

The drawings shall exhibit a kitchen interior for the requirements of twenty families of five each.

The floor space shall not exceed 50x25 feet. Written explanations on separate sheets may accompany the drawings.

The three subjects are all of a practical nature, and it is more

than possible that by bringing the advantages of co-operative kitchens to the attention of the public, it may be the means of their adoption in future tenement buildings.

The necessity of public baths is quite apparent without calling particular attention to them. There is no doubt that such baths would be liberally patronized. The Lick Free Public Baths, (illustrated in our March number) and which are now approaching completion in this city, will afford an excellent illustration

THE GOLDSMITH, BY M. F. ERHMANN.

of the practical workings of the system. It is to be hoped that after the *Cosmopolitan* has obtained the best plan for this purpose, it will be able to go a step farther and transform the design into a reality. As all large cities now maintain public parks for the enjoyment of their citizens, and public libraries for their use, why should not public baths be instituted and maintained at the public expense?—[*Ed. California Architect.*

A NOVEL use of electricity, and one that will revolutionize the present methods of warming houses, if it can be successfully carried out, is that of heating dwelling houses electrically, without the use of any hot substance. It is claimed that wall paper can be made in such a way that the passage of currents of low electro-motive force will heat it moderately warm to the touch and diffuse throughout the room an agreeable temperature. —*Exchange.*

PERSONALS.

After many years active service as Architect of the Fire Department, P. J. O'Connor has retired. Architect Frank T. Shea has been appointed to the position thus made vacant.

Architect Maxwell G. Bugbee has removed his offices from 330 Pine street to larger and more convenient quarters at No. 419 California street, where he will be pleased to receive his friends and clients.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhereto contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The handsome interior which we present this month, was designed by B. McDougall & Son, architects, and was one of the drawings illustrating their competitive design for the Olympic Club's proposed new building.

The Fiske building, shown in our lithographs is from a pen and ink drawing by the architect, Harold D. Mitchell, of San Francisco. The building is situated on the southwest corner of Mariposa and J streets, in Fresno, and is owned by J. B. Fiske, who has shown both his enterprise, and his faith in the future and progress of Fresno, by erecting this business block, which it is claimed, is second to none there in solidity of construction and convenience of arrangement.

The style chosen by the architect, is English Renaissance. The roofs and pediments are clearly defined, and present an effective sky line, while the clock tower on the corner of the building makes a very effective feature. The building covers a lot seventy feet by one hundred and fifty, and is four stories in height, besides basement and attic; the basement is nine feet high, fitted up for office purposes, and reached from the sidewalk by flights of wide stone steps, the intermediate openings being utilized for light and ventilation.

The interior of the upper stories has been arranged to conform with the latest ideas concerning suites and offices, each having separate entrances from the halls, yet so arranged as to allow communication if necessary from one to the other.

The two main staircases and the interior finish, are of hard wood; the janitors' quarters, lavatories, etc., being finished in cedar and prima vera.

The hardware throughout is of the latest designs in oxidized iron and bronze.

The mantels are all of native California woods, and were made from special designs by the architect. English encaustic tiling form the hearths.

All the latest modern conveniences, such as sliding blinds, electric gas lighting and bell work, polished plate glass, etc., have been liberally supplied. The exterior walls are finished with pressed brick and terra cotta trimmings, with cornices and bay windows of galvanized iron.

The roof of the main building is terraced, and forms a promenade that will be enjoyed during the summer as a delightful retreat from the dust and heat in the streets below.