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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

\$3.00 PER YEAR

VOLUME XX. No. 5.

MAY, 1899.

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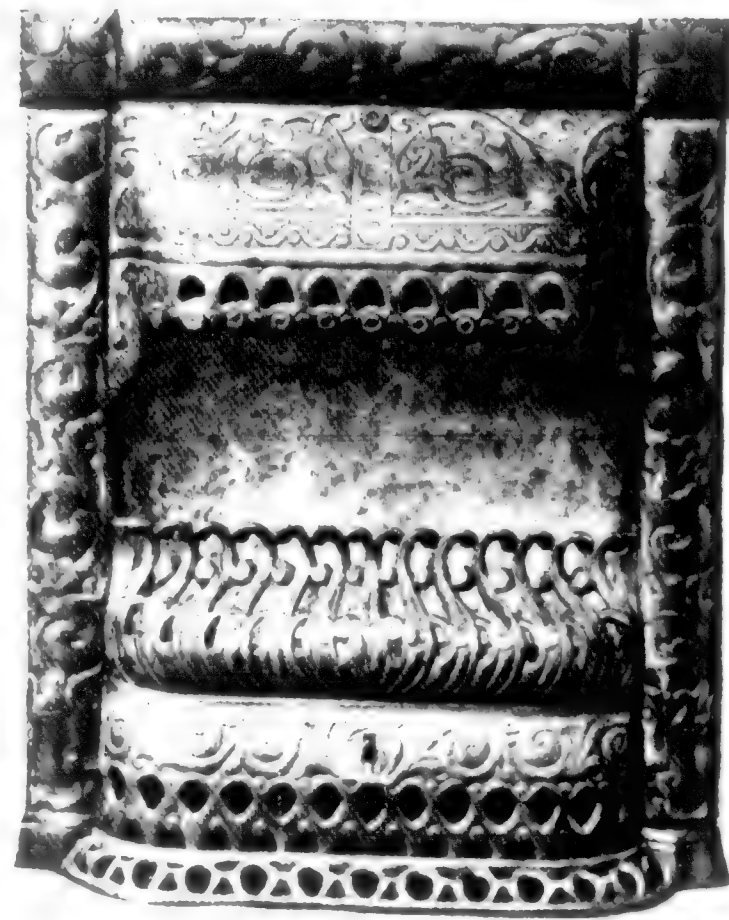
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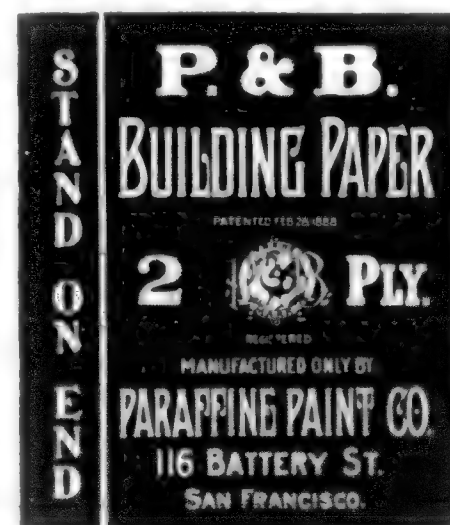
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Baker near Greenwich. To build; o. Otto Kaiser and wife; a. Martins & Coffee; c. S. B. Kress; signed, May 2; filed, May 3; cost \$1882.

Bluxome near 4th. Concrete, etc; o. City of S. F.; a. T. J. Welsh; c. F. A. Williams; cost \$15,301. Excavations, etc; c. San Francisco Bridge Co; cost \$2118.50. Plumbing, etc; c. J. E. Britt; cost \$1187.

Broad near Plymouth. To build; o. Father J. A. Cooper; a. B. J. Clinch; c. J. H. Hughes; signed, May 3; filed, May 25; cost \$236.

Broderick near Sacramento. To build; o. Geo. E. Ames; a. Wm. Koenig; c. Ira W. Coburn; signed and filed, May 18; cost \$12700.

Broderick near California. To build; o. J. H. and C. T. Dumbrell; c. R. C. Stiller; signed and filed, May 3; cost \$3875.

Bryant Ave. near 21st. To build; o. H. Jacoby; a. Salfeld & Kohlberg; signed and filed, May 8; cost \$3025.

Buchanan near Golden Gate. To build; o. Alex. Levison; a. A. J. Barrett; c. John Ogilvie; signed, May 5; filed, May 12; cost \$4095.

California near Scott. To build; owner and contractor, J. F. Ortman; days work, cost \$800.

California near Franklin. Plumbing, etc; o. Kasper; c. W. F. Wilson; signed, May 12; filed, May 13; cost \$2912.

Capp near 16th. To build; o. Louis Weule; a. Aug. Nordin; c. J. T. Lorenzen; signed, May 5; filed, May 8; cost \$4500.

Castro near 18th. To build except brick work, etc; o. T. L. Trouin; a. C. M. Rousseau; cost \$1075.

Clay near Locust. Carpentry, etc; o. Dr. J. C. Spencer; a. F. R. Van Trees; c. W. H. Bauger; signed, May 10; filed, May 12; cost \$5500. Painting, etc; c. J. H. Keefe; cost \$900. Plastering, etc; c. J. R. Tobin; cost \$185. Painting, etc; c. G. C. Sweeney; cost \$953.

Drum near Pacific. One-story brick; o. A. B. McCreery; a. Herbert B. Mang; c. J. W. Wissing; signed, May 9; filed, May 18; cost \$12,200.

Dupont near California. To build; o. Tong Bong; a. J. J. Newson; signed, May 10; filed, May 11; cost \$1200.

Eddy near Webster. Brick, stone, etc, two-story brick; a. Percy & Hamilton; c. Peacock & Butcher; signed, April 27; filed, April 28; cost \$7780.

Ellis near Powell. Grading and bulkheading; o. Henry Kahn and Jules Levy; a. Albert Pissis; c. John Tuttle; signed, May 4; filed, May 5; cost \$1500.

Ellis street No. 418. Electric elevator; o. Mrs. E. and R. J. Hancock; c. W. L. Holman; signed, May 24; filed, May 26; cost \$2400.

BUILDING NEWS.

Fell near Masonic Ave. To build; o. J. Meyer; a. Cartens & Coffee; c. C. Schutt; signed, May 5; filed, May 6; cost \$900.

Fourteenth and Jessie. Excavation, etc; o. College of Physicians and Surgeons; a. H. A. Schutze; c. Siller Bros; signed, March 23; filed, March 28; cost \$22,565. Plumbing, etc; c. Leckelmer Bros; signed, March 23; filed, March 28; cost \$4634.

Geary and Stockton. Two-story brick; o. Chas. C. Butler; a. G. A. Betrud; c. Wm. Bell; signed, May 16; filed, May 18; cost \$16,350.

Green near Buchanan. To build; o. Arthur McCracken; a. Wm. Mosser & Son; c. Peterson & Person; signed, May 4; filed, May 6; cost \$3183.

Haight near Baker. To build; o. Mrs. Bessie McFadden; c. H. Keenan; signed, April 26; filed, April 28; cost \$550.

Jones near Washington. To build; o. J. B. Arrambide; a. C. I. Wilson; c. A. Christensen; signed, May 12; filed, May 13; cost \$10,200.

Kearny and California. Concrete work, etc; o. Eugene P. Murphy; a. Shea & Shea; c. A. L. nch; signed, April 26; filed, April 27; cost \$2465.

Larkin near Turk. To build; o. George Gampfer; c. G. G. Gillespie; signed, May 10; filed, May 20; cost \$2400.

Market street, No. 325. 1 electric elevator; o. Claus Spreckels; c. W. L. Holman; signed, May 16; filed, May 24; cost \$2096.

Ninth near Folsom. To build; o. John Tamoney; carpenter supt., Alex. McKay; cost \$6000. Plumbing, etc; c. W. T. O'Brien; cost \$1150.

Noe and Henry. To build; o. Angelo O'Reilly; c. B. Martin; signed, May 18; filed, May 18; cost \$650.

Oak near Central Ave. To build; o. L. Friedlander; c. Wilson & Long; signed, May 2; filed, May 3; cost \$325.

Oak and Ashbury. Carpentry, etc; o. Ellen B. Copp; c. C. Winchler Hansen; cost \$10,621. Plumbing, etc; c. James F. Ford; cost \$1888.

O'Farrell near Pierce. To build; o. D. Cassassa; a. W. H. Armitage; c. W. Horstmeier & Co; signed, May 22; filed, May 25; cost \$7300. Plumbing, etc; c. John Doherty; signed, May 23; filed, May 25; cost \$1175.

O'Farrell near Powell. Grading, etc; o. Emilie M. Chafot; a. Shea & Shea; c. J. Tuttle; signed, April 21; filed, May 2; cost \$1172.

Pacific and Franklin. Alterations; o. Henry Meyer; a. Salfeld & Kohlberg; c. Geo. R. Lang; signed, April 27; filed, April 28; cost \$1196.

Page near Devisadero. Brick work, etc; o. H. Mangies; a. H. Gelfuss; signed and filed, May 8; cost \$1140.

BUILDING NEWS.

Primrose near Waller. Cottage; o. F. Nelson; day's work; cost \$20,000.

Pine near Octavia. Carpentry, etc; o. Jonas Schoenfeld; a. Salfeld & Kohlberg; c. Val Franz; signed, May 15; filed, May 22; cost \$13,940.

Rhode Island street. To build; o. B. J. Curtin; c. P. Rasmussen; cost \$1100.

Sacramento and Franklin. Carpentry, etc; o. Esthre Hellman; a. J. E. Kraffe; c. C. Chisholm; signed, April 25; filed, April 28; cost \$5585.

Sansome near California. Alterations and additions; o. Mutual Life Ins. Co; a. N. Blaisdell; c. R. McKillean; signed, May 10; filed, May 13; cost \$15,990.

Second and Minna. Four-story brick; o. C. Froelich; a. A. Sutton; c. J. A. Wilson; signed, May 5; filed, May 9; cost \$15,033.

Stockton and Pacific. To build and alterations; o. Twinkling Star Imp. Co.; a. Bert Hasty; c. Hannah Bros; signed, May 8; filed, May 9; cost \$23,250.

Sutter near Grant Ave. Four-story brick; o. Goldberg, Bowen & Co; a. Edward R. Swain; c. George R. Lang; signed, May 20; filed, May 22; cost \$12,750. Roofing, etc; c. Wm. Cronan; cost \$919. Plastering, etc; cost \$1320. Excavation, brick work, etc; c. John F. Riley; cost \$1950. Cast iron work, etc; c. Cal. Artistic Metal and Wire Co; cost \$3370. Plumbing, etc; c. Richard Rice; cost \$2500.

Sycamore Ave. near Valencia. To build; o. August G. Wiemann; a. M. J. Welsh; c. Thos. L. Bassett; cost \$2500.

Tennessee near 22d. Cottage; o. Michael E. Gray; c. G. J. Antweiler; cost \$1300.

Twenty-third Ave. near Pt. Lobos. To build; o. W. A. Deane; c. E. C. Blaisdell; c. E. C. Bletch; cost \$3979.

Waller near Primrose. Four two-story frames; o. F. Nelson; cost \$20,000.

Washington and Laguna. Excavation; c. Wm. G. Irwin; a. Reid Bros; c. Gray Bros; signed, May 8; filed, May 20; cost \$8200. Cast and wrought iron; c. Judson Mfg. Co; cost \$11,277.

Webster near Fillbert. To build; o. A. J. Kennedy; a. M. J. Bugbee; c. E. A. McCarthy; cost \$2200.

Union near Octavia. To build; o. Johanna Slattery; a. J. F. Dunn; c. Douglass & Campbell; cost \$3175.

Vallejo near Octavia. Carpentry etc; o. Joseph Goetz; c. Wm. Plant; cost \$8825. Plumbing, etc; c. J. E. Britt; cost \$1990.

Van Ness and Union. To build; o. Mrs. Antonio F. Bendmann; a. M. J. Lyon; c. G. Roberts Elder; cost \$3350.

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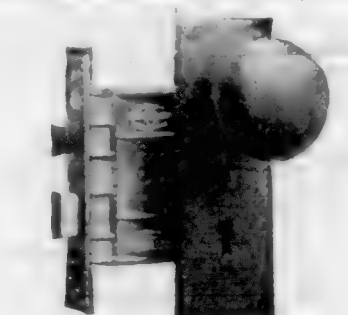
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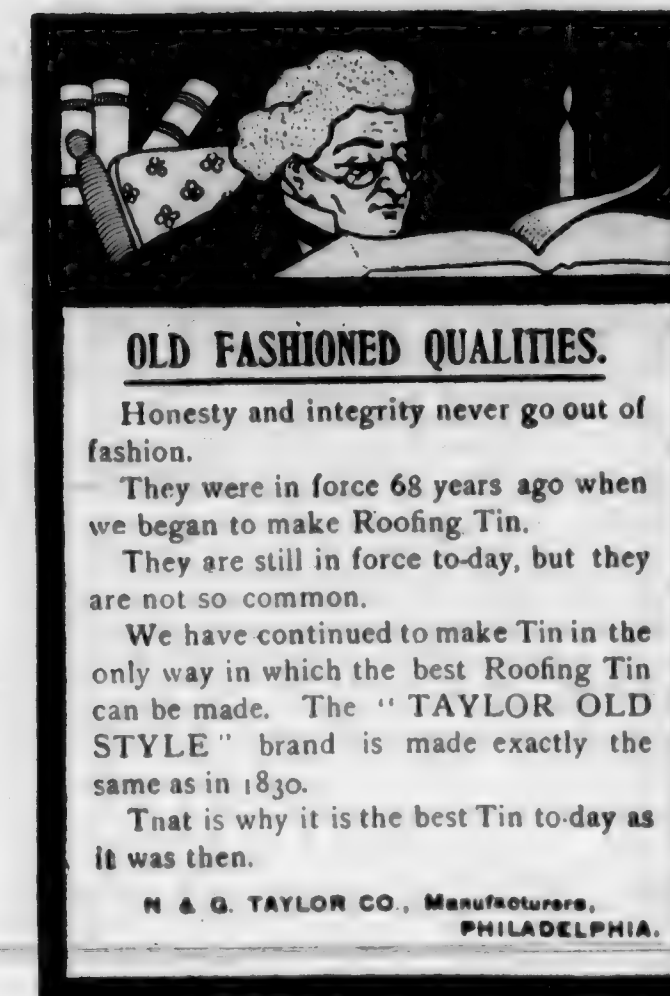
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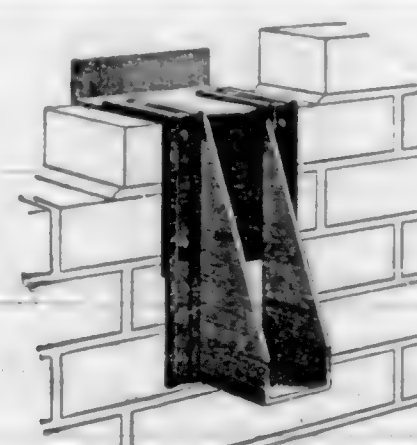
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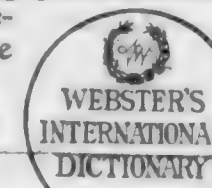
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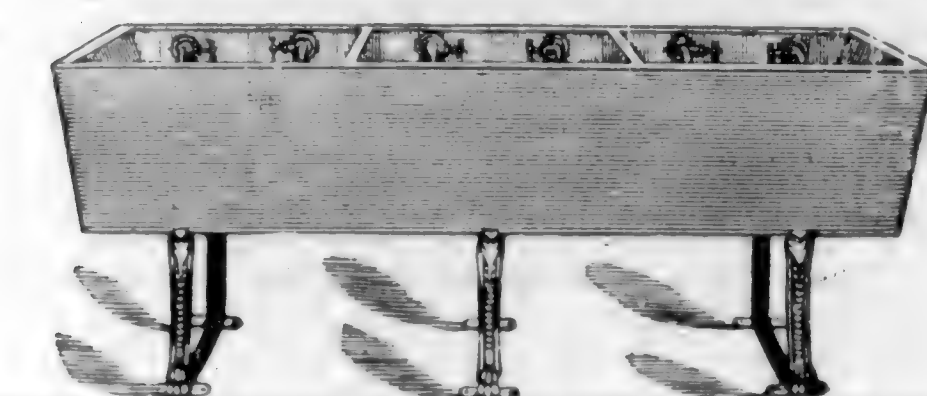
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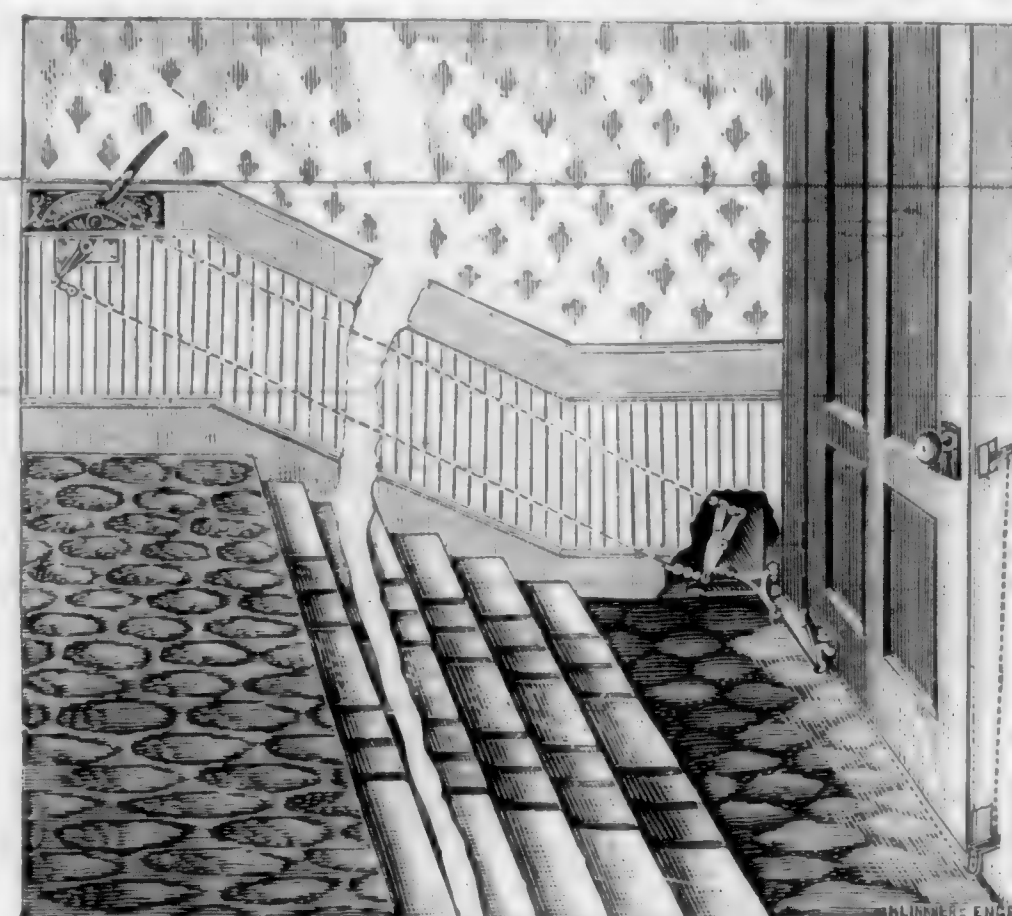
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

13.00 PER YEAR

PUBLISHED ABOUT THE 20th OF EACH MONTH BY

E. H. BURRELL LESSEE, PUBLISHER.

OFFICE 408 CALIFORNIA ST. SAN FRANCISCO CAL.

ESTABLISHED IN 1879 NOW IN THE NINETEENTH YEAR. INCORPORATED 1889

VOLUME XX.

MAY 20th, 1899.

NUMBER 5.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.



THE critical judgment nothing is more offensive than the positive, pretentious and false in art. A small boy may show us his drawing of a horse, expecting commendation, which we give, in a degree, because the work has some merit as the attempt of an untutored child. But when a man of mature years presents us a Rosinante on canvass as a work of art, we feel an impulse to devote it to the flames. The fact that the author of the work has so poor an opinion of our taste and judgment as to attempt to impose upon us, arouses our resentment. His reputation as an impostor is at once established, and although he may afterwards produce a fairly creditable work, we regard him with suspicion.

Hence a house painter, or a man who decorates furniture, carriages and steamboats may not assume to belong to that profession which furnishes pictures for the art institute or the salon. If he is a good house painter or decorator, let

him be satisfied to be that. If a stone cutter can hew out architectural details in stone, according to the design furnished him, let him do that as perfectly as he can, but not call himself a sculptor. In doing his own work well lies the true distinction.

One may read, in a by-street of an eastern city, on a swinging sign, this legend: "Professor of Whitewashing." Of course the professor is a colored individual whose ambition is to be above his humble calling. But however we may sympathize with his aspirations, we are forced to smile at the vanity which prompted the title he has given himself.

In the case of the professor of whitewashing no harm is done, because nobody is deceived. It is a different proposition when men who have no right to call themselves architects go about the streets of San Francisco spying out contemplated improvements, and offering building plans which they too frequently get accepted because of their alleged economy.

A man is not an architect who is only a carpenter or a

builder. It is true that he must thoroughly understand the principles of carpentry and building, and the various ways and methods of their application in the practice of his profession, in order to be an architect in the proper sense; but to these must be added scientific knowledge, and the artistic quality of brain. With all these, and an honest intention to apply them for the benefit of his clients, for a reasonable amount of pay, he may be permitted to make contracts.

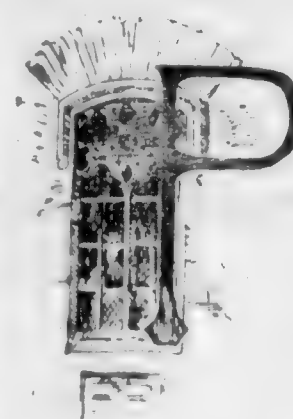
There is a great deal of false economy practiced by property owners in this city, by which the tenant class of householders and others suffer damage. In the first place there is the cheap "architect." He brings in the cheap contractor. They stand in together. A house is quickly built, for a seemingly low price, but in such a way as to leave a good margin of profit for the contractor. The lumber in it would hardly make a respectable woodpile for a New England household during a New England winter.

The walls of the structure are scarcely thicker than a packing-box. The floors are faulty, the stairs creak, the flues are unsafe, the plumbing is bad, the plaster cracks, and, in fact, the whole thing is a miserable pretense. But when the owner first sees his completed house, in all the glory of newness, before winds or earthquakes have shaken it, before sun and sand have defaced it, before it has shrunk, twisted, faded, grown old, he looks upon this creation with much satisfaction. Not being an architect, nor even a carpenter, he does not at first detect the fraud. The sense of being cheated comes, however, in a very few years, if not in a few months. Tenants are always asking for repairs, and moving to newer houses. If he is unlucky enough to own several of these tenements in a row, he has the pleasure of seeing the windows placarded with TO LET month after month, until he is tempted to join the street urchins in stoning them. In vain he ponders on the problem of how to get interest on the value of his real estate. The longer his houses are empty the less willing is he to tempt renters by lowering the rent. He says he cannot afford it. There are two factors entering into this condition of the property owner's mind. The first is the excessive value put upon ground in San Francisco; the second the cheapness of the buildings erected upon the high priced ground. The value of the ground increases, or should do so, while the value of the improvements rapidly decreases, and the joint value is not sustained. Neither can it be restored, except by tearing down, and building up again.

No city in the United States of the size of San Francisco shows so many vacant houses. The impression it gives the passing observer is that the population is growing less. This is not, however, the case. The vacancies occur chiefly from the inferior character of the houses that are built to let. The new houses are taken as soon as completed, and in a few years are in turn deserted. There is, all around, room for reform in business methods. Let us have it.

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THEN AND NOW IN ARCHITECTURE.



PLACES of religious worship have in every country led the architectural idea. The temples of Egypt, India, Persia, Assyria, Greece, Rome, were the structures on which the genius and the wealth of these countries were lavished. Palaces or government buildings came next in importance, not only because kings, princes and captains were possessed of great wealth, but because in ancient times these persons were revered as half divine—demigods—and entitled to honors next to the supreme deity. Tombs of great men for the same reason were made costly, and as nearly imperishable as possible—they contained the mummies or the ashes of sacred personages.

Imitation led to the adoption of certain adaptable features of public buildings in private houses; hence the use of columns, which we have seen was the foundation of all the ancient "orders." The destruction which fell upon ancient Rome left only a few ruins as examples of its architectural achievements. The removal of the capital to Byzantium, and the introduction of Oriental ideas even into the Christian religion, which Constantine had forced upon the people, had a tendency to obliterate something of the past, while it had not strength enough to substitute any very positive features in place of those that were lost.

Rome for centuries after Christianity was nominally accepted as the religion of the people, was still pagan in sentiment, as her thousands of Christian martyrs give evidence. Not until the eighth century did the Church have strength enough to possess itself of temporal rule, and thus secure an opportunity to revive theocracy in a new form. With that revival came the necessity for Christian temples, or churches. Naturally the earliest Christian architecture was a modified, and often a very meager form of the older Roman. In fact the first public places of worship were pagan temples despoiled of their magnificence, as the Pantheon.

But before this period, while Christians were suffering persecutions which prohibited public worship, certain architectural ideas became fixed in their minds, which govern church architecture to this day. Their root was in the Egyptian temple, which had the portico, the vestibule, the cella, and at the end another more sacred enclosure. The Greeks had the same gradual approach to the mysteries, although their columns were outside, instead of inside the walls. The Romans, as has been shown, retained this idea in their public halls, or basilicas, even to having at the end a semi-circular apse behind a row of columns. This was used by the magistrates for hearing complaints. Even a Roman dwelling had its columned portico and hall, beyond which were the private apartments.

Therefore, whether it was the basilica or the private residence, in which the persecuted Christians first held religious services, that was imitated in the earliest churches, it clearly is still the inside form of our church edifices from the simple village structure to the grandest cathedral. To the long straight hall, growing darker as it was more deeply penetrated, there have been added side aisles, with apses, and niches to accommodate statues, with other modifications; but the Egyptian, Grecian and Roman model of temple-build-

ing, with the sacred enclosure from which the worshipper was excluded, remains to us.

The mediæval period showed a transition from classicism evidently experimental, as when the basilica form was raised to two or three stories, each narrower than the other until the uppermost elevation became insignificant, and the whole outline unpleasing. Buttresses were developed from the Greek pilaster, being merely a thickening of the flat wall at points where greater strength was required. The tendency

were employed as the base from which sprang arches of nave and transept, or the supports of the dome itself. They divided the interior of churches into three aisles, and formed colonnades in lateral projections, adding grandeur but not mystery to the sacred place. Domed roofs, high arched windows, lofty bell towers and great size united to impress the beholder.

But all these were simply the back ground on which, in the Renaissance of the arts, painting and sculpture, with



A STUDY

to accentuate upward lines instead of horizontal ones gave a different character to buildings, and the introduction of windows as a feature, were all innovations which produced a style called Romanesque, or early Gothic (on account of its rudeness) but out of which the perfected Gothic in the course of half a dozen centuries was evolved.

Columns, as the change progressed, became adjuncts to instead of the main features of a building. While they still occupied their former position as supports to the roof of a portico, they were replaced in the walls by flying buttresses used to resist the pressure of the roofing, and on the inside

mosaic and bronze work, were employed. Inside and outside, churches were decorated with a richness wonderful and worthy of admiration, if not in every instance in correct taste. The guild of masons was granted by the Popes special privileges and exceptions on account of their importance in church architecture. Artists of every guild received high honors and rich rewards. The treasure of all Europe was at the disposal of the church. Cities rivalled each other in patronizing art, and princes surrounded themselves with scholars and men of genius.

To this sunburst of imagination and learning the Crusades

had contributed not a little. Religion, romance, adventure had given life to the germs of intellectual activity which during the many centuries of mental darkness in Europe had lain dormant. From the Orient the fittest to survive returned with new knowledge. Those who had gone simply as mendicant pilgrims perished by thousands. Others who remained a home, in the absence of their feudal lords learned to become their own masters, and although the wealth which was brought back went chiefly into the coffers of the church, it was the Crusades that first lifted the yoke of surfdom from the neck of darkened Europe, and gave a fresh impulse to civilization.

Not only was Rome awakened to new life, but many cities of southern Europe, Venice, Pisa, Sienna, Perugia, Florence and Milan. In Italy, with others in France, Spain, Germany and England strove together for five centuries to discover new styles which should combine the religious sentiment with grandeur and beauty in the most perfect form.

The trade of the Mediterranean cities with the east, the invasion of Spain by the Saracens, the study of the remains of classic art all contributed to the development and completeness of the Gothic style. In this pursuit the suggestions of climate are plainly evident, the more northern countries contributing to Gothic architecture a greater slant in the roof with more projecting cornices, and more projecting buttresses than were thought necessary in the south of Europe. Also the sculptures used as architectural features had a character of their own, as different as the legends of the early northern writers are different from the classic poetry of Greece and Rome. Despite these characteristics the architectural idea continued to soar heavenward on lines of ever-increasing beauty until there seemed nothing left, in some instances, to be desired.

The clever critic, however, who approaches St. Peters at Rome, so commonly regarded as the show church of the world, soon becomes sensible of a defect in its proportions. The designer had not sufficiently studied perspective and proportion to give the beholder a true idea of its great size, or even a magnified one, which would be better. There is nothing with which to compare it, or scale by which to measure it, and it becomes commonplace by looking like a smaller building seen through a spectroscope. The rule in Gothic architecture is the height of a man multiplied, not exaggerated. It is this careful study of proportion, both real and seeming, which constituted the charm of Grecian art.

The interior of the St. Peters has the fault just referred to, the paintings upon the dome being of special scriptural subjects, whereas at such a distance from the eye they should be of a decorative style only, and simple for effect as ornament, while the coloring should be so delicate as to increase the apparent height instead of lowering it, as very strong colors would do. But even Micheal Angelo had some things to learn; and besides, his patrons required scriptural subjects visibly portrayed.

But the glory of St. Peters was the successful erection of so vast a dome, the effect of which was afterwards lessened by the lengthening of the nave, causing it to sink, apparently, as the structure is approached from the west front. With its magnificence in size, in decoration, in art treasures, and material wealth, to which each one of the long succession of Popes has added something, St. Peters may well be regarded as an architectural wonder, the rival to which our age is not likely to produce, because the conditions can never again be the same that they were from the eighth to the sixteenth centuries.

As a matter of fact, Italy never fully adopted the pointed Gothic style, although it is found with modified features in such structures as the cathedrals at Florence, Sienna and Milan. The latter, indeed, is architecturally faulty, being impressive chiefly on account of its size and its richness of ornament rather than its design. The Gothic period ended with the beginning of the Renaissance in the thirteenth century, but it is to the monuments constructed during its continuance that we turn with most interest. It is the history of architectural experiment carried on for a thousand years, and under many hampering vicissitudes. It shows us combinations which, if lacking in classic simplicity and elegance, suggest strength, invention, sentiment, and achievement lacking in this our age.

Although the germ of the ancient temple, as has been stated, had been preserved in the portico, the columned aisle, and the apse at the east end of the aisle (an Oriental idea) the change in religion in the Christian period called for changes in the interior and exterior arrangement of churches which gave great scope to all the arts. The campanile or bell-tower, and the baptistery were usually separate structures, treated often in a style quite different from the church. The pulpit and the choir afforded opportunities for the employment of original designs, both by architects and sculptors. Upon these features were lavished years of labor and large sums of money.

Taking for example the pulpit of the baptistery at Pisa in Italy, executed in the latter half of the thirteenth century: It is of marble in a hexagonal form, supported upon seven pillars, while two more support the staircase. Three of the columns rest upon figures of lions with smaller animals in their claws. Three animal figures, a lion, a tiger and a griffin support the central column, and at the foot of the stairs is the recumbent figure of a lion. The shafts of five of the main columns are of different kinds of granite, while the two under the stairs are of Parian marble, and two others are of Sicilian jasper and brocatello. There are two desks so placed as to constitute ornamental features. Above the columns are allegorical figures of Prophets and Evangelists. There are, carved in relief upon the five sides of the pulpit, scenes from the Annunciation, the birth of Christ, the Adoration of the Kings, the Presentation in the Temple, the Crucifixion and Last Judgment.

All this suggests the early Pagan idea of ornamentation, which indeed it resembled; the details being brought out with painful minuteness, black paste being used to accentuate the pupils of the eyes, the cavities of the nostrils and ears, and the lines about the lips. The hair and ornaments were gilded, and the figures all in such high relief as to be very nearly detached.

It has been remarked concerning this work that the figures are two grand and noble for the proper representation of such scenes, which called for tenderness and humility. The explanation is to be found in the fact that the artist, who was also the architect, had studied the Roman antiques. The same artist being called upon to invent devils to suit the popular notion of Satan and his imps, made them with repulsively grotesque head and features, the body and claws of a vulture, joined to the legs of an ox. Such was the luxuriance of the mediæval imagination applied to church building, both inside and outside.

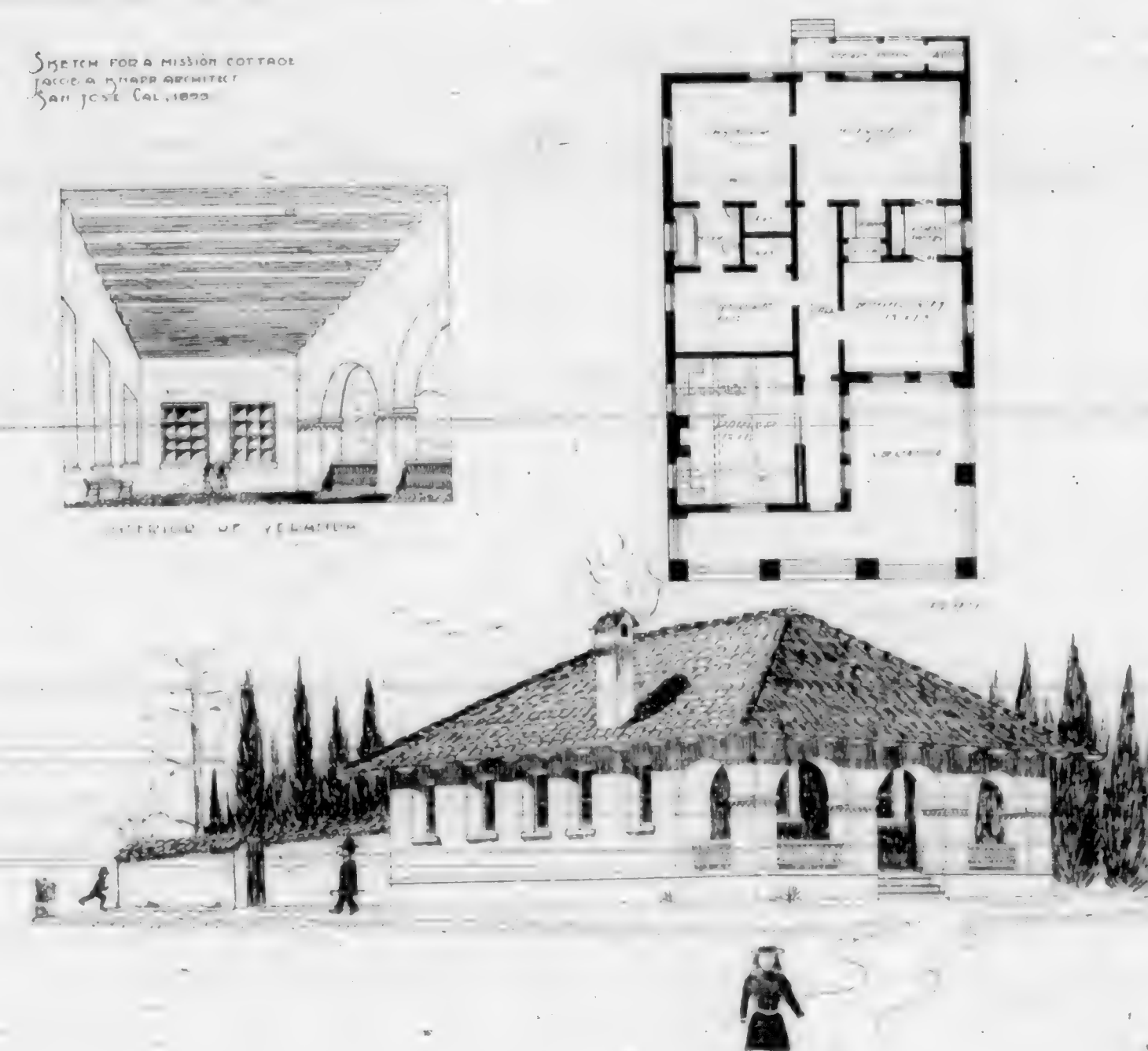
All the most famous cathedrals of Europe are restorations of the earlier Christian churches, as, for instance, that of Milan, so celebrated by writers of books of travel. The name of its original architect is not known, but the architect

who undertook its reconstruction, in 1386, was an Italian Giam Galeazzo Viconti. The work proceeded slowly, notwithstanding that masons were called from Germany to assist in it.

It was not finally completed until 1805. The form is that of a cross, the length four hundred and seventy-seven feet, with a width of one hundred and eighty-three feet. The height of the nave is one hundred and fifty-five feet, that of the cupola two hundred and twenty-six, and of the tower three hundred and sixty feet.

A work done by so many masters could not have a perfect

fully proportioned. The life of the Virgin is illustrated in nine scenes in bas-relief, two upon each face of the basement, and the ninth, a large scene, covering the back of the tabernacle or shrine. All the work is graceful and refined, including the beautiful statuettes and the clustered columns and pinnacles. Its rich mosaics and exquisite finish make good its claim to be called the "Jewel of Italy." Its cost was eighty-six thousand gold florins—money that had been poured into the treasury of the church during the prevalence of the plague of 1348, when miracles were worked by the shrine of the Virgin.



purity of style. The Gothic style of the first intent is destroyed by Romanesque windows, portals, and other features. The interior has two aisles, and there are aisles in the transepts. The roof is supported by fifty-two columns, with canopied niches for statues in place of capitals. The painted glass windows of the apse are very brilliant; the carvings are elaborate; there are hundreds of colossal statues upon the cornice, roof and various projections, all of which, together with the immensity of the white marble pile form an object bewildering as captivating to the beholder. But the Cathedral of Milan cannot be said to have a distinct place in the history of architecture.

Rome had converted basilicas into churches. In the beginning of the fourteenth century Florence converted a market place into the church of Or San Michele, the artist taking eleven years to complete the change. A shrine to the Virgin was erected in the form of a Gothic pyramid, of white marble, which rose nearly to the roof, and was beauti-

In the beginning of the fifteenth century there was a meeting of engineers at Florence, competing for the acceptance of plans for raising the cupola of the Cathedral San Marcia del Fiori, the largest dome, measured diametrically, in the world. The work was entrusted to architect Filippo Brunellesco, who was also a sculptor. It was of an excellence of construction that has never been surpassed, but Michael Angelo, who greatly admired it, made the dome of St. Peters to excel it in beauty.

Brunellesco had much to do with the Renaissance or rebuilding period of architecture in Italy. He rebuilt the church of San Lorenzo at Florence, and built the church of Santo Spirito, the interior of which is in his best style. He was one of the competitors for the honor of designing the second bronze door of the Baptistry at Florence which was secured by Lorenzo Ghiberti, and begun in 1403, and which has been the admiration of the world for four and a half centuries, as it must continue to be for all time.

Turning from churches to palaces, Brunellesco designed the Pitti Palace, at Florence, which is among the earliest efforts of the Renaissance in this branch of architecture. It is monumental in grandeur, with a facade four hundred and sixty feet in length, of three stories, each forty feet in height, and built of undressed stone, or fragments of rock rugged and dark. Immense round arcades support the windows, and a simple balustrade runs along the top of the wall. No attempt is made to imitate any order.

Some reason other than indifference to architectural effects should be looked for in accounting for the bestowal of all the arts could bring to beautify churches, while the residences of princes were still rude in construction. That reason was probably to be found in the fact that churches were places of sanctuary, where life and treasure were safe from foes or plunderers, while palaces in the frequent wars between neighboring states were points of attack. Gradually as civilization developed the reign of peace, the embellishment of dwellings amplified, and there arose in the sixteenth century many instances of the genius of the age applied to the homes of the rich and powerful.

The farther from Rome we pursue the subject, the more we find of originality of fancy in combinations of styles. From Venice to London, through France, Spain and Germany, there occur continually new features. The Romans adhered more or less tenaciously to the classic, or ancient Roman models. Florence violated this classic idea by superimposing several stories of columns supported by cornices, with arched windows between, in flat walls. Venice hung balconies and oriels out from her windows, and was profuse in wall decorations, both as to design and color, using different marbles to produce effects. The French built their chateaux with round towers at the angles and steep roofs, dormer windows in the upper story continuing the architectural design above the cornice; while their town houses made up for this simplicity by a confusion of orders and details which, while not strictly correct, were undeniably picturesque.

England had less to do with the Renaissance than continental Europe. What corresponds to it, known as the Elizabethan period, is really the perfection of the Gothic style of which England furnishes the finest examples, St. Paul's in London being the chief. About the middle of the seventeenth century the restoration of the old St. Paul's church was projected, and undertaken by Sir Christopher Wren, who promised to remodel it "after a good Roman manner," and also not "to follow the Gothic rudeness of the old design." In the same year, however, London was burned, and only a portion of the walls of St. Paul's left standing.

Two or three years afterwards Wren was again commissioned to execute the rebuilding of the church. His first plan had too many features of the "Roman manner" to please the dean and chapter, and another was substituted in which the architect finally modified and improved upon the former ones, the result being the present St. Paul's, whose symmetry is unrivalled by any Gothic structure in Europe. He overcame the defect in St. Peter's of the apparent sinking of the dome, by placing a second external higher dome of wood over the internal one, thus preserving the interior proportion while giving the necessary elevation on the outside. By an ingenious device he furnished adequate support to the stone lantern surmounting the dome, which gives the effect of great elevation to the structure.

Wren rebuilt several of the many churches destroyed by

the great fire, besides designing numerous public buildings in London and elsewhere. His genius is impressed indelibly upon English architecture.

Germany was less affected by the revival of art than was England. Spain was subject to such conditions, through the influence of the Moorish spirit, as to take it out of the category of the countries prompted by the Renaissance spirit. Of the great buildings erected during this period the most noted are St. Peters in Italy, the Escorial in Spain, Versailles in France and St. Paul's in London. In contemplating its glorious achievements the student of architecture must be reverently impressed with the power of the human intellect, and be led to ask himself, "What of the future?"



The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to 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.

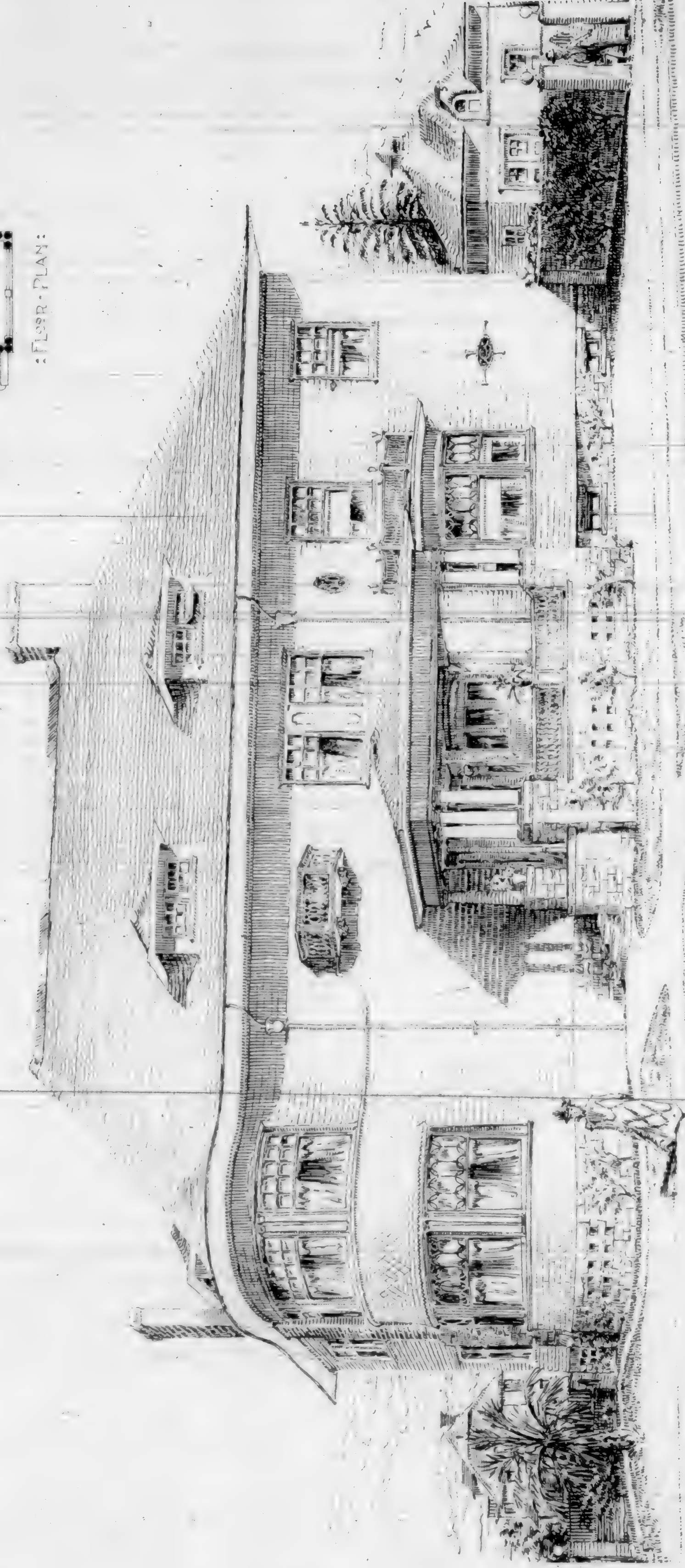
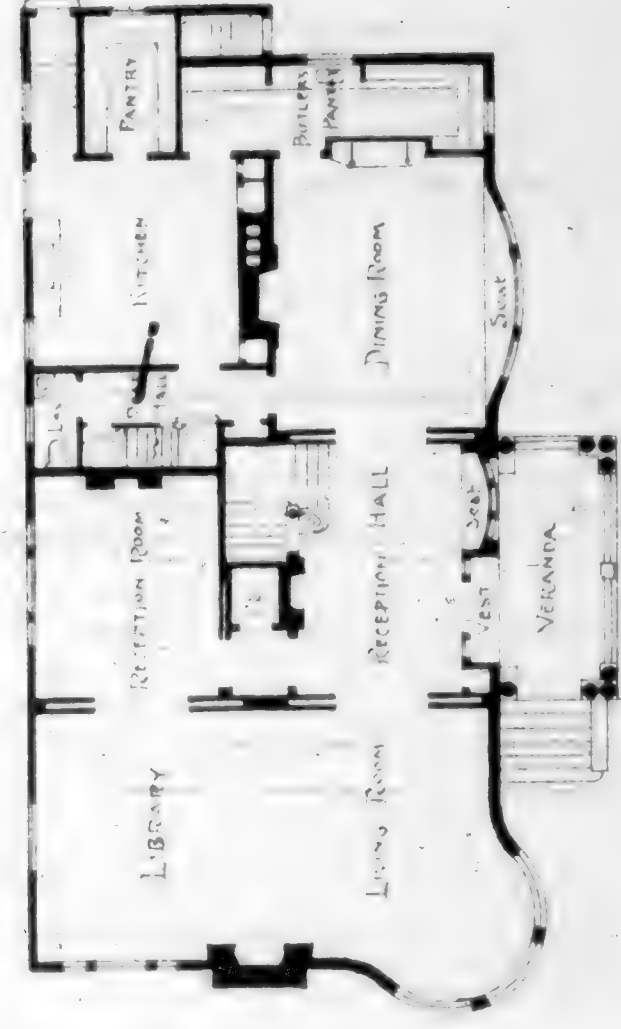
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

WORK has commenced on the third \$60,000 structure to be built this year in San Francisco. It will be erected by Frederick Kronenberg on the northeast corner of McAllister and Franklin streets, and will cover an area of 137.6x120 feet. The main front will be on McAllister street, where five stores will be situated on the ground floor with rooms in the rear. Above will be sixteen flats, access to which will be by means of ten tiled vestibules so arranged that each apartment will have its separate entrance. The construction will be of the most modern character and the interior appointments will be of the most convenient kind. In addition to the main building a smaller one containing four flats will be placed on the end of the lot facing on Locust avenue. Salfeld & Kohlberg are the architects of the Kronenberg building.

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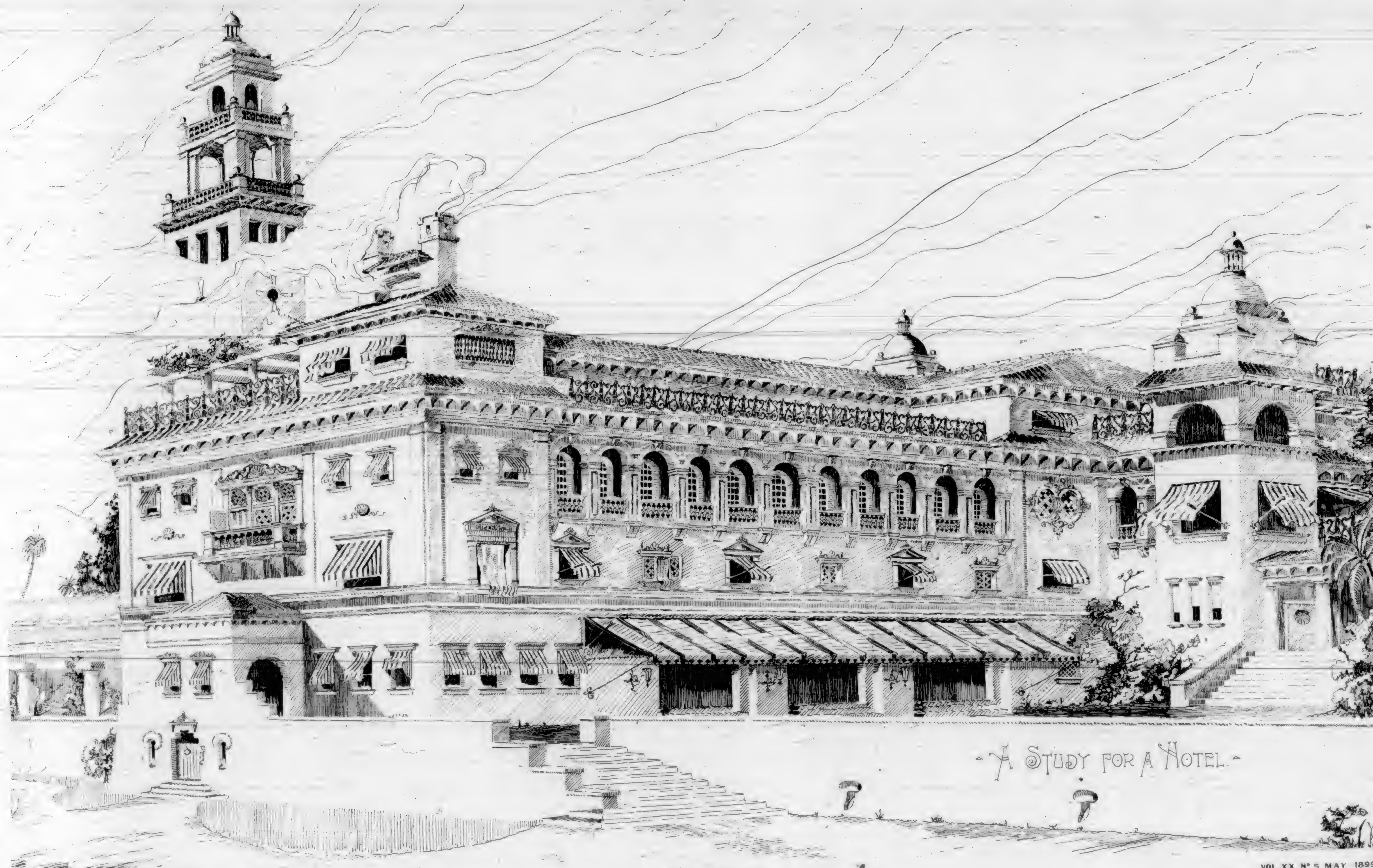
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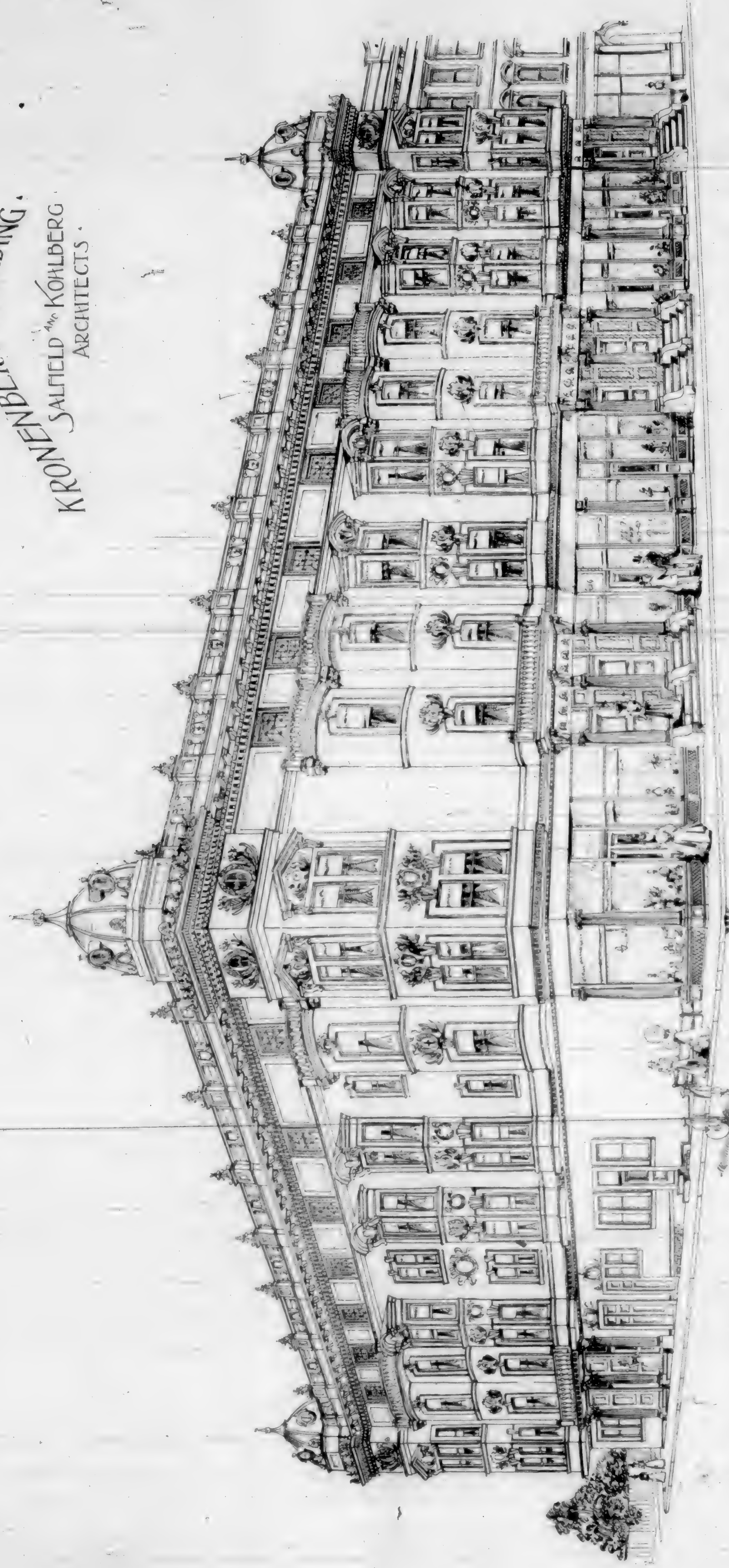
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VOL. XX, NO. 5, MAY 1899.



- A STUDY FOR A HOTEL -

KRONENBERG BUILDING.
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ARCHITECTS.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BARTON & REY PHOTO LITH

VOL XX N° 5 MAY 1899.

THE REAPER CLAIMS A PIONEER ARCHITECT.

WILLIAM PATTON DIES AT HIS HOME IN ALAMEDA.

WILLIAM PATTON, one of the pioneer architects of the Pacific Coast, who designed a portion of San Francisco's new City Hall, died this month at his home, 2253 Central avenue, Alameda. He had been ill for a number of months, suffering from cancer of the throat, and his death had been expected daily. Deceased was a native of Sunderland, England, aged 78 years. When a boy he entered an architect's office and served his apprenticeship. When news of the gold discoveries in California reached the old country he was among the first to start for the new El Dorado.

After passing several years in the mines, Mr. Patton returned to San Francisco and opened an architects office on Washington street, where he followed his profession with great success and amassed a fortune, part of which, however, was lost in late years by unprofitable speculation. Mr. Patton married in San Francisco. About twenty years ago he built his home at 2253 Central avenue and took up his residence in Alameda.

Many of San Francisco's early landmarks were designed by Mr. Patton. Some of them have since been torn down, while others are still standing monuments to the architect's skill. He was a member of the San Francisco Chapter of the American Institute of Architects. Among the San Francisco buildings designed by him are the Sutter street Synagogue, the Safe Deposit building, Donahue block, Mission and Fremont streets; the old Star King church, since replaced by the new structure; the old Chronicle building, Bush and Kearny streets, and the Alcazar building. He was supervising architect of the new City Hall, and designer of the northwest and northeast wings, the City Prison and the Hall of Records. Many of the finest buildings in Alameda were also designed by him.

Mrs. Patton died about fourteen years ago. Two sons, William and Clarence, survive the father. Deceased was a member of the Society of California Pioneers. The funeral services will be held under the auspices of the society.

A MAMMOTH BLOCK OF STONE.

THE SOUTHERN Marble Company, of Marble Hill, Ga., has won the distinction of taking from its quarries in Pickens County one of the largest blocks of marble that has been quarried in the world during modern times. The marble was taken out last month, and has been shipped north for use in one of the contracts of the great firm of Norcross Brothers.

The block of marble is almost pure white and measures 27 feet 2 inches long by 4 feet 3 inches wide, having in all the mass 500 cubic feet.

The officials of the company are proud of the fact that the block was removed after careful labor without a break, as it is considered very difficult to remove such a mass without some accident happening to it in the process of removal from the quarry.

The exact weight of the block, according to the statement of the manager of the company, is 100,066 pounds, requiring an immense amount of labor to finally place it on board the car for its journey to the north.

The next largest block of marble ever taken out of a quarry in Georgia was on exhibition at the Cotton States and International Exposition and weighed only 45,200 pounds, or less than half of the weight of the monstrous block taken out last week.

Notice of the removal of the monster monolith was sent to Professor Yeates, of the Geological Survey, and a photograph of the block, just before it was put upon the cars, will be placed in the permanent exhibit of the survey.—Stone.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street, at 4 p. m.

SETH BABSON, Pres.
J. W. REID, Sec.

H. A. SCHULTZ, Vice-Pres.
JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

A. B. BENTON, Pres.
JOHN P. KREMPPEL, Sec't.

ARTHUR B. BENTON, Vice-Pres.
AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres.
E. W. DUNN, JR., Sec.

JAS. G. HILL, Vice-Pres.
W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. PERCY, Pres.
OTTO VON GELDERN, Sec.

W. F. C. HASSON, Vice-Pres.
EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres.

J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. KENT, Pres.

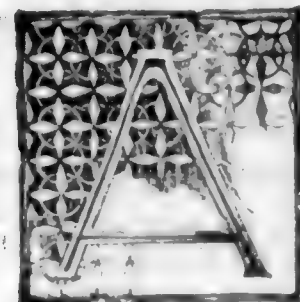
JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres.

M. V. BRADY, Sec.

ANCIENT AND MODERN BUILDING IN PALESTINE.



A meeting of the English Architectural Association in January, Mr. Beresford Pite gave an illustrated lecture on this subject.

Mr. Pite declared that it would be impossible for him to cover the subject with any thoroughness in one lecture, and he could only relate what struck him most forcibly when he visited Palestine. The lecturer then showed how the architectural interests of Palestine began with caves and rock tombs, cisterns and oil and wine presses, and then the buildings. The variety of influences which passed over the land in its early history had its effect on the people and their work. Beginning with Egyptian influence, they came to periods when Phœnician, Assyrian, Græco-Roman and Roman styles could be traced. Then the history of the country became obscure as they passed through dark ages to the Arab period. The years of crusading followed, dotting Palestine with interesting examples of Mediæval art. Turkish sway, too, had left its memorials, and as landmarks of modern work and travel some buildings presented the strong characteristics of the Gothic Revival. Apart from the artistic and historic periods there was the material to be considered. The building material most ready to hand was a hard limestone, difficult to work and offering little opportunity for ornamentation. The soil of the land was poor and yielded but scanty crops of coarse grain, so that when seeking to copy from nature the native imitated the heaviness of his surroundings. The country was also the seat of endless wars and disasters, so that durability and not beauty was the great aim of those engaged in architecture. The lecturer then gave some practical hints to those who might have to design for buildings in Palestine. The consideration of aspect was most important. It was always well to avoid an eastern aspect, and near Jerusalem itself it was advisable to turn the building away from the road because of the quantity of dust, which was terrible during the hot months when there was a drought of water. There were only two wells in Jerusalem, and the city was wholly dependent on the rain fall for its supply of water. In the absence, therefore, of a water supply the cost of water had to be seriously considered. If water ran out during building operations it meant an increase in the cost of construction. It was, therefore, necessary to begin building operations by constructing and excavating a cistern for the season's rainfall, thus providing against the drought which would certainly arise during the hottest months. There was an absence of any system of drainage, and no kind of cesspit could be properly adopted because of the hardness of the rock and the small depth of earth which covered it.

When designing a building the arrangements for heating had hardly to be considered. Fireplaces resembling those of the Western nations were not generally used. In buildings established for the protection of Russian subjects Mr. Pite said he noticed more attention had been paid to the heating of the building, and stoves had often been adopted. The carriage of materials was a most important item when doing work in the East. The railway could only carry coal, so that it was impossible to send up heavy material in large quantities. Camels were the beasts of burden. In order that foreigners might erect a building of any size a royal fireman from Constantinople was necessary, and even when this Imperial permission had been obtained the local authori-

ties had to be pacified and a liberal amount of backshish expended before operations could be commenced. If mosques were in the vicinity of the site the permission was more difficult to obtain, the religious traditions and superstitions of the case bearing an important part in the negotiations. There seemed to be no builder, and consequently no contractor, in Jerusalem; but still the lecturer, with the assistance of a German architect resident in Jerusalem, had overcome such difficulties. Plans made in London had been carried out with the utmost accuracy. The workmen would only recognize one master, and thus the man who gave the orders must also have the paying of the men engaged on the job. There was an entire absence of sand for building purposes, but a good supply of lime was to be obtained.

Mr. Pite then gave a list of the prices charged for work in Jerusalem:

Roofing.—Tiles came from Marseilles and cost 25 francs per 1,000. The work was wired to battens; rewiring was necessary every ten years.

Bricks.—The best were foreign, the native ones were worth nothing. Bricks cost from 7 to 12 francs per 100 (*i. e.*, 40 to 50 per 1000).

Paving Tiles cost from 6 to 8 francs per square metre.

Timber.—About five times the cost paid at home.

Building cost for cubing about 12 francs per cubic metre, about 10 francs for foundations, and cisterns 10 francs.

Lime costs about one-twelfth of whole buildings; lime costs about one-fifth of cost of wall, including probably plastering; for girls' school (not plastered), one-seventh to one-eighth.

Walling.—Stones for inner side 1 piastre each, for outer side, hewn, 2 piastres each. Lime, 5 to 6 piastres. Wages and hauling, 10 piastres, or, in all, 12½ francs per square metre. Foundation walls, 10 to 11 francs, above ground, 14 to 16 francs; partition walls, 10 francs; dolma walls, *i. e.*, wooden framework filled with framing, 6 francs; vaulting, 8 francs—all per square metre.

Various Details.—Facade stone, 100 pieces, from 10 to 14 francs. External pointing, ½ franc per square metre. Corner stones or quoins, 2 francs each. Lintels and cornices, 3 francs per lineal metre, or 40 francs per door and window opening. Plastering, 1½ to 2 francs per square metre. Cementing new cisterns, 3½ to 4 francs. Plastering ceiling, 2½ francs. Tile roofs, including wood, labor, nails, etc., 12 francs; with heavier woodwork, 15 francs. Carpentry for window, glazed, painted and fixed, 50 francs. Per internal door complete, 50 francs; per pair of shutters complete, 40 francs. Iron bars fixed, ½ franc per kilo. Girls' school, Jerusalem, including boundary wall, gate-house and cistern, and clearing site, about 12 francs per cubic metre. Not plastered.

In the discussion that followed the lecture, Mr. A. C. Dickie said: The more modern Jerusalem had really few attractive features as regarded the construction of buildings. New settlements were springing up outside the walls of the old city, and German shops were being opened. One of these settlements or villages had become famous, inasmuch as old and empty petroleum tins had been largely employed in its construction. The Kaiser's visit to the Holy Land would long be remembered by those interested in the antiquities and beauties of Palestine. Prior to the Kaiser's visit to Jerusalem, when the authorities were trying to improve the look of streets, etc., several acts of vandalism were committed. Although the streets were then said to present

a cleanly appearance, it was hardly true, as the refuse and dirt of the principal streets were merely swept into the smaller and less frequented ones. Where old gilt-work in mosques had become dull, a little yellow paint was used to restore (such was the taste of the Turk) its first charm.—*Stone.*

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

THE first contract in the construction of the largest grain elevator in the world was let a few days ago by the great Northern railway. Schmidt Brothers of West Superior got the contract for the foundation, their bid being \$85,000. The elevator is to be located at West Superior, and will be built of steel, at a total cost of over \$2,000,000. Its capacity is to be 6,500,000 bushels of grain, or 2,500,000 more than the largest existing elevator.

THE Treasury Department last week sent invitations, under the provision of the Tarnsey act, to twenty leading architects to submit competitive plans for the new custom house building, to be erected on the Bowling Green site in New York City.

JAMES G. Hill, of Washington, D. C., has been selected to design the new building for the government printing office, for which Congress appropriated \$2,000,000.

ARCHITECTS and engineers are watching with much interest the character of foundations now being put in for the new office building which is being erected at 57 Washington street for the Western Methodist Concern, after plans by Architect H. B. Wheelock. The entire structure with rest on 32 caissons or concrete wells, each 4 feet in diameter, with a bearing of 9 feet at the bottom on hardpan, which is about 75 feet below the street grade. The maximum load on each well is 617,500 pounds, including the weight of the concrete, or about 9,700 pounds per square foot. This will not create any perceptible impression on the hardpan found in this location. The manner in which the concrete is lowered and tamped in these wells will also cause a friction against the walls of clay for its entire height. There is practically no settlement in this form of foundation, only that due to the shrinkage of the concrete, thus avoiding the uncertain settlement experienced in most all of our skyscrapers having the steel floating foundation; the particular preference over the pile foundations is the fact that surrounding property and buildings are not disturbed in any way, add that every concrete column actually rests on hardpan.—*The Construction News.*

THE Report of the Pennsylvania State Capitol Commission has been made public, and the politicians are busy extracting from it nutriment for their respective views of public affairs. With these, of course, we have nothing to do, but it is interesting to observe that the Commission seems simply to have thrown the instructions of the Legis-

lature overboard, at the suggestion of the architect. That the latter should have thought it desirable, instead of scattering the departments among a cluster of separate buildings, to gather them under a single roof, is quite intelligible; in fact, the same idea would occur to most architects; but that the Commission should have thought itself authorized by the statute under which it acted to adopt such a scheme is extraordinary, and it seems to us more extraordinary still that their action should have been supported by the Courts. If a man should commission another to buy him a coat, for \$50 mentioning that he expected at some latter time to get the rest of a suit, and his agent should bring him back a shirt, with the information that he had expended the fifty dollars for this, and had ordered in his name a four-hundred-and-fifty-dollar suit, he would hardly think that he had been well served; yet this is practically what the Commission has done for the State of Pennsylvania; for, according to its report, it will cost four million dollars, in addition to the amount already expended, to complete the building according to the designs prepared by the architect with the Commission's approval. If this is what Pennsylvania people like, and what Pennsylvania courts consider proper, we have nothing to say, except to warn architects and other unsuspecting people from trusting either in future. Meanwhile, we commend the closing paragraph of the Commission's report, with which it presents the shirt to the would-be purchaser of a coat, to the attention of the curious. "That the building in which the General Assembly now sits is not as handsomely decorated and finished, either internally or externally, as many people of the State would desire, arises solely from the fact that the Commission did not have at its disposal any money to expend upon unnecessary ornamentation." We hope that the owner of the shirt will be quite satisfied with this explanation.—*The American Architect.*

THE London Chamber of Commerce recently appointed a committee to inquire into the subject of secret discounts and commissions, by which many persons endeavor to secure business, at the expense, of course, of honest people. The report of the committee showed the extent of the evil, but without proposing any definite means for correcting it; and the architects, who see more than other professional men, perhaps, the injustice done to innocent persons by frauds of this sort, seem to have been roused to an earnest desire to have them corrected, if possible, by some sort of concerted action; and as the same evil flourishes here, our architects will watch with interest the course of their English brethren. In England, as here, the trouble does not seem to lie so much with the giving of bribes, which have small attraction for architects, whatever they may have for official persons, as with the practice of certain dealers and manufacturers of having a variety of prices for the same thing, varying in inverse proportion to the honesty or inexperience of the purchaser. We heard of a case recently, for example, where a certain appliance for steam-heating was called for by name in the specification for a building. The article was a good one, and the architect undoubtedly thought he was doing his employer a service in demanding it in the specification. About the same time, another contract of nearly the same importance was carried out for steam-work, in which the contractor, although not restricted except by a general provision that he should do a good job, used the same appliance. In everything but price the articles used under the two specifications were exactly similar, but the contractor who was required by his contract to use that particular thing,

and no other, had to pay more than three times as much for it as the contractor who was left at liberty in the matter; and, of course, the extra cost came out of the pocket of the owner of the building. As any architect knows, this is a very common experience, and notwithstanding the impassioned appeals of manufacturers to specify their goods, and their gratuitous supply of specifications mentioning them, the older men in the profession are very reluctant, and with good reason, to call for any appliance or material whatever by name in their specifications. In many cases, knowing the superior quality of a certain article, they would be glad to do so, if it were not for their conviction that they would in that way expose their clients to the risk of being robbed; and they prefer to leave the matter open to competition, even if they have to accept something not quite so good as they would like. That this state of things is not satisfactory either to architects, who wish their clients to have the best things made, or to the manufacturers, who think that their efforts to improve their goods ought to be encouraged, is evident; but the latter have only themselves, or more probably, their selling agents, to thank for the view which architects take of the matter. No doubt injustice is done to some honorable manufacturers by the suspicion and discredit which the tricks of the other sort have aroused in the profession; but this is not the fault of the architects, who have no means of judging, except by analogy, of the conduct of parties not personally known to them, and are columns are always open to the affidavits of dealers who can lay their hands on their hearts and swear that the net price of their goods to contractors is exactly the same where they are called for in the contract as where they are struggling to "introduce" them in competition with other articles of the same sort.—*American Architect*.

THE twenty architects invited to enter the competition for the New York custom house have all signified their acceptance, and the Treasury Department has mailed them the programme upon which the competition will be based. The new custom house will be one of the most important structures ever erected by the government outside of Washington, its cost being variously estimated between three and four million dollars. The architect who will compete for the plans for the new building are: In Chicago—D. H. Burnham & Co., Henry Ives Cobb; in New York, McKim, Mead & White, George B. Post, Bruce Price, Carrere & Hastings, Francis H. Kimball, James B. Baker, Cady, Berg & See, Clinton & Russell, Robert W. Gibson, Israels & Harden, Babb, Cook & Willard, H. J. Hardenbergh, Cass Gilbert, Trowbridge & Livingston, George Martin Huss, Howard, Cauldwell & Morgan; in Boston, Peabody & Stearns, Shepley, Rutan & Coolidge. The programme for the building, as sketched out roughly to the proposed competitors, suggests a structure six stories high, with 212,000 feet of floor space the absolute requirement. A hint is thrown out that it may be desired to add two more stories later, and designs may be drawn with reference to this possibility. The material of which the building is to be constructed is not designated, but is left to the discretion of the designers. According to press dispatches, it is the intention of the Secretary of the Treasury to award to the successful competitor the full five per cent commission on the total cost of the building. A commission, composed of the supervising architect of the Treasury and two architects

or experts in the construction of buildings, are to be judges, and report to the Secretary of the Treasury as to the relative merits of the designs and plans submitted.—*The Construction News*.

MILL-CONSTRUCTION is being severely criticised in Chicago, and, if the underwriters have their way, it will soon be a thing of the past. The loss-record for this class of buildings—even sometimes when equipped with automatic sprinklers—has been unsatisfactory, and before the committee of the Board of Underwriters the argument was made that such structures are destroyed even more quickly than buildings of ordinary construction. Rapidly-spreading fires and total losses, it was stated, seem to be characteristic of the class. The Kaestner, Armour, Felt, Traders' warehouse, Jackson Street, and other buildings recently wholly destroyed, are cited to prove their lack of fire-resisting qualities. It is therefore, proposed to suspend all allowances for unequipped mill-constructed buildings, and a sub-committee has been authorized to make the necessary investigations, and report as soon as possible. The underwriters' association has for years made liberal allowances for mill-construction, upon the theory that such buildings were slow-burning, and fires in them could be extinguished with moderate loss. Possibly for this reason, and because so many rates would be upset by withdrawing all existing allowances, it is quite likely that whatever action is taken will apply only to new structures. But the day of mill-construction has probably passed, not to return.—*Exchange*.

A COMMITTEE appointed by the American Institute of Architects reported upon the subject of architectural education at the last annual convention. The first architectural school in the United States was established in 1869, at the Massachusetts Institute of Technology, by Prof. W. R. Ware, who is now Professor of Architecture in Columbia University. Since that time flourishing schools have been established at Cornell, the University of Illinois, Columbia University, Syracuse University, University of Pennsylvania, University of Chicago, Harvard, Tulane, and McGill Universities. Since their establishment no less than 3250 students have received instruction; 650 have graduated, and a large number are now in practice. The committee favored the establishment of an educational requirement for admission to the Institute, and suggested that the diploma of a graduate of a recognized school might be accepted in lieu of an examination.

A MONUMENT to General Lafayette is now in course of construction on the Brandywine battlefield, in Chester County, Pennsylvania, near the spot where the general was wounded. The height of the structure is to be 78 feet, and the size of the base 24 feet square. The material is Brandywine granite, and the largest stone, which is the die, is to weigh fifteen tons. On this stone are to be four bronze panels, inscribed with the full record of General Lafayette, setting forth the battles he was engaged in and designating on what spot he was wounded. The monument is to be crowned with an historic bronze figure of Lafayette 12 feet in height. The memorial is the gift of John G. Taylor, of West Chester, who not only builds the monument but has set aside a sum for the perpetual care of the surrounding grounds.—*Exchange*.

FIRE PROTECTION OF TALL BUILDINGS.

IT WILL be remembered that when the upper eight stories of the Home Life building were out in the recent fire, the chief of the New York Fire Department stated that the failure of the firemen to do any effective work above the ninth story was what he had predicted whenever one of these tall buildings came to be tested by a serious fire. There is a limit of height above which the ordinary methods of fire-fighting by pumping water through a hose are inadequate. Much valuable time is lost in dragging the hose from floor to floor; it is always liable to injury from fire or falling debris; and of course there is the danger of bursting from overpressure, a risk that naturally increases when the water has to be forced to the upper floors of a twenty-story building.

The New York Fire Department has recently made a test of the height at which an effective stream of water can be delivered from its engines, which shows that our tall buildings are better protected than is generally supposed. A fire engine was connected to the mains and to a standpipe that extends the full height of the St. Paul building, and succeeded in forcing a considerable stream of water from the roof—at a height of 307 feet above the street level. With a pressure of 180 pounds at the engine, the water was thrown over St. Paul's Church, on the opposite side of Broadway, and fell into the churchyard beyond, a horizontal distance of about 250 feet. Unfortunately, the failure of one of the couplings on the standpipe within the building prevented the test being made with the maximum pressure at the engine of 300 pounds to the square inch; but enough was done to prove that the engines of the department can deliver water at a satisfactory pressure on any of the floors of our tall buildings. At the time the standpipe failed the engine was throwing over 250 gallons a minute at a height of over 300 feet, with only 60 per cent of the maximum pressure.

While it is true that the tall buildings are provided with their own fire service in the shape of tanks on the roof or special fire pumps in the basement, experience has shown that the system is not very reliable. The tanks are liable to be empty, or the pumps may not be available because of insufficient steam supply in the boilers, or the whole plant may be crippled by the flooding of the basement during the progress of a fire. But by the new system, if a fire should break out in a building supplied with adequate standpipes and a good elevator service, the firemen will be enabled to command a good service of water on any of the highest floors within a few minutes after reaching the scene of the fire.

The failure of the standpipe in the St. Paul building suggests that the fire system of these tall structures should be put in under the rigid inspection of the Building Department; that it should be of ample capacity; and that it should not be passed by the department until it has been subjected to a test pressure considerably beyond that which will obtain in actual service.

A further development of the idea of having the service of these buildings operated by the engines of the Fire Department would be to lay down separate salt water mains at stated intervals from Broadway to the Hudson and East Rivers, with connections at the water front to enable the powerful pumps of the fireboats to be concentrated upon a fire. This system is already installed in some Western cities, and it provides a supply of water far in excess of any-

thing that could be secured by the use of the ordinary fire engines. A combination of both systems and the provision of ample standpipes in every tall building would render these structures practically proof against destruction, so great would be the flood of water that could be let loose upon a fire. It should also be borne in mind that these towering buildings would not only be indestructible themselves, but they would afford an excellent protection against the spread of a conflagration. Their great mass would form an efficient fire-screen, tending to localize an outbreak, while they would serve as giant watertowers, from the upper floors of which a vast amount of water could be thrown upon the burning buildings below.—*Scientific American*.



PORTLAND CEMENT MADE FROM SLAG.

PORTLAND cement from iron slag has been so profitably and successfully produced from the refuse at the Sparrow's Point Works in Maryland, and at the works of the Illinois Steel Company, that a plant is to be established at Birmingham, Ala. The supply of slag will be drawn from the Emsley furnaces of the Tennessee Coal and Iron Company, the plan being to have an initial capacity of 1000 barrels a day. Machinery has been ordered for the plant, which will be in working order, it is expected, in about four months. This utilization of what was heretofore a useless by-product of pig-iron works is one that promises to add largely to the profits of the ironmakers, even though the production of the cement, as in this Birmingham case, is turned over to an independent company.—*Boston Transcript*.

BOOKS AND PERIODICALS.

BRIDGES AND FRAMED STRUCTURES, an illustrated monthly magazine, has made its debut with the April number. It is published by The Ranc Publishing Co., Chicago, at \$3 a year. The initial number contains the following interesting and readable contributions: A review of the life and works of Sir John Fowler; Pneumatic caissons for ordinary foundations; Assumptions made to determine draw span stresses; The architecture of bridges; Modern Spanish bridge engineering; The bridge work's estimating department; Chemical and physical construction of steel. Measurements for granite viaduct.

The matter is well edited and digested as well as pertinent to the field of enterprise which the title indicates. The articles are aptly illustrated, and the magazine printed on good paper. We bespeak for it a wide field of usefulness.

TRADE NOTES.

THE Grand Rapids Carved Moulding Company are known all over the country as the only concern that manufacture the real thing in carved mouldings. There are imitators and pressed mouldings and pressed pot metal that is in use in ornament, but when you want the genuine article in carved mouldings the above firm are the people who can supply your wants. Why? Because they are cut, the wood is displaced. They bear the same relation to the hand carved work that the machine stuck or shaped mouldings of the present have to the old hand worked. They are more even and perfect than can possibly be produced by hand and at a very small per cent of the cost. Where can you find ornaments that are acknowledged as correct as the Egg and Darts, Dentals, Fllets, Beads and numerous others that they produce? Send for their catalogue. See advertisement on page iii.

THE TALLEST CHIMNEY IN AMERICA.

THE trade press throughout the country has been giving considerable time and attention to the tall chimney and the electric power station of the Metropolitan Street Railway Company, in New York. New York City will soon be the possessor of two of the largest electric power stations in the world, says *Clay Worker*, designed to furnish current to two street railways. The delay in introducing electric traction has been a very advantageous one, since it is now possible to utilize the latest advancements in electrical engineering in both the generation and transmission of high potential currents. A further advantage is the concentration of all

the current-generating machinery in a single enormous station, so located that coal can be obtained and ashes deposited at the lowest possible cost, and where an ample supply of condensing water is available.

Alternating current at high potential will be transmitted from this central station to small sub-stations scattered throughout the system, where it will be transformed to direct current at low voltage, and fed directly into the mains along the road. The new power-house has been designed for a normal output of 45,000 horse-power.

It will be divided into two parts, one containing the boilers and coal bins and the other the engines and generators. There will be 87 water-tube boilers arranged in three tiers, each having a maximum capacity of 800 horse-power. The storage bin will be capable of holding about 10,000 tons. The engine room will contain 11 engines, each direct-connected to a three-phase 6000 volt generator. The engines have a maximum capacity of 6000 horse-power each, but an economical load of about 4000 horse-power.

The most conspicuous feature of this new plant is the immense brick chimney, the largest ever constructed. A solid block of concrete 88x85 1-3 20 feet forms the foundation. Starting with a square pyramid base 55 feet on a side, it gradually diminishes until at a height of 15 feet from the ground it is but 40 feet, at which point it continues up to 80 feet, with a side dimension of 38 feet, 10 inches. At this height it begins to change to a circular section, which change is completed at 95 feet, from whence it continues with a taper of five sixteenths inch to the top. The ornamental top begins at a height of 317 feet, the chimney at that point having a diameter of 26 feet, 10 inches.

A 12-inch fire-brick wall extending up 85 feet divides the chimney into two semi-circular compartments, preventing the current of hot gases from one set of boilers having any influence upon the gases coming from the flues on the other side. About four feet below the floor of the lowest flue, the fire-brick lining of the chimney commences, and extends about 8 inches in thickness to 5 feet above the upper flue, and from that point, 4 inches in thickness up to 115 feet.

The weight of the overhanging enlarged portion at the top is counteracted by three steel rings, the first at a height of 333½ feet and the other two at 3 and 6 feet respectively above the first. In the thickest portion of the cap the brick work is 6½ feet thick, sloping off to 20 inches at the top. The chimney is protected at the top by an iron cap made up of 40 cast-iron sectors bolted together into a complete ring and anchored to a steel ring embedded in the brick work about 14 feet below the cap. The diameter of the cap at its widest portions is 35 feet and the inside or flue diameter is 22 feet, or the same as the interior of the chimney all the way up.

The chimney is well protected from lightning by ten copper rods, 1¼ inches in diameter, projecting 6 feet above the top, terminating in four pronged points, each tipped with platinum for about 2 inches.

The fact that mechanical draft will be used at the other station, will furnish available data for drawing interesting comparisons. This station will have four stacks of modern height, sufficient only to discharge above the nuisance level. Taking the cost of the immense chimney at about \$100,000 and the cost of the induced draft plant at about one-third of this, and considering interest, depreciation and all standing expenses, it will be very interesting to calculate the relative merits of the two systems of producing furnace draft.—*Clay Record*.

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WE show here an illustration of our AMERICAN SLIDING DOOR HANGER for which we claim unusual advantages, great saving in time and expense, and superior excellence in operation, together with the following features not obtained or claimed in other hangers.

TRACKLESS—We obviate the use of a track above or below, and the special fitting necessary where a track is used.

NO WHEELS—There are no wheels to bind by reason of warped or sagging track. The movement is perfectly PARALLEL and insures against binding.

NOISELESS—The operation is noiseless and extremely easy.

DOORS EASILY ADJUSTED—The door can be readily adjusted plumb, raised or lowered by drawing them into the opening which gives easy access to the adjusting screws.

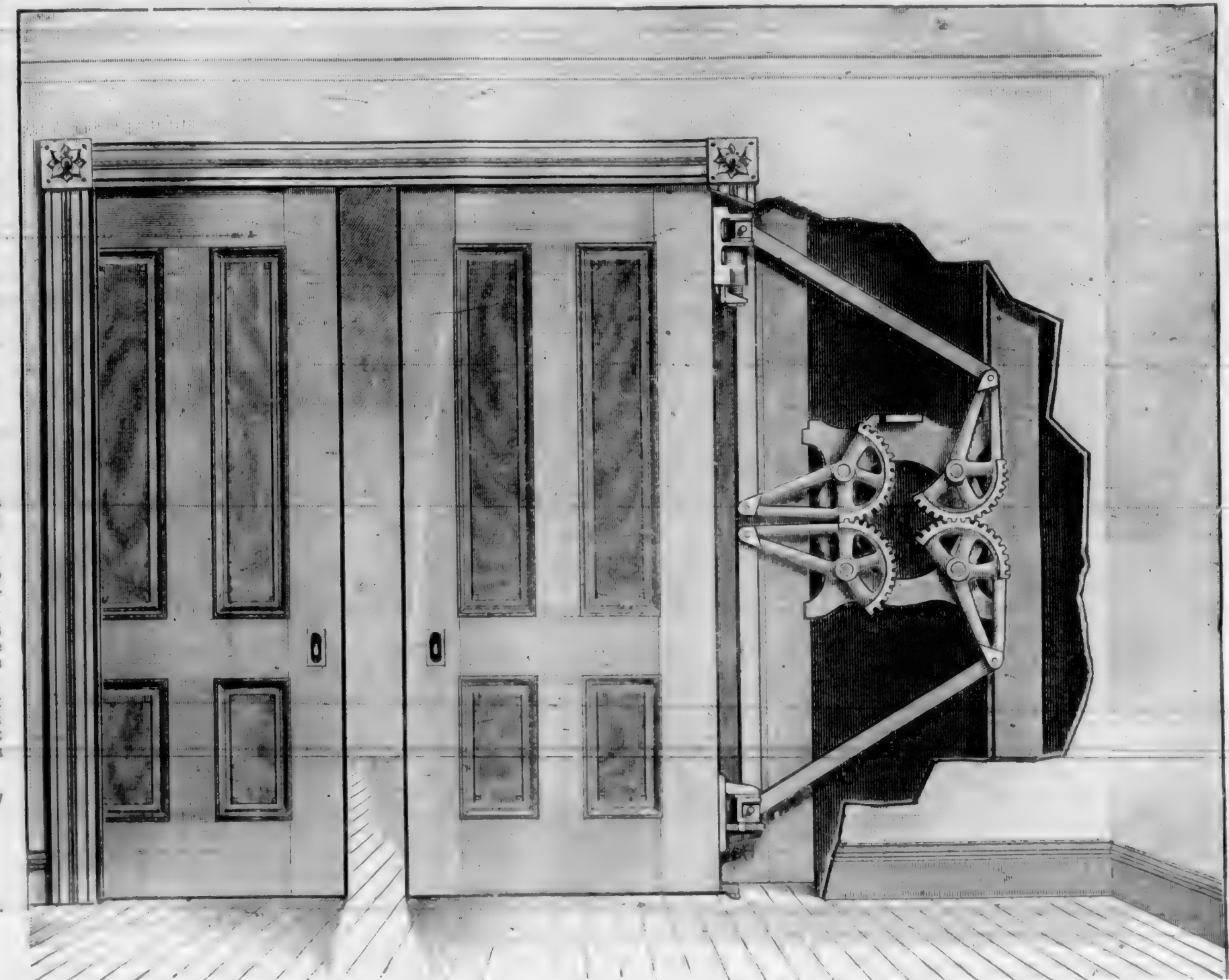
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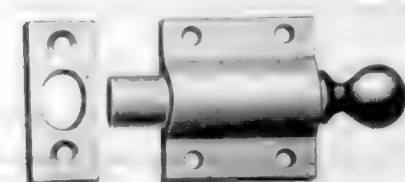
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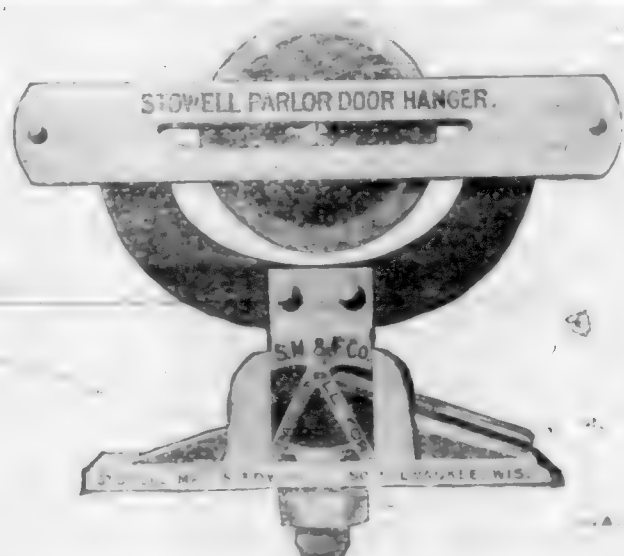
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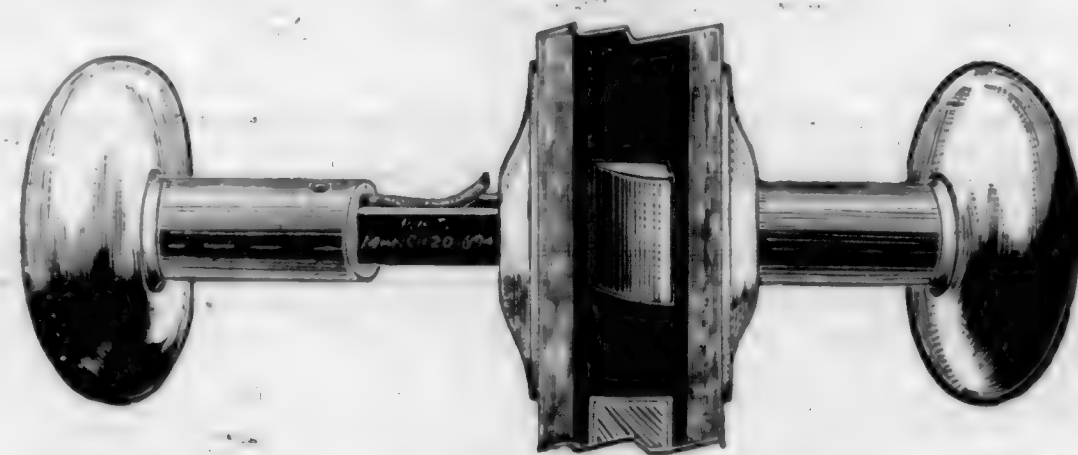
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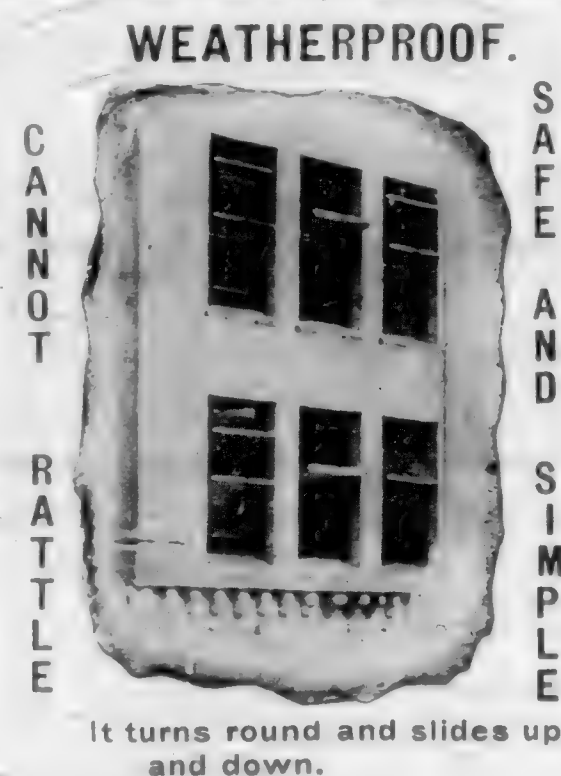
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TREASURY DEPARTMENT Office, Supervising Architect, Washington, D. C., May 18, 1899. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 20th day of June 1899, and then opened, for the construction, (except heating apparatus, elevator and electric wire conduits), of the U. S. Public Building at Helena, Montana, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Custodian of the site at Helena, Montana. JAMES KNOX TAYLOR, Supervising Architect.

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May, 1899.]

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

xiii

BUILDING NEWS.**ALAMEDA**

Euclid Park Track. To build; o. Capt. J. C. Eschen c. D. Straub & Son; cost \$6000.

St. Charles and Louisa. To build; o. E. H. & J. C. Lancel; cost \$3347.

BERKELEY

Bowditch and Channing. To build; o. S. J. Davis; a. Wm. Mosser & Son; c. Peterson & Persson; signed, April 26; filed, May 6; cost \$6550. Plumbing, etc; c. R. Rice; cost \$1510.

Crystal Spring Track, lot 9 block G. To build; o. Fannie Ashbury; a. J. T. Kidd; c. John E. Bigelow; cost \$1450.

Lot 45 block 3. To build; o. Mr. Harmon; c. John G. Adams; signed, April 13; filed, April 27; cost \$3700.

ELMHURST

Carpentry, etc; o. Josephine Wallace; a. J. r. Freeman; c. H. Wharton; signed, April 24; filed, May 5; cost \$12,970. Concrete, etc; c. Mr. Stone; cost \$2450. Mason work; c. J. A. Wilson; cost \$1225. Plastering, etc; c. W. C. Watson; cost \$1200. Plumbing, etc; c. Shepard Bros; cost \$2730. Painting, etc; P. N. Kuss & Co; cost \$1185.

OAKLAND

Broadway and Tenth. One-story brick; o. Lillian M. McPike, Nellie R. Lutz and Mary H. Miller; a. A. W. Smith; c. Ben O. Johnson; signed, May 16; filed, May 17; cost \$5194.

Jayne Ave. and Lee St. To build; o. Mary S. Cope; a. Cunningham Bros; c. Mr. Lake; cost \$41150.

Mountain View Cemetery. Granite coping, etc; o. Mt. View Cemetery Ass'n; c. Daniel Dwyer; cost \$2942.

Santa Rita Road. Alterations; o. Chas. B. Charlesworth; a. J. L. Welby; cost \$2110.

Thirty-second near Markes. To build; o. Fred and Zine Jepson; c. A. W. Pattiani & Co; signed, May 17; filed, May 20; cost \$1578.

HEALDSBURG

Two-story brick; o. Mr. Norton; a. Martens & Coffey; signed, May 1; filed, May 3; cost \$9000.

SAN LEANDRO

Factory; o. H. W. Bodwell; c. C. W. Duffie; signed, May 10; filed, May 11; cost \$2600.

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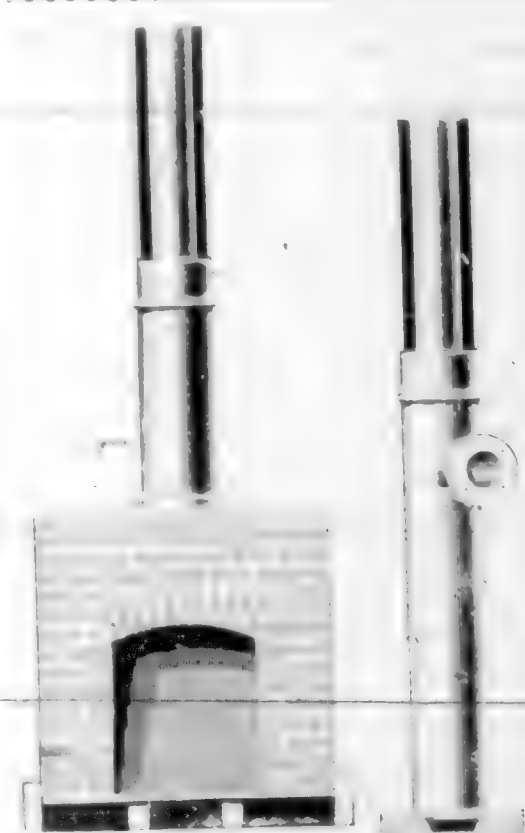
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

\$3.00 PER YEAR

VOLUME XX, No. 6.

JUNE, 1899.

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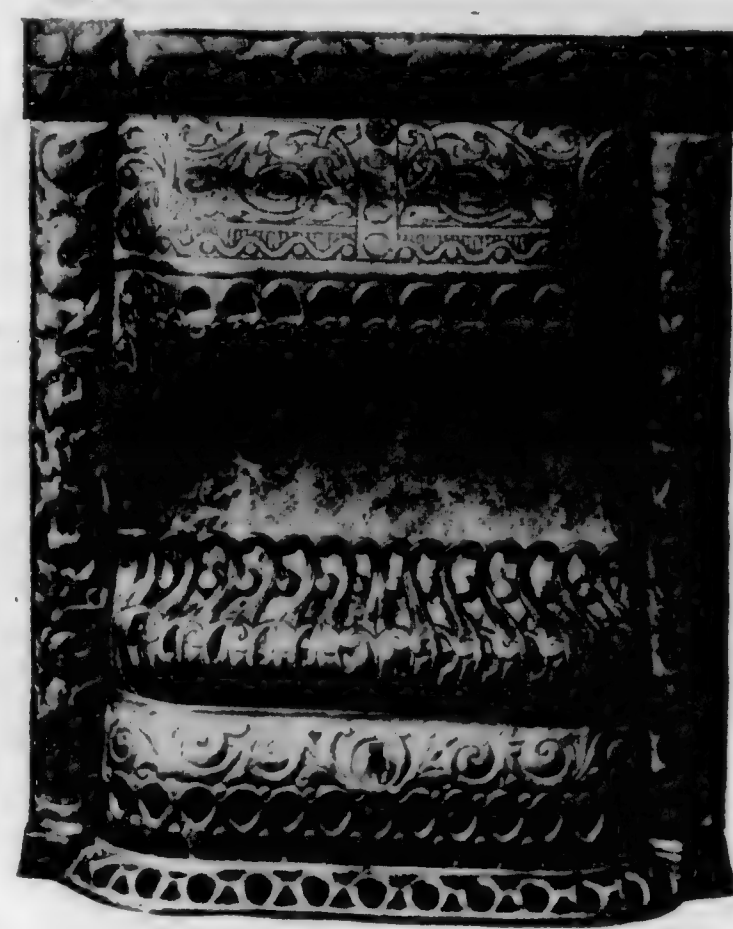
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BUILDING NEWS.

Broadway near Fillmore. Alterations and additions: o. B. Sheldeman; a. Salfeld & Kohlberg; c. J. Bucher; signed, June 18; filed, June 20; cost \$950. Plumbing, etc.; c. Ickelheimer; cost \$1125.

Bush and Battery. Concrete work; o. H. and S. Sachs; a. Salfeld & Kohlberg; c. Cal. Concrete Co.; signed, June 14; filed, June 17; cost \$1565.

California street, No. 1948. Alterations; o. Joseph Hyman; a. Percy & Hamilton; c. F. W. Kern.

California near Franklin. Painting, etc.; o. Kaspar Pischel; c. J. H. Keefe; signed, June 1; filed, June 5; cost \$1745.

Central Ave. near Page. Four two-story dwellings; o. D. Einstein; cost \$20,000.

Central Ave. and Page. Two-story frame; o. D. Einstein; cost \$6500.

Chestnut and Pierce. Filling in and grading; o. John N. Kennedy; signed, June 2; filed, June 8; cost \$16,237.

Clay near Laurel. To build; o. Chas. F. Hunt; a. E. A. Hermann; c. Peterson & Persson; signed, June 17; filed, June 20; cost \$8390.

Clay near Gough. Carpentry, etc.; o. Mrs. Marietta Sheeline; a. Salfeld & Kohlberg; signed, June 15; filed, June 18; cost \$5200. Plumbing, etc.; c. E. R. Tutt; cost \$1680.

Devissadero near Grove. To build; o. W. H. Mocker; a. R. Zimmermann; c. Chesney & Muller; signed, June 8; filed, June 9; cost \$1588.60.

Drum near Pacific. Additional story to brick building; o. A. B. McCreary; a. H. B. Maggs; c. J. W. Wissinger; cost \$7200.

Eddy street No. 430. To build; o. J. Moloney; a. Curtis Tobey; c. J. B. Gonyeau; signed, June 8; filed, June 18; cost \$3349.

Eighteenth and Stanyan. To build; o. Jennie E. Strauss; a. A. J. Barnett; c. W. R. Kenny; signed, May 25; filed, June 8; cost \$1600.

Ellis street No. 712. Alterations; o. A. G. McFarland; c. J. B. McKenzie; signed, June 8; filed, June 9; cost \$1,650.

Folsom near 6th. Alterations and additions; o. Aaron Shenson; a. C. M. Rousseau; c. H. Wilson; signed, June 20; filed, June 21; cost \$1385.

Fremont near Market. Re-building; o. W. R. S. Foye; a. Wright & Sanders; c. Robin on & Gillespie; cost \$33,452.

Geary near Grant Ave. Additions and alterations; o. Mr. Kliner; c. F. V. Acker; cost \$4000.

Golden Gate Park. Stone and brick work for music stand; o. Claus Spreckels; a. Reid Bros; c. Colusa Stone Co.; signed, June 14; filed, June 18; cost \$51,040. Concrete and cement work, etc.; o. S. Gillett & Co.; cost \$1637.

BUILDING NEWS.

Gough near Grove. Excavations, etc.; for two three-story frames; o. Ellen and Charlotte E. Dore; a. Thos. J. Welsh; c. S. A. Born; signed, May 24; filed, May 27; cost \$8000. Sewering, plumbing, etc.; c. James E. Britt; signed, May 24; filed, May 27; cost \$2237.

Grove near Lyon. To build; o. S. Garber; c. R. D. Cranston & Son; signed, June 12; filed, June 17; cost \$1250.

Haight near Steiner. To build; o. Andrew Burke; a. Shea & Shea; c. Paul Demartini; signed, May 27; filed, June 3; cost \$5250.

Jackson near Baker. Carpentry, etc.; o. Lizzie Peiser; a. Salfeld & Kohlberg; c. W. Horsmeyer; signed, June 16; filed, June 20; cost \$3651.

Jackson near Buchanan. To build; o. E. S. Tucker; a. Wm. Koenig; c. I. W. Coburn; signed and filed, June 3; cost \$4040.

Kearny and Washington. Metal grille work, etc.; o. City and County of S. F.; a. Shea & Shea; c. Geo. H. Fuller; filed, June 1; cost \$45,486. Gas and electric combination fixtures; c. S. E. Novelty Works; cost \$18,950. Water filter system; c. Cal. Art Metal Works; cost \$2450. Tinting and decorating; c. Geo. J. Smith & Sons; cost \$900. Electrical apparatus, etc.; cost \$3235.

Lombard near Fillmore. To build; o. Edward Ehrhorn and wife; c. Martin Weber; cost \$1150.

Lombard and Stockton. Alteration and additions; a. Deplere & Righetti; c. E. Daigero; signed, May 29; filed, June 1; cost \$2350.

Market and 5th. Electric elevator; o. Desire Fricot; a. I. I. Brown; c. W. L. Holman; signed, June 15; filed, June 19; cost \$2400.

Masonic Ave. near Frederick. To build; o. Kate W. Healey; a. A. R. Denke; c. Denke Bros; signed, June 4; filed, June 5; cost \$1592.

Montgomery near Pacific. Iron work, etc.; o. Ferdinand; a. R. Zimmermann; c. H. L. Peterson; cost \$1351.

Noe near 14th. Carpentry, etc.; o. John Stelling; a. A. Gellfuss; c. A. Howling; signed, June 15; filed, June 18; cost \$4425. Plumbing, etc.; c. Jos. Flood; cost \$1105.

O'Farrell near Powell. Carpentry, etc.; o. Emille M. Chabot; a. Shea & Shea; c. B. Dyrer; cost \$10,484. Brick, etc.; c. J. S. Fennell; cost \$14,198. Constructional steel, etc.; cost \$2947. Lath of expanded metal; c. Western Expanded Metal Co.; cost \$1035. Plastering, etc.; c. Floodberg & McCaffrey; cost \$2898. Plumbing, etc.; c. Allen & Looney; cost \$2870. Ornamental plaster; c. J. R. Schroeder; cost \$1340. Electric work; c. Will & Finck Co.; cost \$1835. Marble work, etc.; c. Lowry & Daly; cost \$1326.

Pacific Ave. near Octavia. Roofing, etc.; o. Abe Stern; a. R. Hunt; c. Conlin & Roberts; signed, May 21; filed, June 22; cost \$2490. Plastering, etc.; cost \$2893.

BUILDING NEWS.

Pierce near Filbert. To build; o. Mrs. Elizabeth Guehlberger; c. L. Cuneo; signed and filed, June 1; cost \$2250.

Page near Central Ave. To build; o. D. Einstein; cost \$4500.

Pine near Octavia. Painting and graining; o. Jonas Schoedfelt; a. Salfeld & Kohlberg; c. Lutge & Nagel; cost \$1450. Plumbin., etc.; c. Ickelheimer; cost \$4950.

Russ street Nos. 114 to 120. Addition; o. R. McNeil; a. M. J. Welsh; c. S. Doyle; cost \$3000.

Second and Stevenson. To build; o. J. S. Morgan; a. Havens & Toepker; c. Weismann & Whittle; signed, June 3; filed, June 9; cost \$17,220.

Second and Minna. Elevators; o. Christian Froelich; a. A. Sutton; c. Cahill & Hall; cost \$1800.

Seventeenth near Howard. To build brick; o. City of San Francisco; a. Shea & Shea; cost \$16,925.

Seventeenth near Channel. Fire-proofing, etc.; o. City of San Francisco; a. Shea & Shea; c. D. T. Pierce; sub-c. Western Expanded Metal; signed, June 9; filed, June 21; cost \$4300.

Spruce near Sacramento. To build; o. Margaret K. Foulkes; a. J. Mora Moss; c. C. M. Depew; signed, June 10; filed, June 14; cost \$3725.

Steiner near California. To build; o. William Trost; c. C. Zwielerlein; signed, May 27; filed, May 31; cost \$1275.

Sutter near Grant Ave. Wainscoting, etc.; o. Goldberg; a. Edward R. Swain; c. California Marble Co.; signed, June 16; filed, June 20; cost \$1030.

Taylor and Post. Painting and decorating; o. Congregation Sherith Israel; a. Salfeld & Kohlberg; c. D. Zelinsky; signed, June 10; filed, June 15; cost \$1200.

Tennessee near 23d. To build; o. Thomas and Alice M. Cummings; c. Wm. W. Redhall; signed, June 7; filed, June 8; cost \$2310.

Third and South Park. Three-story frame to contain 10 flats and 8 stores; o. James D. Phelan, Alice P. Sullivan, and Alice Phelan executors of Phelan estate; a. Curlett & McEw; c. A. McElroy; signed, June 8; filed, June 9; cost \$25,974.

Twenty-sixth near San Jose. To build; o. Mr. Corvelli; cost \$1800.

Twenty-third and Noe. To build; o. Jacob Kugel; c. J. T. McInnis; signed, May 23; filed, May 27; cost \$3705.

Turk near Webster. To build; o. Wm. Rotrosky; c. P. Rive; signed and filed, June 8; cost \$4231.50.

Union Square Ave. near Grant Ave. Brick building; o. Bernard Schweitzer; a. Percy & Hamilton; c. J. W. Miller; signed, June 6; filed, June 10; cost \$3178.

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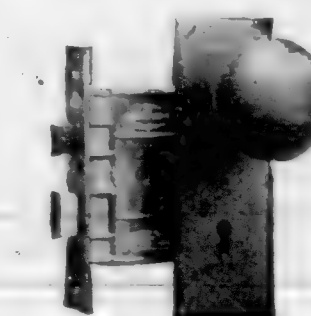
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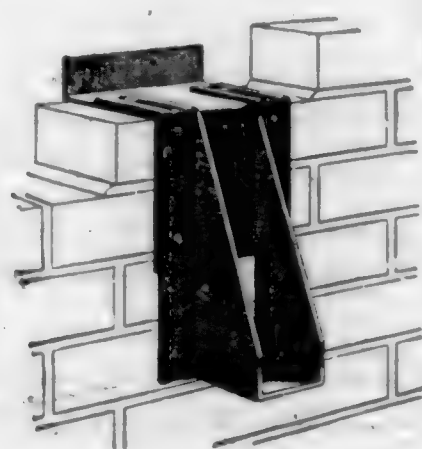
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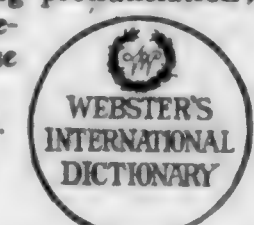
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BY
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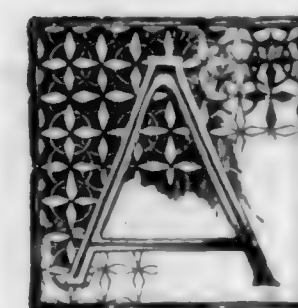
VOLUME XX.

JUNE 20th, 1899.

NUMBER 6.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.



AS A FEATURE in building designs, color is receiving some attention. There is here a field for exploitation, the subject being one of greater interest than at the first glance appears. Aesthetically it belongs to high art, and should be handled by artists in color, and by students of art such as Ruskin.

There is, moreover, the natural side to it, nature being the first teacher of art. Nature decrees that the sky and the sea should be blue or gray, in different shades; that the earth should be brown, in many shadings, from the yellow brown of the desert to the dark muck of the bog; and that the herbage and foliage that cover the earth should be in various tints of green. Gray is also a strong hue on nature's palette. With this she paints rocks and the stems of trees, and softens her too vivid greens everywhere they occur in large masses.

But nature does not confine herself to these general colors.

She illumines the sky occasionally with rainbows and clouds edged with the strongest prismatic hues. She decorates the fields with flowers of many dyes, and plants in endless shades. She variegates her rocks, and richly colors her minerals. She beautifies with consummate skill inorganic, organic, and animal life by means of her wondrous pigments.

All this is for some purpose. The color scheme of the universe is intentional. It is not an accident nor a vagary of the infinite mind. That it largely contributes to the welfare and happiness of man there can be no question. That we have failed to appropriate to ourselves all the good there is in it, goes without contradiction. But how to make it apply to our house-building—that requires some thought.

If we were to undertake to follow the painter of the Universe, we should make all large masses of building of some quiet color, using brighter tints only for decoration, and that sparingly. But we moderns have not yet ventured upon the experiment to any considerable or appreciable ex-

tent. No doubt we shall make many blunders before we master the art of building houses singly, or in rows, made beautiful by color effects.

There is something, however, which can be done in the interest of dwellers in cities—and especially in the city of San Francisco—whose eyes are being ruined by having to see by sunshine reflected from light-colored walls. Bad as it is to strive to see by insufficient light, it is worse to have to endure the torture to the eyes which comes from the glare thrown into rooms from neighboring house, painted, as a majority of San Francisco houses are, of a tint closely resembling the sands of Sahara. The desert itself could hardly be more fatal to vision than this reflected light inflicted upon helpless dwellers in buildings on the north or the west side of lots or streets built up on the opposite side with these colorless houses.

The effect of such light upon the optic nerve is entirely different from that of pure sunshine. Your room may be flooded with sunshine and no harm come to you, but light thrown against a wall and returned into your eyes, has the same effect that is produced by shimmering water or bright metal. Yet thousands of women sew, or write, or pursue other nerve trying occupations in just such light. Doubtless also, some schools are similarly situated, and the children are having their eyes ruined. Men's offices do not suffer so much from this cause, being in more closely built up districts, and among darker walled buildings.

Here is an opportunity for experiment in house coloring. From the expedient we may reach the beautiful, and cities be made studies of art instead of ugliness. Science must be invoked even in such matters as house painting.

ARCHITECTURE OF THE AMERICAN COLONIES.



HERE is no such thing in America, in the United States, at least, as a distinctive order, or a strictly American style of architecture. The aboriginal dwelling was usually a moveable one, owing to the wandering habits of the native races.

Those tribes who lived by fishing, hunting and corn-growing, as along the Atlantic Coast, built more substantially, out of logs and bark of trees, than those on the western prairies who lived by the chase and root digging. These being almost constantly on the move, sheltered themselves in tepees or tents of a circular or conical form, with an opening at top for the passage upwards and outwards of the smoke of their fires. Constructed of dried skins of animals, they were impervious to wind, and protected their inmates from the cold of the severe winters of the plains, especially as they were usually placed in sheltered locations.

Still farther west, under the milder skies of the Pacific Coast, a brush tent, or wickiup, sufficed for the gathering place of the family, and could be abandoned at pleasure. This was the style of dwelling of the California coast tribes. But farther north, in and above the Columbia River region, rude houses were constructed of planking made out of the easily split cedar of the northern coast.

These houses consisted of a basement a couple of feet in depth, often of from thirty to fifty feet in length, and twenty or thirty feet in width, over which was built the wooden

part of the structure. This was done by setting posts at the corners, and between, to which the planking was fastened by such means as were at hand. The wooden walls being set back two or three feet beyond the earth wall of the basement, left a bench of earth quite around the interior, which, being covered with grass matting, and skins, served for seating and sleeping accommodations. The roof, of planking and cedar bark, was supported by a ridge-pole and stringers. The only light admitted came through the doorway, which was at one end, and a square opening in the roof, left for the escape of smoke, the fire being built upon the earthen floor in the center of the house. It will be perceived that this dwelling, which cannot be classed under any recognized style, belonged nevertheless to what is known as the trabeated, or beamed style, like the Egyptian and Grecian structures. It is easy to trace the differences to their causes, while recognizing the single underlying idea of an oblong structure, with upright posts or columns in certain positions, and flat, or nearly flat, roofs.

Still farther north, indeed, we come upon detached columns outside the walls, rudely carved with genealogical emblems, or tokens, much after the Egyptian example of a goddess-faced capital. The human intellect, it would appear, starts out upon similar lines of progress throughout the world.

The first buildings by the white races in America were mere make-shifts—architectural accidents—due to unusual circumstances or exigences, like those found at Newport and Woods Holl, Rhode Island, believed to have been erected by Norsemen, about 1507. That one at Newport, known as the "Old Mill," is a round structure of stone, supported upon short pillars and arches, in the early Roman or Etruscan style. The other, at Woods Holl, is also round, and of stone, but is built up from the ground, and has a battlemented top. It is without openings in the wall, except the entrance, and narrow windows immediately under the cornice, suggesting the idea of a fortification.

The second oldest building by white people in what is now United States territory, and the oldest known residence, is in St. Augustine, Florida, which was settled in 1564, when the monks of St. Francis erected this house for their occupation. It is constructed of coquina, a mixture of sea shells and mortar, which forms a cement as solid as natural rock.

Sir Francis Drake, while roving the seas in quest of riches, in 1585, destroyed the town of St. Augustine, but was unable to demolish this monastery. Its age, quaintness of design, and historic interest, has of recent years lead to repairs, and to its preservation as a museum, where has been gathered relics of past centuries. The round tower and the walls of the lower story are intact, the latter being sustained by heavy buttresses. The frame work of the second story gives evidence of being more recent by a century; and some even more modern features appear, in windows and balconies.

A deputy of the Spanish government in 1590 came into possession of the building, which remained in the family until 1882, when it was sold to Dr. C. P. Carver, who more recently transferred it to J. H. Henderson, Esq., the present owner.

A feature of the house is a curiously designed door-knocker

of wrought iron, weighing twelve pounds, which was taken from the ducal palace of Ponce de Leon in Seville, Spain. Evidently, it was not intended that the inmates should yield too much to the sleepy influences of the Florida climate.

The furniture of the house is antique. Among the art treasures are an elaborately carved bedroom set of the time



The Oldest House in the United States at St. Augustine, Florida

of Louis XII, and a rosewood sideboard which was the property of Napoleon I. On the walls are paintings by the old masters once the property of the Spanish nobility. To these relics have been added a collection of ceramics representing all the rare colonial designs, including the Martha Washington plate, presented by La Fayette and other Frenchmen.

This building gives us the first and the last glimpse of a power which once possessed the continent. It is the irony of fate that just as every vestige of former empire is being wiped off the map of the new world discovered by Spain, we, her latest conquerors, should be carefully preserving relics of her earlier occupancy. We pay to a glorious past the reverence which even a recreant present cannot overcome.

There is still standing in Jamestown, on the Potomac, the bell-tower of a church erected by the first colonists of Virginia in 1610—three years only after the settlement of that place. The building was sixty feet in length by twenty-four feet in breadth, and constructed of brick. It had "a baptismal font, a tall pulpit, a chancel of red cedar, and in the tower two bells." The tower, which is still as firm as stone, stood over the vestibule, which had an arched entrance.

This first Protestant church in America was the type after which colonial churches were built for many generations, and after which they are still built in new settlements generally—the steeple, with a single bell, being substituted for the more costly and dignified tower. The portico was often omitted, puritanic plainness dispensing with whatever was unnecessary, or paucity of means rendering architectural effects impracticable. But churchbuilding for at least two centuries adhered to that early Christian type, which, as we have seen, was born in Rome, and was descended primarily from the Egyptian plan of temple-building. The Gothic graft which modified it fourteen hundred years later still continues to derive its sap from the ancient root.

Williamsburg, the old capital of Virginia, was the seat of the second church in this colony, and was founded in 1632. As befitted a church of England edifice, where royal gov-

ernors and other titled personages joined in the liturgy, and listened to mild discourses upon the divine right of kings, was a more costly building than its predecessor, as well as a larger one.

Families of ordinary mortals sat in large square pews, much at their ease, but the king's representatives and their families sat in the "royal gallery," a room of considerable size, which they entered and departed from by a private door, as did royalty itself in Old England. An American lady, a republican, is to-day supporting similar vice-regal customs in the Queen's possessions in the East Indies. "So runs the world away."

There are no detached columns in the Williamsburg church, which is still in a good state of preservation, but simulated square pillars support the cornice beneath the ceiling, which is decorated. There are tall arched windows, and a square altar-rail guards the sacred and spacious enclosure where stands the reading desk, and the actual gray marble baptismal font from which the Indian princess Pochahontas was baptised into civilization, and marriage with John Rolfe. The silver communion service was a gift of Queen Anne.

William and Mary College, built in 1693, and burned, was rebuilt in 1705, and may be taken as an example of college architecture in the latter part of the seventeenth century. Sir Christopher Wren had furnished the plan of the original building, which is now lost. That which succeeded it is a severely plain two-story structure, with a long frontage, and having many right-angled windows at equal distances apart. The roof is low, rather than high, and hipped at the ends. It has a portico, carried up to the roof, supported by arches, and supporting a pediment above the cornice. A small cupola or bell-tower rises from the center of the roof. Many similar college buildings have arisen all over the United States—all equally repellant to the artistic sense.

The house of the president of the college was built of brick made in England, of two colors, red and gray, used to present a checkered effect, a fashion which prevailed in the mother country two centuries ago.

A hundred years had brought to the colonies many of the architectural ideas prevailing or developing in England. These were not of the better sort, for art was again in a decline. Such as they were, they were modified and adapted to the climatic and other conditions in the new world.

The style of house most in favor with the Virginians was square, or nearly so, with a wide hall in the center extending through it, and large rooms opening on either side. A feature rarely omitted was the wide portico, with columns usually extending to the roof, and supporting a pediment. If the roof was low, it was hipped; if high, it had also dormer windows. Wings and supplementary buildings were added as required, but this was the central plan of the colonial "mansion house." The spacious hall had a grand staircase, sometimes spiral, sometimes with square landings to break the steep ascent, and with niches in the wall for statuary, or a place for the high-cased eight-day clock. The balustrade was high, and the posts supporting the rail often quaintly twisted or carved. If the house were large, the long hall might be divided by arches. In the immense rooms were fireplaces with decorated mantels of the hardest