

Garden near Harrison. Carpenter, brick, grading, plumbing, painting, plastering, mill, hardware, etc.; owner, F. H. Ingwersen; architect, M. J. Welsh; contractor, Henderlong Bros.; signed, May 31; filed, June 1; cost \$4,025.

Green and Buchanan. Plumbing on six houses; owner, E. A. Sanders; contractors, Cowap & Trumbull; signed, May 2; filed, May 12; cost \$1,085.

Hayes near Steiner. To build; owner, Bridget Mogles; contractor, John N. McLeod; signed, May 11; filed, May 11; cost \$4,510.

Harrison bet. 5th and 6th. To build, except painting; owner, Henry Besthorn; contractor, Henry Munster; signed, June 1; filed, June 5; cost \$4,575.

Harrison near 20th. Two-story frame; owner, J. J. Green; architect, A. J. Barnett; contractor, A. J. Ahern; signed, May 9; filed, May 9; cost \$2,700.

Hoffman near Alvarado. To build cottage; owner, Mary A. McComb; contractors, Rule Bros.; signed, May 17; filed, June 1; cost \$2,000.

Howard near 6th. Excavating, brick, carpenter, etc.; owner, Jos. F. Swift; architects, Martens & Coffey; contractor, John J. O'Brien; signed, May 13; filed, May 15; cost \$5,500.

Howard near 11th. Alterations to a two-story frame; owner, Jos. Herrscher; architect, C. Mau; contractor, W. J. Field; signed, May 6; filed, May 11; cost \$3,050.

Jones and Chestnut. Grading; owners, John and Clara Finley; contractor, J. J. Bauer; signed, Oct. 19, 1892; filed, June 3, 1893.

Kearney near Union. Two-story frame; owner, G. Filippelli; contractor, G. Butto; signed, May 23; filed, May 24; cost \$3,580.

Leavenworth near Lombard. Two-story frame; owner, J. J. Stofen; architect, Jas. H. Humphreys; contractor, N. R. Ellis; signed, May 24; filed, May 25; cost \$2,438.

Loft near Hayes. To build except plumbing and painting; owner, Adolph Newman; architects, John & Balczynski; contractor, F. V. Steinman; signed, June 8; filed, June 8; cost \$3,050.

Market near City Hall Ave. Two-story brick; owner, S. H. Seymour; architects, Shea & Shea; contractor, W. W. Ackerson; signed, May 31; filed, May 2; cost \$3,193.

Mason near Broadway. A frame building; owner, Mrs. Justl Capelli; architect, M. J. Lyon; contractor, Thos. Kinrad; signed, May 6; filed, May 10; cost \$8,100.

Mason near Eddy. Granite and sandstone work; owner, S. Silverberg; architects, Saffeld & Kohlberg; contractor, J. Sheedy; signed, May 11; filed, May 22; cost \$1,250.

Mason near Eddy. Plumbing and gas-fitting; contractors, Samuel Ickelheimer & Bro.; signed, May 11; filed, May 22; cost \$3,450.

Minna street, No. 147. Alterations and additions; owner, Patrick Connell; contractor, M. S. Yerxa; signed, May 19; filed, May 20; cost \$1,430.

Mission near Fair Ave. To build, except mantels, gas fixtures and painting; owner, Della Greenleaf; architect, E. A. Hermann; contractor, Henry Jacks; signed, June 8; filed, June 5; cost \$4,650.

Oak near Clayton. Two-story frame; owner, Mrs. J. D. Jennings; contractor, W. W. Redmill; signed, May 11; filed, May 12; cost \$3,742.

Octavia and Ellis. Grading, etc.; owner, Wm. Wolf; contractor, Jas. J. O'Conner; signed, May 18; filed, May 20; cost \$4,700.

O'Farrell near Webster. Three-story frame; owner, David Bernstein; architect, A. J. Barnett; contractors, Milron & Gardner; signed, May 11; filed, May 18; cost \$8,504.

O'Farrell and Grant Ave. Carpenter, marble and grille work, plastering, etc. for saloon and basement; owners, Calley & Roeder; architect, Chas. I. Havens; contractor, C. H. Green; signed, May 28; filed, May 28; cost \$1,855.

Page and Schrader. Plumbing, sewerage, etc.; owner, John W. Witt; architect, F. P. Robin; contractor, H. Williamson; signed, May 18; filed, May 23; cost \$1,074.

Page near Devisadero. To build; owner, Henry Mangels; architect, H. Geiffuss; contractor, F. Klatt; signed, May 9; filed, May 9; cost \$4,800.

Page near Steiner. Two-story frame; owner, D. Sullivan; architect, P. R. Schmidt; contractor, J. J. O'Brien; signed, May 9; filed, May 10; cost \$5,800.

Pleasant near Taylor. Three-story frame; owner, Annie Schurch; architect, Wm. H. Armitage; contractors, Gardner & Boyden; signed, May 20; filed, May 24; cost \$6,500.

Polk street, No. 1710-1712. Alterations and additions; owner, Jos. Podesta; architect, Oliver Everett; contractor, John Strand; signed, June 1; filed, June 2; cost \$900.

Post near Grant Ave. To alter elevator; owners, H. Liebes & Co.; architects, John & Balczynski; contractors, Cahill & Hall; signed, May 8; filed, May 15; cost \$3,525.

Railroad Homestead Association, lot 4 block B. To build; owners, E. J. and Mary McMullin; contractor, Jos. Morris; signed, May 15; filed, May 20; cost \$850.

Sacramento and Central Ave. Excavating, concrete and artificial stone work for a frame building; owner, John Trillary; architect, Wm. Mooser; contractor, H. M. Peterson; signed, May 22; filed, May 22; cost \$1,350.

Seventeenth and Valencia. Lathing and plastering; owner, Mission Parlor Building Association; architects, Shea & Shea; contractor, J. T. Mackey; signed, May 8; filed, May 22; cost \$1,215.

Shotwell near 19th. Painting; owner, Robt. R. Hind; architect, H. T. Bestor; contractor, Daniel Foley; signed, March 4; filed, May 11; cost \$925.

Shotwell and 19th. Plumbing; owner, Robt. R. Hind; architect, H. T. Bestor; contractor, D. J. Daley; signed, May 2; filed, May 14; cost \$2,050.

Spruce and Washington. Polishing and interior wood work; owner, O. D. Baldwin; architect, Samuel Newsom; contractor, P. N. Kuss; signed, April 19; filed, May 18; cost \$1,200.

Spruce and Washington. Plastering and cement work; contractors, D. Leahy & Bro.; signed, April 14; filed, May 18; cost \$1,040.

Stevenson near 20th. To build; owner, John T. Millbrick; architect, Edw. J. Vogel; contractor, Hugh Curran; signed, May 24; filed, May 25; cost \$2,770.

Sunny Side. One-story frame; owner, John Johnson; contractors, Peterson & Olson; signed, June 3; filed, June 3; cost \$1,120.

Sutter and Mason. Carpenter, tin roofing and galvanized iron work, etc.; owner, S. Wenbau; architects, Pissis & Moore; contractor, F. W. Kern; signed, April 27; filed, May 18; cost \$15,360.

Thirtieth near Noe. To build; owner, Mrs. B. Beck; contractor, O. E. White; signed, May 16; filed, May 19; cost \$1,200.

Twenty-first and Howard. A frame dwelling and stable; owner, C. A. Clinton; architect, W. J. Mathews; contractors, Garden & Boyden; signed, May 20; filed, May 24; cost \$8,575.

Twenty-third near Noe. To build; owner, Marietta I. Willats; contractor, J. A. McDonald; signed, May 13; filed, May 20; cost \$2,300.

Turk and Larkin. Galvanized iron, metal and tin work; owners, Luning Co.; contractor, Forrester Corrice Works; signed, April 26; filed, May 15; cost \$2,285.

Turk and Larkin. Plaster work; owners, Luning Co.; architects, Coxhead & Coxhead; contractor, Chas. Dunlap; signed, May 3; filed, May 15; cost \$3,000.

Turk and Larkin. Plumbing and sewerage; owners, Luning & Co.; contractors, Duffey Bros.; signed, April 24; filed, May 15; cost \$5,723.

Turk and Buchanan. Brick and carpenter work to four three-story frames; owner, H. F. Fortman; architects, John & Balczynski; contractor, J. H. Munster; signed, May 10; filed, May 11; cost \$25,678.

Turk and Buchanan. Plastering; owner, H. F. Fortman; architects, John & Balczynski; contractor, Arthur O'Brien; signed, May 10; filed, May 11; cost \$3,070.

Turk and Buchanan. Plumbing; owner, H. F. Fortman; architects, John & Balczynski; contractor, Wm. F. Wilson; signed, May 10; filed, May 11; cost \$3,300.

Union near Baker. To build; owner, Nicolas Silva; architect, J. B. Wuersch; contractors, The Home Building Co.; signed, May 10; filed, May 22; cost \$2,300.

Vallejo near Laguna. Two-story frame; owner, C. A. Marshutz; architect, J. E. Kraft; contractor, S. H. Kent; signed, May 23; filed, June 1; cost \$5,970.

Vallejo near Laguna. Plumbing and gas-fitting; owner, C. A. Marshutz; contractors, Duffey Bros.; signed, May 23; filed, June 1; cost \$4,200.

Vallejo near Polk. Carpenter, mill, etc.; owner, Earnst Lahgendorf; architects, Martens & Coffey; contractor, W. W. Ackerson; signed, May 9; filed, May 15; cost \$3,600.

Vermont near Yolo. To build; owner, Morris Wendt; architect, R. H. White; contractor, D. T. Pierce; signed, May 9; filed, May 15; cost \$4,938.

Vincent near Union. Two-story frame; owner, G. F. Ertola; contractor, Jean Ducasse; signed, May 24; filed, May 25; cost \$1,500.

Washington near Jones. To build; owner, Matilda Wolff; architects, Pissis & Moore; contractors, F. W. Kreling & Sons; signed, May 9; filed, May 10; cost \$12,900.

Washington bet. Lyon and Baker. A cottage; owner, Jas. Goveran; architect, Jos. P. Brady; contractor, John T. Hayes; signed, May 8; filed, May 10; cost \$1,825.

ALAMEDA COUNTY.

Brush near Thirteenth, Oakland. Two-story frame; owner, Albert Rowe; architect, W. Kirk; contractor, L. H. Long; signed, May 11; filed, May 12; cost \$7,245.

Caroline near Central Ave. To build; owner, F. Dohrman; contractors, Marcuse & Rimmel; signed, May 8; filed, May 12; cost \$2,700.

Caroline near Central Ave. To build; owner, J. C. Seigfried; contractors, Marcuse & Rimmel; signed, April 20; filed, April 20; cost \$3,950.

Fifth Assn. Tract, lot 9, block B, East Oakland. To build; owner, J. Williams; contractor, A. N. Frost; signed, April 17; filed, April 19; cost \$1,280.

Folsom and Tenth, Golden Gate Tract. To build; owner, John Chicon; architect, E. Depierre; contractor, T. A. Aymard; signed, April 24; filed, May 8; cost \$1,350.

Grove near Sycamore, Oakland. To build; owner, Mrs. R. Farley; architect, E. C. McManus; contractor, H. W. Schacker; signed, May 9; filed, May 10; cost \$1,500.

Haight Ave. Frame store; owner, P. C. L. Lawlor; contractor, A. R. Denke; signed, May 5; filed, May 9; cost \$1,545.

Howard Ave. near Oakland Ave., Oakland. To build; owner, J. F. Callahan; contractor, C. S. Whalin; signed, May 9; filed, May 9; cost \$1,300.

Moswood Tract, Oakland. To build; owners, C. H. and C. M. Dan Andker; contractor, K. Nelson; signed, May 10; filed, May 11; cost \$1,500.

Ninth near Harrison, Oakland. Two-story frame; owner, C. Terney; contractor, D. S. Brehant; signed, April 15; filed, April 17; cost \$6,050.

Pacific Ave. near Anglimbaugh. One-story cottage; owner, A. H. Wolf; contractor, A. R. Denke; signed, May 11; filed, May 11; cost \$1,250.

Paru near Alameda Ave. Remodeling; owner, A. Schmidt; architect, C. S. Shaner; contractor, A. W. Cornelius; signed, May 11; filed, May 12; cost \$2,165.

N. R. R. Ave near Walnut Ave. Three cottages; owner, Wm. J. A. M. Smith; contractors, Marcuse & Rimmel; signed, May 9; May 9; cost \$5,600.

San Pablo Ave. near 22d, Oakland. Two-story building; owner, J. M. Driscoll; architect, H. Burns; contractor, P. T. Nelson; signed, April 19; filed, April 31; cost \$4,752.

Tenth Ave. near Twentieth, Oakland. Two-story building; owner, W. H. Gregory; contractor, A. Burk; signed, April 3; filed, May 10; cost \$3,572.

Twelfth Ave. near 15th, Oakland. Seventeen-room cottage; owner, M. E. Bacon; signed, April 11; filed, April 17; cost \$3,200.

Washington near 11th, Oakland. Carpenter work; owner, F. W. Schultz; architect, C. Mau; contractors, Herbert & McLeod; signed, April 28; filed, April 28; cost \$11,637.

PLACERVILLE.

Masonic Temple and Building. To build; owner, Masonic Hall Assn.; architect, W. J. Cuthbertson; contractor, Beach & Co.; cost \$17,000.

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

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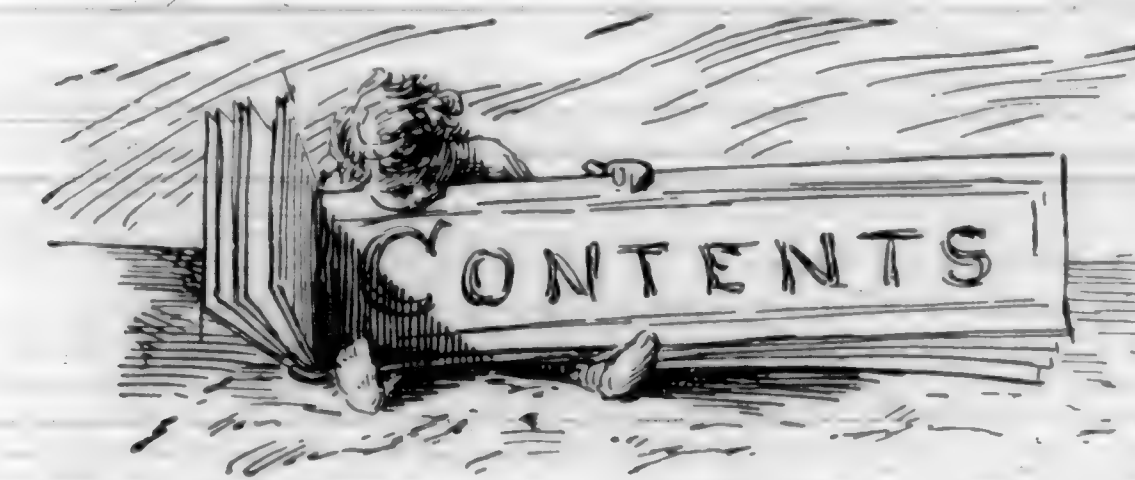
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5 Inch.....	7.50	20.00	37.50	65.00
6 Inch.....	9.00	24.00	45.00	78.00
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NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.



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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

THE project for the California Mid-Winter Exposition has taken definite shape, and if the enthusiasm of its originators can be imparted to the community of the State, the scheme bids fair to be a success. The time is short, however, and the work to be done immense, and if all difficulties are successfully overcome, great credit will be due the promoters of the enterprise, and undoubtedly much permanent good will result to this State and city.

IN another part of our paper will be found a detailed account of the excuse of an accident at the old Ford's Theatre at Washington by which so many lives were lost.

The lesson which has been so dearly taught ought to have presented itself to the common sense of the United States without such an experience. Professional men are well aware of the necessity of employing only well educated and experienced men on any construction—but the public are not so, so it seems necessary that some such event (it is a misnomer to call it an accident) as that before us should take place to call the attention of the public to these facts.

A competent architect or engineer should always be placed to superintend all works, no matter how apparently trivial they may be, that are undertaken by the government.

This occurrence emphasizes the absolute necessity of having a body of men as architects who are thoroughly equipped in their profession—men who are compelled to pass an examination as are doctors and lawyers before they are admitted to practice. The Architectural profession involves more serious risks to life, health, happiness and general welfare, much more fold, than either of the other mentioned professions; and yet it is left to be recruited in a haphazard fashion from anyone who has the presumption to suppose he is fitted for it and is allowed to experiment on the health and life of the community.

ABUSES IN ELECTRIC WIRING.

BY GEO. P. LOW.

WHERE recently appeared in these columns an article upon the wiring of buildings for incandescent lights, in which was pointed out the utter helplessness of the layman in securing the conformity by wiring concerns in specifications for electric work and particularly was it indicated that the placing of an installation at three per cent drop in potential instead of at the two per cent loss so generally specified, will frequently net the electrical contractor hundreds of dollars saved in copper yet generally neither owner or architect will be able to detect the fraud. So completely has the universal ignorance in reference to the technical details of electric work placed the public at the mercy of a trade that is all but demoralized by irresponsible competition that property owners have in this "drop in potential" matter alone, paid thousands and thousands of dollars to wiremen for material contracted for yet which was never furnished. Nor in many instances, did the electrician intend to furnish this material when he contracted to do so. To the shame of the trade—for the just suffer with the unjust—it is a fact that of the truth of these statements there is not the slightest doubt.

Another fraud, equally flagrant with that described and which is closely akin to it, yet which, owing to the ease of detection, is not practiced so freely as it has been, consists in the substitution of a cheap and inferior grade wire for the high grade insulation that must always be used in concealed work. In localities not under the constant vigilance of an underwriters' inspector and where consequently, electrical matters all but take care of themselves, it becomes the simplest thing in the world to wire all circuits located in concealed and inaccessible places with an inferior wire and to splice on to the ends an approved insulation at all points where the wire is exposed to sight. Every experienced electrician—if he will—can cite instances in which this *felony* has been practiced. The word *felony* is used advisedly. If an electrician deceives an architect and defrauds an owner into paying for goods he did not deliver and never intended to deliver, it is a crime, but if he wilfully carries the fraud to the extent that the property is endangered, that it may be burned from the wretched work and lives may be lost thereby, then the act is of that enormity that it should be treated as a felony. No one knows better than the insurance inspector that buildings have been so wired and that should he relax his vigilance, others would be so wired again.

Property owners suffer further great loss from the fact that sufficient judgment is not exercised in determining the proper voltage for which a building should be wired. Here again as in "drop," it is impossible to lay down a general rule that can be followed even for roughly approximate results. It may be stated however that except in buildings containing isolated plants, the voltage is determined from the nature of the plant or central station that is to supply the current. Should it be desired, the building may be so wired that the wiring may be occupied by any commercial low potential system of lighting, or to go still further, any building may be so wired that its circuits can be occupied by any incandescent system, whether for series or multiple lighting, but the last named scheme would be unnecessary, ordinarily.

The usual systems for which a building may be wired are known as the 50-volt, 100-volt, 110-volt and the three-wire,

or 220-volt systems. As to the hazard presented by these systems they are about equally safe, and as far as the public is concerned they may be considered as merely different methods of distributing electric energy for commercial purposes. In the end they each accomplish the same thing, that is, by means of each, about 50 watts of electric energy is delivered to each 16 candle power lamp. But 50 watts may be 50 volts and one ampere, or 100 volts and one-half an ampere or 200 volts and one-quarter of an ampere, for the energy of a current of electricity is expressed in watts, which are derived in the product of the volts and the amperes that constitute that current. All 16 candle power lamps require about 50 watts to burn them, but these 50 watts may be variously derived as above stated, hence the voltage for which a building should be wired depends upon the voltage of the source of supply and upon the lamps to be used. Since lamp makers now furnish lamps of all voltages, the second consideration is immaterial. Clearly then the lower the voltage the higher the ampereage and as ampereage—not voltage—is the factor of electric energy that requires cross-section in the wire along which it travels, it is equally clear that the lower the voltage used, the greater must be the size of the wire run.

The point of greatest importance in determining the proper voltage is to derive the system that will meet all contingents and yet cost the least, for as will be shown, a vast difference exists in the amount of copper wire used by the various systems—and copper costs nearly 20 cents a pound.

In the accompanying table appear the ratios existing between the amount of copper used to effect any installation. In each instance, under the various voltages given, the results will be the same, each lamp will get the same amount of energy, the length of circuit is equal and the drop in potential is the same, yet it is plain from the table that for 50-volt work the amount of copper required will be 4 times that used in 100-volt work, 4.58 times that used in 110 volt work and 12.98 times that used in the three-wire system. Inversely the copper required if the installation was wired on the three-wire system, would be .077 of that used if the wiring was for 50-volts, .310 if 100-volts, and .375 if 110-volts.

RATIOS.

VOLTAGE	50 VOLTS	100 VOLTS	110 VOLTS	220 VOLTS
50	1.	4.	4.58	12.98
100	.250	1.	1.21	3.22
110	.218	.826	1.	2.66
220	.077	.310	.375	1.

It must be borne in mind that these figures are theoretical. They, however, hold strictly good in practice except in the smaller sizes of wires where the fire underwriters' requirements prohibit the use of wire smaller than number 14, B and S Gauge. The ratios which the smaller wires bear to the large ones vary very materially in each installation but it is entirely safe to say that the amount of wire uselessly placed can be measured only in tons. The writer has in mind one large western building in which nearly \$18,000 was thrown away absolutely, by reason of ignorance in selecting the proper voltage. Again as local electrical situations develop practices are becoming more uniform, and while only a year or two ago, owners were justified in wiring for 50-volts, at the present time the necessity for so doing is fast disappearing, particularly in large cities. Despite this many small and comparatively inexperienced electric wiring

concerns still maintain that the only safe course is to wire for 50-volts. Frequently it is true, but by far more frequently is it true that precisely the same results would be attained with the expenditure of from one-fourth to one-thirteenth of the weight of copper necessary to install 50-volt wiring.



To the Editor of the California Architect.

FROM the most remote period of antiquity the tower has been a distinguishing feature of architectural composition. The towers most conspicuous in history, have been located on elevated ground, either natural or artificial, presenting a wide and firm foundation. The tower may be taken as a typical illustration of the sentiments and feelings of mankind. Man has a sense of ambition and a desire to rise above his fellows, so also should the tower rise to a towering height above all surrounding objects. Burke says in his essay on the "Sublime and Beautiful" that "astonishment is that state of the soul in which all its motions are suspended with some degree of horror." This sentence describes our feelings upon seeing an illustration in a morning paper of the proposed design for the buildings and grounds intended for the Mid-Winter Fair, bearing the name of Leon Bonet. It seems to me that no architect would make such a burlesque as that shown.

Upon an examination of the proposed design it appears that the central portion of the space is to be excavated and leveled off, and the outer portions of the plot to be raised, and the buildings erected thereon. As appears by the published design, the buildings will be about fifty feet in height and the terrace will descend about one hundred feet to the level of the central portion. A tower is shown standing in this lower portion; by itself, and if erected upon elevated ground, this tower would make a creditable appearance, but when placed as shown in the design is suggestive of many things. The lowest section might be used as a crematorium, or else for the reception of a power house and electric plant, and the column above as a light beacon, but for the fact that it is too low, and the light would be confined to the inclosure. It might be intended as a monument, but the effect would be insignificant, if a person had to climb a hundred feet to get a full view of it; monuments are not generally inspiring when looked down upon; possibly some of our former enterprising citizens may take that view of the subject. If it was intended for use as a smokestack the situation is also unfortunate, as the wind sweeping over the surrounding buildings would be apt to cause a down draft. Many other possible purposes might be mentioned if space permitted.

In all seriousness is this design to be typical of the whole scheme?

Yours truly,

CRITIC.

FIFTH ANNUAL COMPETITION FOR THE ROBERT CLARKE TESTIMONIAL.

UNDER THE AUSPICES OF THE CHICAGO ARCHITECTURAL SKETCH CLUB OF CHICAGO.

CONDITIONS—The author of each design must execute all drawings without assistance, and non-adherence to these

conditions will cause the rejection of the design or designs in question.

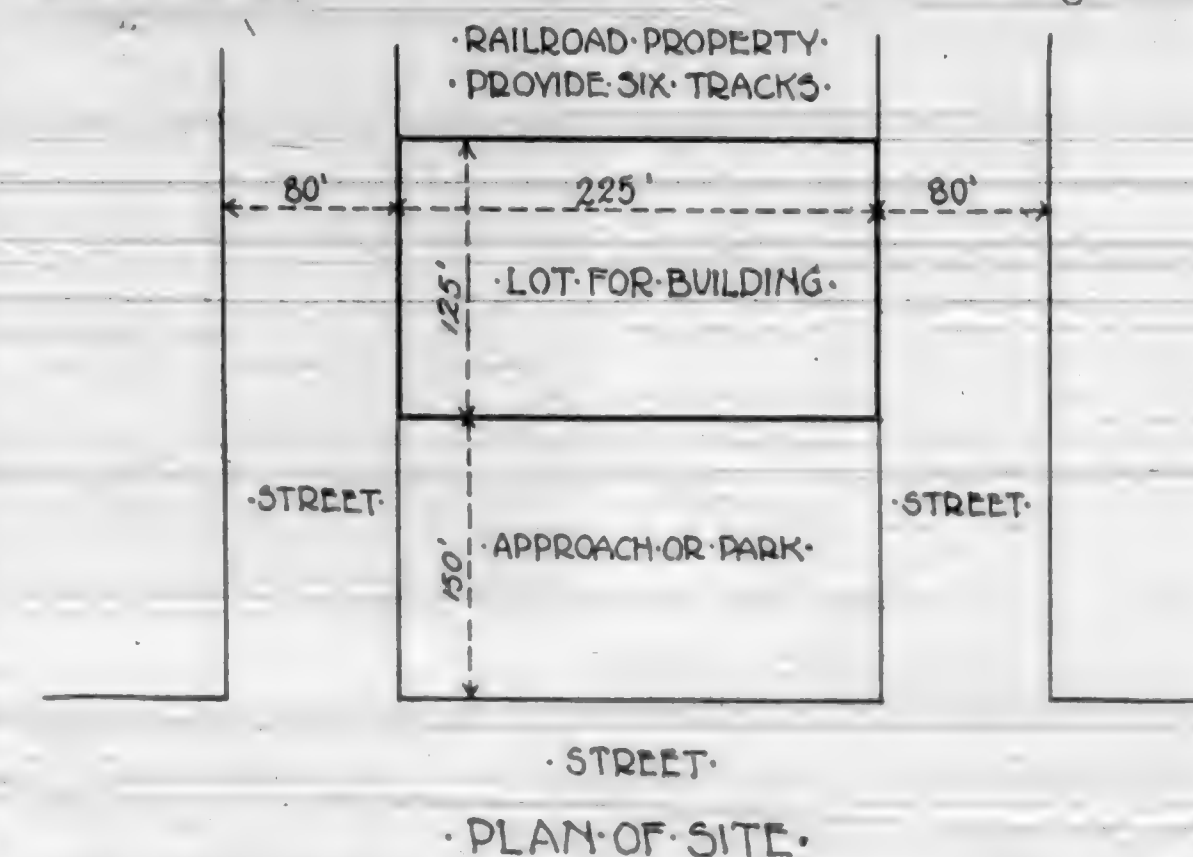
The competition is open to architectural draughtsmen under thirty years of age, residents of the United States and not practicing architects.

The awards will be made by the Adjudicating Committee on the "Robert Clarke Testimonial" competition, and are:

FIRST PRIZE GOLD MEDAL.
SECOND PRIZE SILVER MEDAL.
THIRD PRIZE BRONZE MEDAL.

The prize drawings are to become the property of the Chicago Architectural Sketch Club.

PROGRAMME—A design for an elevated railroad terminal station for suburban traffic, in business centers of large cities.



The building is to have three general stories, the first or ground floor to contain a lobby, stairways, offices and all necessary conveniences.

The second floor is to be on a level with the platform and to contain one general waiting room, one waiting room for women and one for men, toilet rooms, ticket office, depot master's office and necessary stairway to reach the Railroad Co's offices on the third floor.

The building can be smaller than the lot outlined on the accompanying diagram, and the space in front is to be used as an approach or park.

The drawings are to consist of the following, their arrangement and the number of sheets being left to the discretion of the competitor:

First or ground floor plan, second floor plan, front and side elevations, transverse or longitudinal section, perspective and block plan. Size of sheets to be 22x28 inches.

Plans, elevations and section to be drawn to a scale of 1-16 of an inch to a foot, pen and India ink rendering. The perspective to be drawn from an 1-8 scale plan, rendering optional.

The drawings are to be marked with a motto or *nom de plume*, and accompanied by a sealed envelope marked in the same manner, containing the name and full address of the author, with the place and date of birth, and must be delivered flat to HUGH M. G. GARDEN, Secretary, Chicago Architectural Sketch Club, at the Club Rooms, 913 Masonic Temple Building, Chicago, on or before Monday, October 2, 1893. Charges to be prepaid. All drawings other than those receiving prizes will be returned at the expense of the contributor.

The Adjudicating Committee on the Robert Clarke Testimonial:

W. L. B. Jenny, Chairman.
Samuel A. Treat.
Chas. A. Coolidge.
D. H. Burnham.
Lorado Taft.

CALIFORNIA SLATE.

VERY few people, unless it be the architects, are aware that located in our "fair State" is one of the largest deposits of slate in the world. Its quality is second to none being a beautiful dark steel blue in color, tough and easily worked; it improves by exposure, and will not change color. In fact a true slate in every sense.

A better idea may be obtained of the magnitude of this slate deposit when one considers that the ledge is over 2000 feet wide, 1600 feet high from the bed of the American River—very likely as deep below the bed, with a length of two miles. A great mass, indeed, of fine material, good for all purposes where slate can be used.

This deposit is situated in El Dorado County, about two miles from the city of Placerville, on the American River, at the bridge on the road leading to Georgetown. This deposit has been opened and worked in a small way for the past six years. Recently a company was incorporated who purchased the deposit, and has erected an improved plant of machinery for quarrying and manufacturing the material



PLATE NO. 1.

shown is known as a Channeler, which cuts the slate into solid blocks 6x8 feet. This machine is run by compressed air forced up from the machinery or compressor rooms in pipes, a distance of 500 feet to the quarry. From the Channeling machine the blocks are conducted on a tramway to where

they are split into slabs. These slabs are then placed under the saw, which is made of wire 1400 feet in length, running over numerous sheaves and passes over the slate slabs to be cut, the wire being held down by an automatic appliance on the slate. During the passage of the saw, sand and water are dropped on the part to be cut. Thus the slabs are cut to any desired size. From the saw the slate is conducted on an inclined railway to the splitting sheds, is there split and trimmed ready for shipment. Slabs for billiard tables, tiles, and other purposes are cut to size in the same way, by the wire saw and sand. The sand used in cutting, is what is known as "Quartz Sand," and is at hand in great quantities. From the fact of its not having travelled but a short distance, the cutting edges are fully preserved. It is remarkable to note how fast the wire will pass through the slabs of slate.

The parties who first opened these quarries worked them by the old process of blasting with powder, and handling it by the system carried on in Wales for the past hundred years, destroying thousands of

tons of the finest material through the action of powder. But by means of the machinery erected by the new company, almost all of the slate taken from the quarry is saved, and turned into a ready market.

The accompanying illustrations give one only a partial



PLATE NO. 2.

into roofing slate, slabs, etc. It is now in full operation, turning out several thousand squares of roofing slate each month, besides slabs and tiling in large quantities.

The accompanying plate No. 1 shows the largest of the quarries, there being two in operation. The machine

idea of these quarries. Plate No. 2 shows the quarry as it appeared when worked under the old system. Men may be seen in the act of drilling holes by hand in the slate to take the blast. Plate No. 3 shows the vast dumps of waste slate. These dumps are made up of the finest material broken into pieces, and almost worthless by blasting. But with such a



PLATE NO. 3.

mountain of slate the former owners of the quarries gave no thought to the material wasted. After a blast they selected the largest blocks or slabs, and the rest was consigned to the dump. Plate No. 4 shows the Channeling machine and one of the benches started by the new owners. This is in the largest quarry, which is an opening in the face of the hill, 250 feet in height, and over 400 feet in width. By the use of the machine, the quarry will present a series of steps or benches from bottom to top, six feet each in height.

It would be hard to estimate the value of this immense deposit. In Wales and the eastern states thousands of men are employed in the slate industry, some of the quarries in Wales employing from three to four thousand men each. Let us hope that ere long we may see as many employed in the slate quarries of El Dorado county.

Surveys and estimates have been made for an overhead rope-way to be erected by the new owners, to transport the slate to the railroad at Placerville, a distance of about two miles.

THE MINISTER—"Do you ever think of a higher life, Miss Emma?"

MISS EMMA—"No! papa is so much afraid of fire we always take the first flat."—*New York Herald.*

THE WESTINGHOUSE ELECTRIC COMPANY'S PROPOSED WORKS AT BRINTON, PA.

THE plans for the Westinghouse Electric Company's new plant at Brinton are nearly ready, says the *Electrical Review*. Of the 222 acres owned by the company, 23 will be covered by the works. The machine shop will cover a space of 750 feet by 250 feet; the warehouse 750 feet by 25 feet; the foundry 700 feet by 250 feet; and the boiler house 150 feet by 40 feet. Including other buildings, the area of the ground floors will be 7 3/4 acres, and including the second floors, 15 acres. The structure will be fire-proof stone and steel on the latest methods, and labor-saving devices will be employed to the fullest extent. Electricity as a motive power for labor-saving machinery will be utilized. It is estimated that the saving from the consolidation of the plants

will not be less than \$250,000 a year. Two hundred houses for the employees will be built at once.

MR. EDISON'S FUTURE WORK.

WHAT tireless inventor, Mr. Thomas A. Edison, has been again heard from as regards the problems he has under-

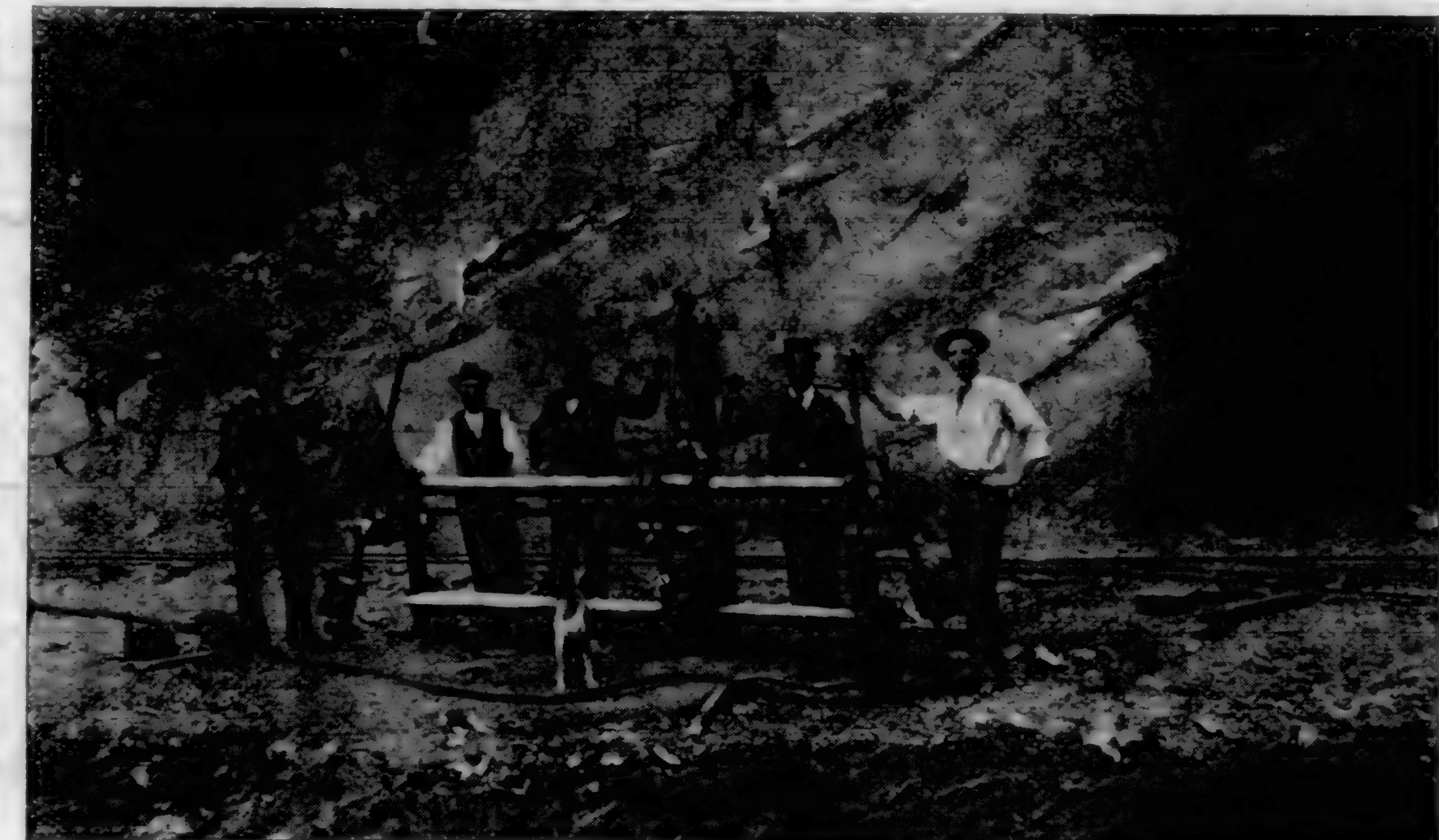


PLATE NO. 4.

taken to solve. He has not, by any means, given up his idea of devising ways and means of obtaining the energy of coal in a manner more direct than the present wasteful methods, and he promises to soon resume experiments along this line. He has had enough of the machinations of Wall street, however, and what he does hereafter, will be through his own enterprise entirely. He proposes to control all his future inventions himself, without the aid of Wall street.—*Electrical Age.*



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.

THE Tower for the New City Hall, is by architect Frank T. Shea.

THE Kern County Land Co's Building at Bakersfield is by Henry A. Schulze, architect.

A residence for Mr. Wm. T. Garrett in Alameda, is by architect Fuller Claffin.

ACCIDENT IN THE BUILDING OF RECORD AND PENSION DIVISION, WAR DEPARTMENT, OLD FORD'S THEATRE, WASHINGTON.

LACK OF INTELLIGENT SUPERVISION OF UNDERPINNING.

FORD'S old theatre situated on Tenth street between E and F streets was erected by John T. Ford in 1857. Mr. James Gifford was the architect. After Lincoln's assassination the Government took possession of the building and arranged the interior for the Army Medical Museum. The back wall was, and is, considerably out of plumb. The interior, with probably the exception of the roof, was replaced, the floor being supported on cast-iron columns carrying iron beams with four-inch brick arches sprung between them. The back wall, which was out of plumb was strengthened by the addition of an interior wall and anchors tying the wall to the system of interior beams.

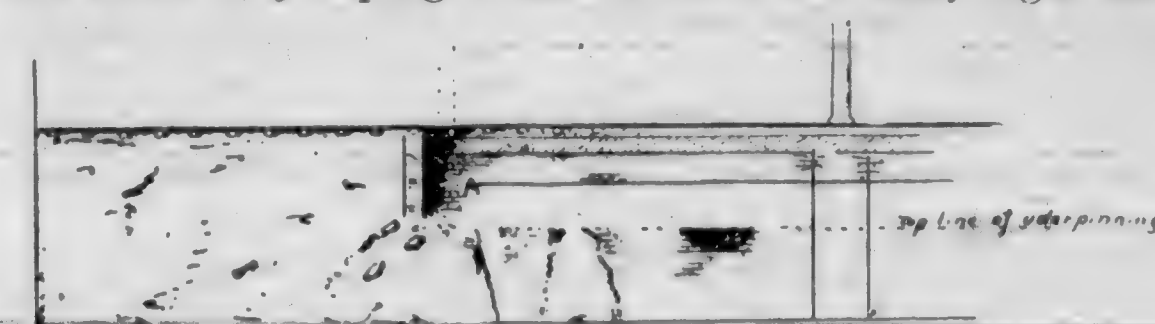
The first floor rests on a series of arches sprung from dwarf walls two feet eight inches high from footing to spring line. These arches began about twenty feet from the front wall; the floor on the intervening space rests on sleepers laid in an indifferent bed of concrete.

A small cellar was arranged in the back of the building in which the heating apparatus was located.

For several weeks workmen have been excavating a passageway from the front to the rear of the building. The central archway had been selected for this purpose. The dirt for this passage was removed, and the dwarf walls were underpinned for a height of about four feet. Curious as it may seem, they had practically completed the underpinning, having finished all the piers on which the columns rested except one, this one as an excavation was made beneath it, gave way, letting down the column marked *A*, pulling over the column marked *B* and precipitating the beams and brick arches which rested upon them on both the second and third floor to the first floor. The portion of the first floor which rested on 3' x 4' sleepers was carried into the excavation. The brick arch over the passageway did not fall. The roof, fortunately, was independent of the system of columns, reaching from wall to wall.

The clerks working on the different floors fell with the falling iron, brick, timber and desks, as there was no warn-

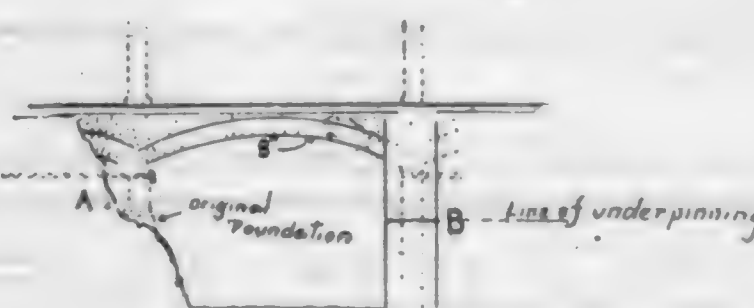
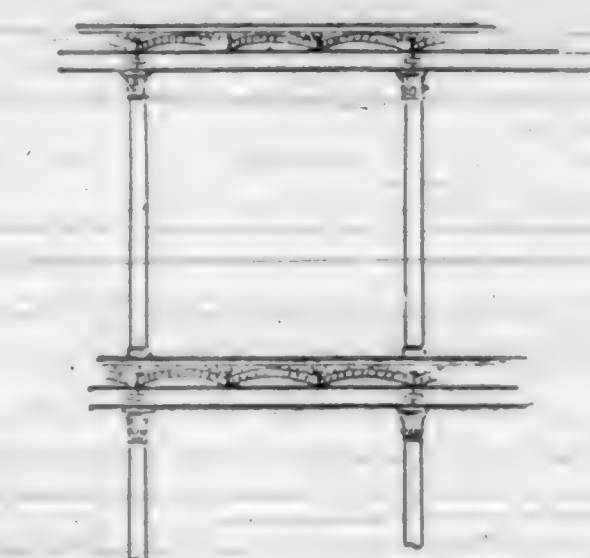
ing. Nineteen were killed by the fall, one who was safe, was killed by jumping from a window and sixty-eight were



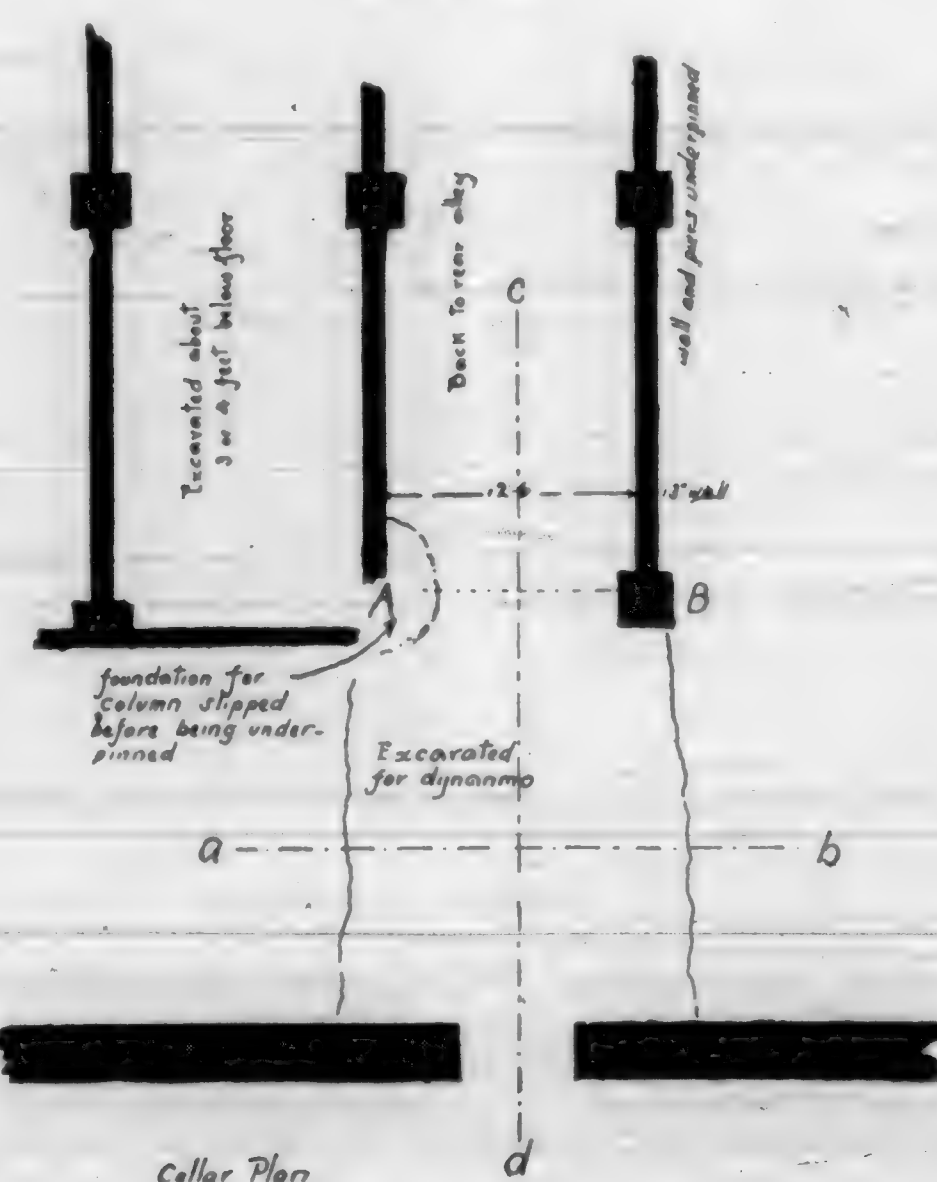
Section c-d

injured, three having died from their injuries. Twenty workmen were under the archway. The bricklayer, who was preparing to underpin the pier which gave way, feeling dirt fall on his neck, stepped back (out of harm's way) to brush it from his neck just as the crash came.

This accident has brought to light customs of the War Department, which if practised by an individual or a corporation would not only be considered criminal but would render them liable to prosecution and conviction for manslaughter. It seems that in work of this character, where the lives of many people are at stake, it does not employ proper expert supervision, and further, that it does not even get expert advice as to the proper methods of conducting such an important undertaking as underpinning a series of piers on which rested columns supporting two stories of brick and iron floors, 13x20 square feet, loaded with men, desks and papers. The methods adopted in carrying on this work show an entire lack of comprehension of the matter in

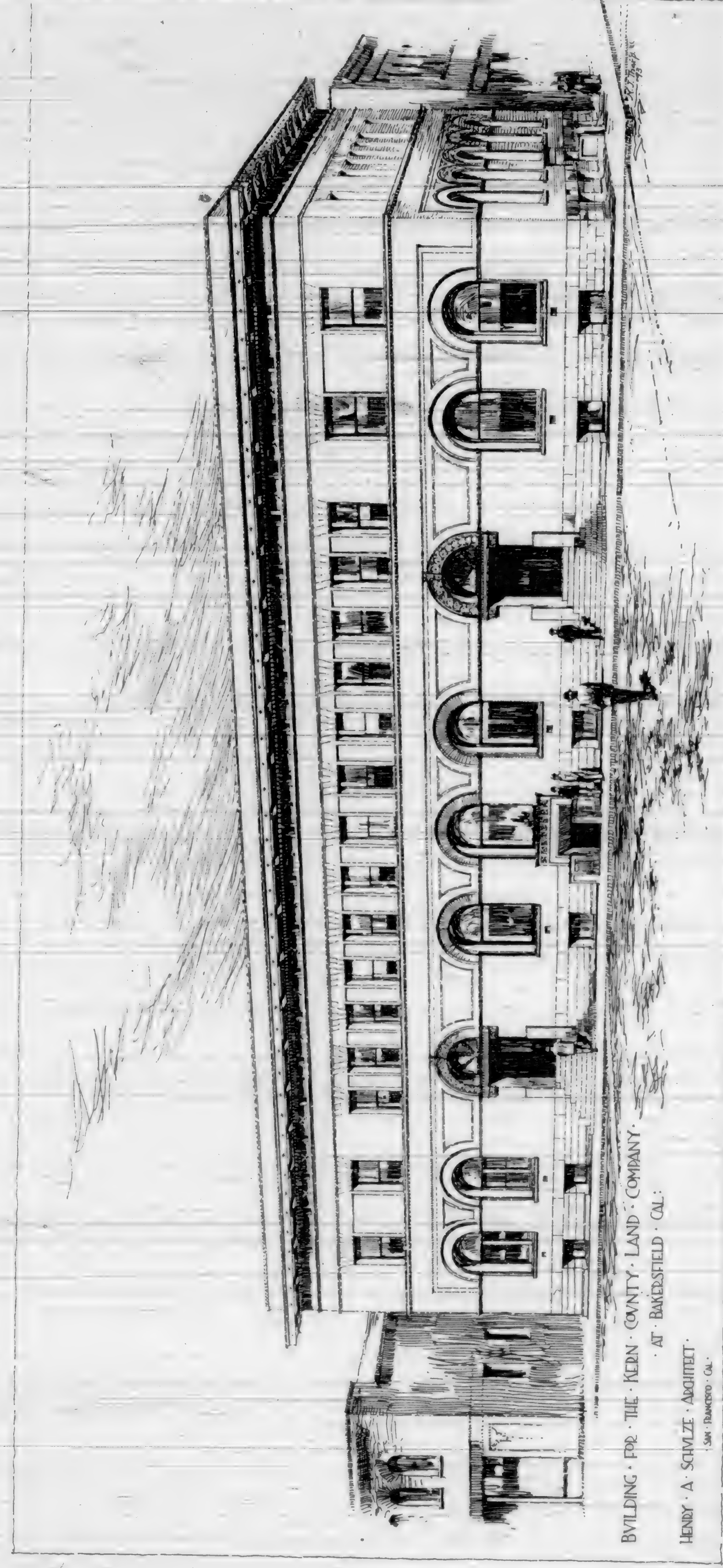


Section a-b



Cellar Plan





BUILDING FOR THE KERN COUNTY LAND COMPANY
AT BAKERSFIELD, CAL.
HENRY A. SCHULZE, ARCHITECT
SAN FRANCISCO, CAL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

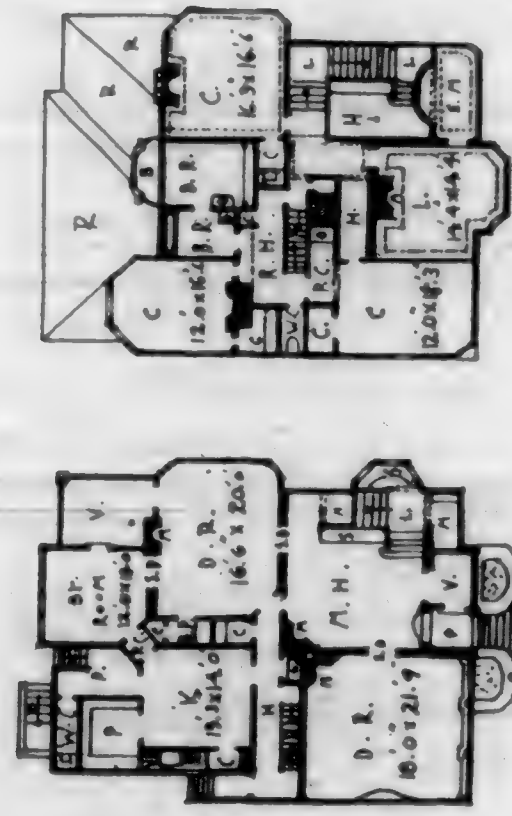
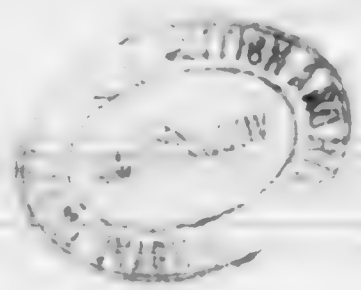
VOL. XIV NO. 7 JULY 1893.



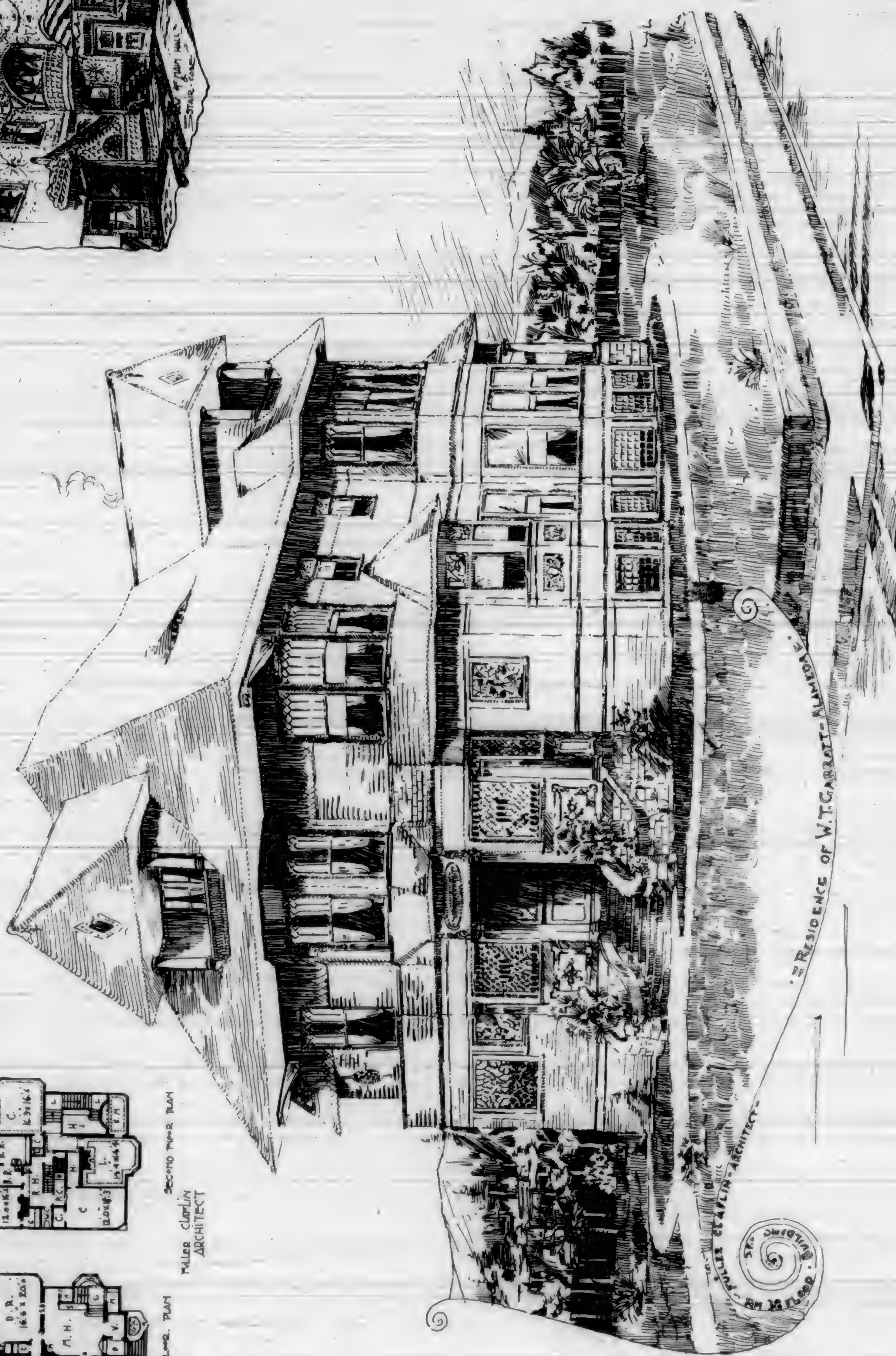
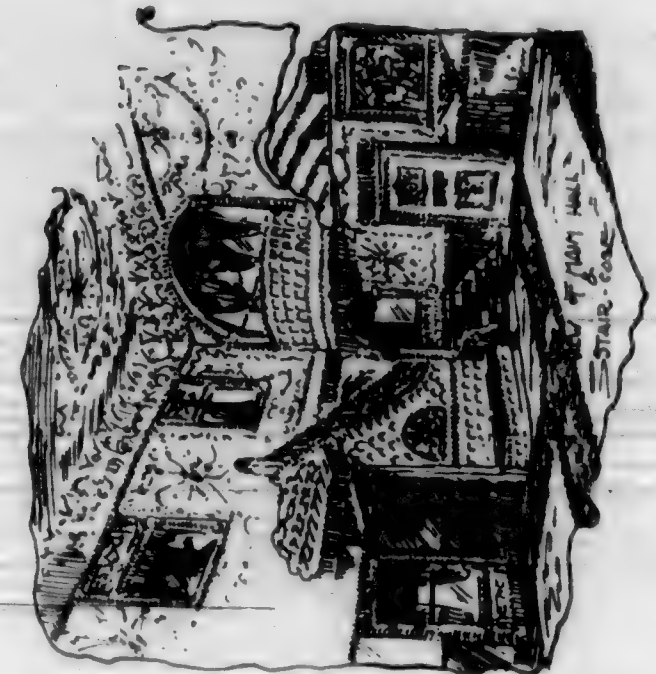
ACCEPTED DESIGN FOR
THE COMPLETION OF THE
NEW CITY HALL S.F. CALIF
ARCHITECT : FRANK T. SHEA :

COMMISSIONERS
L. R. ELLERT
WM. BRODERICK
HARRY T. CRESWELL





FIRST FLOOR PLAN
SECOND FLOOR PLAN
T. H. CLAY, ARCHT.
SAN FRANCISCO





MISSION OF SAN ANTONIO DE PADUA; FOUNDED JULY 14, 1771.



SAN BUENAVENTURA MISSION.



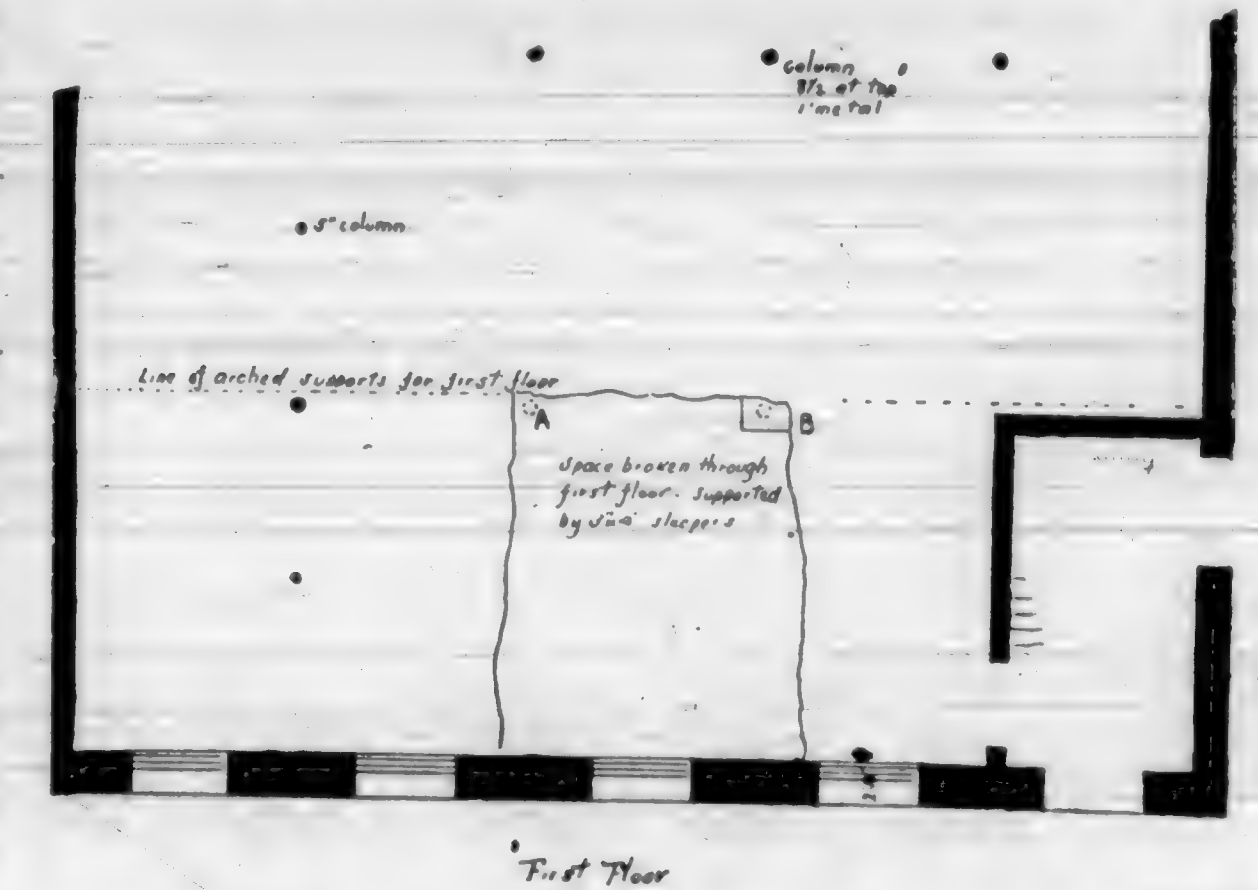
MISSION OF SAN ANTONIO DE PADUA; FOUNDED JULY 14, 1771.



SAN BUENAVENTURA MISSION.

hand. Each pier had, at a low estimate, 51,000 pounds resting on it when the earth was taken from beneath, leaving a bond of about three feet of brickwork to support this great weight above. Curiously, this method was successful until they came to the last column. This pier had a wall bonding into it only on one side, hence they were depending on the strength of a brick corbel with only the counterbalancing weight of three feet in height to support 51,000 pounds. They (we might say miraculously) accomplished this feat at B, but at A, the last pier, what might have been considered inevitable, happened. The brick corbelling and the little support which was obtained from the earth, a mixture of sandy clay, gave way and the columns and superstructure which they supported collapsed. It does not seem to have occurred to the contractor or any of his supervisors to have shored up the story above. The ease and slight cost of such shoring the cross-beams by temporary support one would think would have commended itself to the most obtuse as well as the most penurious person, whether it was a Department Chief or a contractor. It appears from the assertions of those who made estimates on the job, that no specifications, drawings, or directions were given for the work. The party in charge of the building said that no specifications were needed, all they wanted was that the dirt should be dug from beneath the walls, and the space bricked-up. That was the quality of expert direction as to how the work should be done. The supervision consisted in Colonel Ains-

mon way of letting-out contracts for the War Department, and the Supply Division or Quartermaster's Department which has charge, of course, know little if anything about how the work should be done, hence they depend on the contractors. This is a sorry confession from the Department which has the whole Engineer Corps of the United States Army at its

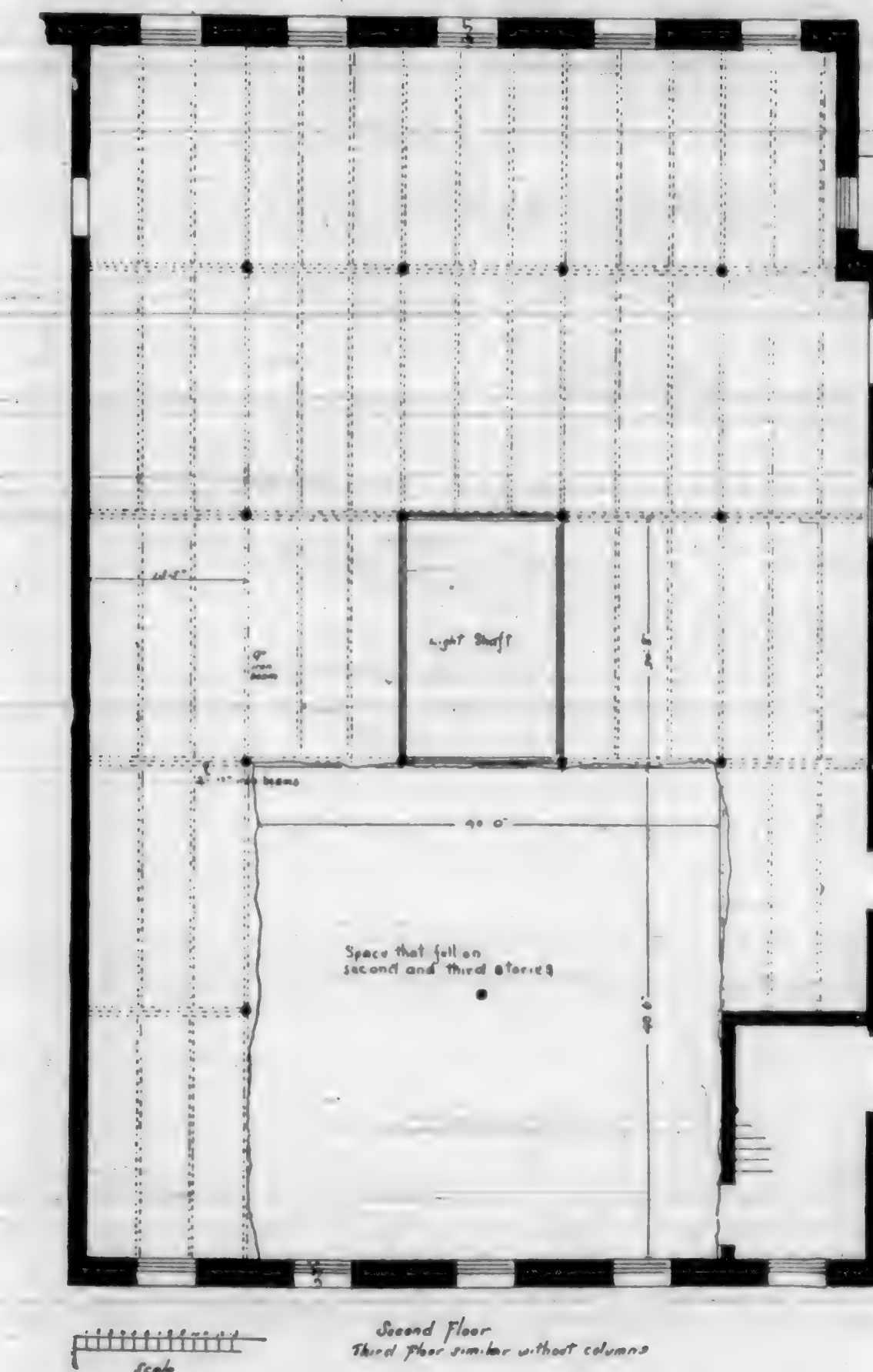


command. To what better use could the engineers be put in times of peace than computing the weights and size of shores to resist them, and specifying the necessary precautions that should be taken in such cases as this? It seems as though such trifling affairs are not worthy the attention of even a lieutenant in the Engineer Corps.

It is a serious question to decide which party is the most to blame, the contractor, Dant, who should at least have known a little about relieving the piers from the weight above underpinning them, or the army officer, Dr. Ainsworth, who should have obtained expert advice and supervision.

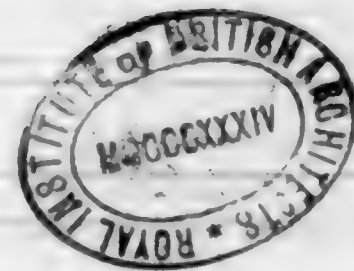
The coroner's inquest and the Board of Inquiry, consisting of General Casey, General Batchelder and Major N. Davis, will investigate and probably place the responsibility where it properly belongs. Several questions have arisen in reference to this accident. The building has been condemned by reports of the Surgeon-General Barnes, in 1881, and Representative Shellabarger, in 1883. These reports have naturally been talked over and magnified by the clerks. They seem to bear principally upon the bad light, lack of ventilation and the first floor having no cellar, so it was not considered healthful; and further, that the roof was not fire-proof and the valuable collections of the Medical Museum were, therefore, in an unsafe building. The walls seem to be strong. The floor beams are lighter than would be used in ordinary practice, being 9" for a span of a little over twenty feet. Beams about four feet four inches on centres. This would be safe, but would give more deflection than would be considered agreeable. The collapse evidently did not occur from the condition of the building, as many suppose. The daily papers and the clerks make quite a point of the floor (which was temporarily supported by the sleepers and roped off while the excavation was going on) shaking when walked upon, but of course this had no bearing upon the accident. It was simply carelessness in preparation for doing and supervising the excavating and underpinning of the new work that was the immediate cause of the failure.

The accident also brings forward prominently the notoriously unhealthy and reported unsafe condition of the Government Printing-office as well as other make-shift buildings which the Government occupies in this city, and again calls attention to the fact that many such buildings are overloaded, and an entire lack of knowledge as to what the floors were intended to carry. All such buildings should have their capacity computed and posted on every floor, as the documents and other matter which the Government stores away, increasing daily, are a menace to the stability of the buildings and the life of their occupants.—*The American Architect and Building News.*



worth (medical Colonel), Chief of Division, the man who attends the boiler (dubbed engineer) and the contractor for the brickwork examining the work daily and asserting that everything was all right. Dr. Ainsworth and Captain Thorpe, who let-out the contract, assert that this is a com-

The contractor making the above statement declined to bid, and hence, presumably, the crude specification and drawings (which I have seen since writing the letter) which are stated to have been prepared, "not by a regular architect or builder," but by a "steam engineer"; i.e., the man who attended to the boiler for the heating-apparatus. The estimates and contract were made on such an indifferent basis as this.



NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
 GEO. H. SANDERS, Pres. W. J. CUTLER, Vice-Pres.
 OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
 C. E. GRUNSKY, Pres. CHARLES D. MARX, Vice-Pres.
 OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
 GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
 MAX CASPARI, Sec. H. T. BESTOR, Treas.

A special meeting of the members of the San Francisco Chapter A. I. A. was held July 7th in reference to the buildings for the proposed Mid-Winter Exposition viewed from an architectural standpoint.

It was the general opinion that the best results could be obtained by following the method so successful in producing suitable designs for good execution at the World's Fair at Chicago, viz: by appointing a supervising architect for the entire work, and an individual architect for each building—a committee was appointed to present to the Executive Committee of the Mid-Winter Exposition resolutions embodying these suggestions.

The regular monthly meeting of the Chapter, held on the evening of the 14th, approved the action taken by the members at the special meeting. A committee consisting of Messrs. Bestor,

Curtis and Kollofrath was appointed to consider the advisability of holding an architectural exhibit in connection with the Mid-Winter Fair and report at next meeting. An amendment to the By-Laws was proposed to be voted on at next meeting.



We have received from the author James R. Willett, Esq., a copy of his address on HEATING AND VENTILATION OF RESIDENCES, delivered to the Engineering Society of the University of Illinois, March 23, 1893, confining himself to its practical application in order to show the way in which a person engaged in such business may prepare designs for excavation. It cannot fail of being useful to the class for whom intended, as well as of interest to the general reader.

The first number of a monthly journal called "ORNAMENTAL IRON," devoted to industrial art, has just been received, certainly the publishers have reason to congratulate themselves upon having produced a gem. The illustrations are truly works of art applied to every day use.

Published by The Winslow Bros. Co., office 761 Rooking, Chicago, Ill. Subscription price per year \$2.00.

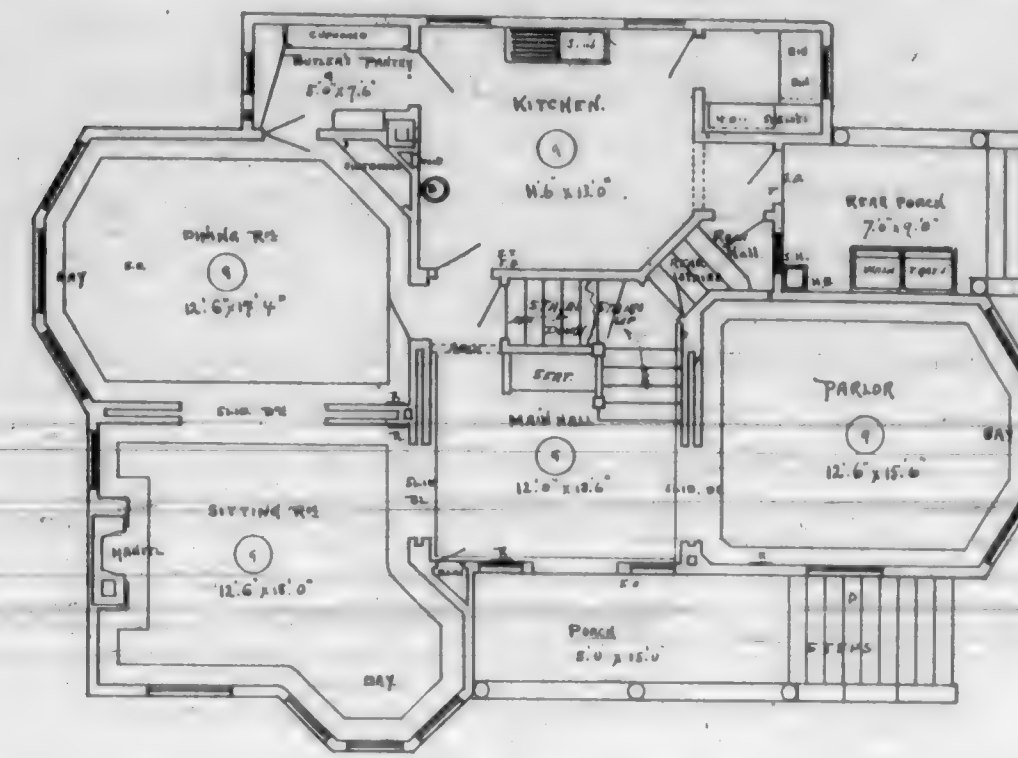
The circular of the SCHOOL OF ARCHITECTURE of the University of Pennsylvania, just received, is a very attractive four-page leaflet, in two colors, describing in brief and comprehensive form the advantages offered by that institution, its faculty, course of instruction and equipment. Full information will be sent upon application to the Dean of the College Department.



RESIDENCE IN SAUSALITO, W. H. LILLIE, ARCHITECT.

The June number of PAINTING AND DECORATING contains a paper on glass embossing, by Arthur Segmour Jennings. The regular departments contain much to interest the carriage painter, paper hanger and all branches of the trade. One dollar a year seems a small price to pay for so excellent a magazine. Published by the House Painting and Decorating Publishing Co., Philadelphia.

We are indebted to THE WINSLOW BROS. CO. of Chicago, for a handsome collection of photographs of ornamental iron. This new photogravure edition of their catalogue for the year 1893 is certainly a very creditable specimen of the printers art, but cannot fail of being of great use to the architect and contractor who are about to order work of this kind. A long list of buildings that have been supplied with this class of work by this firm, being in many cases illustrated by engravings, gives the reader an opportunity to judge of the effect produced, which in some instances is really very fine. Mr. P. H. Jackson & Co., of 228 and 230 First street, this city, are the agents.



FIRST FLOOR PLAN W. H. LILLIE, ARCHITECT.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONSTRUCTION OF LAWS IN REGARD TO MECHANICS' LIENS.—Under the provision of the Laws of Ky. that persons furnishing labor or materials for the construction of railroads and other public improvements, by contract express or implied, with the owners thereof, or by a subcontract thereunder, shall have a lien thereon for the price of such labor and materials, does not embrace one who furnishes such labor and materials under a contract with a subcontractor.

Cent. Trust Co. v. R. N. I. & B. R. Co. Circuit Court D. Ky. 54 Fed. Rep. 723. 74.

NEGLIGENCE OF INDEPENDENT CONTRACTORS.—Where a contractor agreed to furnish all materials for the construction of piers, for a railroad bridge across a river, the materials to be subject to the inspection and approval of the engineer of the railroad, and to construct the piers according to certain plans and specifications under the continuing inspection and subject to the approval of the engineer, he was an independent contractor and as such liable for the injuries to third persons, resulting from his negligence in the performance of the work.

Casment v. Brown, 13 Supreme Court Reporter 672. 86.

EFFECT UPON MECHANICS' LIEN OF FAILURE TO RECORD CONTRACT.—Where the constitution provides that mechanics, material men, etc., shall have a lien on the property on which they have labored or furnished material, and the statutes provide that all contracts between the owner and contractor for work, where the amount exceeds \$1,000, shall be in writing and recorded before the work is begun, otherwise the contract to be void, and no recovery to be had thereon by either party thereto; that the labor done and materials furnished by all persons except the contractor shall be deemed to have been done at the instance of the owner, and they shall have a lien for the value thereof, a contractor who has failed to record his contract for work, where the amount to be paid therefor is over \$1,000, is not entitled to a lien.

Morris v. Wilson, Supreme Court of Cal. 32 Pac. Rep. 801. 131.

ASSIGNMENT OF RIGHT TO MECHANICS' LIEN.—Where the statute provides that all persons and laborers of every class, performing labor upon, or furnishing materials to be used in the construction of a building, may have a lien thereon for such services or materials; and also provides that such persons shall themselves file a claim for record, stating the character of the labor or materials which they themselves furnished for the building, the right to assert such a lien is a personal right, for the laborer's own protection, and cannot be assigned.

Mills vs. LaVerne Land Co., Supreme Court of Cal. Feb. 1, 1893, 32 Pac. Rep. 169. 90.

WHERE BUILDING IS NEGLIGENTLY CONSTRUCTED.—In an action on a contract for the erection of a house, the owner pleaded a set-off for failure to build the same in a workmanlike manner, his evidence showed that the floors were not level, that the windows were not vertical, not at equal heights from the floor, though intended to be on the same level; that they had embrasures above them; that bricks were put in the outer wall that had to be removed; and that one room had so many holes in the wall that daylight could be seen at seventeen different places. The contractor's evidence was that the house was constructed according to the local

custom, but did not greatly qualify the facts shown by the owner. If a man contracts to build a house in a workmanlike manner, that means a house built in a workmanlike manner, constructed according to the customs and usages of the section of the country in which the contract is made, but a custom which justified the erection of a house in the manner shown by this owner, is unreasonable. Anderson v. Whittaker, Supreme Court of Alabama, 11 So. Rep. 919. 185.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

The first six months of this year has shown a slight increase in comparison with the first six months of 1892, both in the number of buildings and total cost.

FOR FIRST SIX MONTHS, 1893.

1893	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
Jan'y	3	7	\$ 70,770	27	35	\$ 113,888	2	5	\$ 7,040	32	47	\$ 230,708
Feb'y	3	3	\$ 22,400	40	47	\$ 202,447	18	25	\$ 61,032	50	67	\$ 288,889
March	9	9	\$ 280,438	48	55	\$ 277,324	18	29	\$ 280,221	65	81	\$ 848,802
April	17	17	\$ 129,738	57	67	\$ 251,827	12	18	\$ 41,067	70	83	\$ 430,267
May	1	2	\$ 15,930	65	77	\$ 280,129	10	11	\$ 20,409	81	90	\$ 316,488
June	7	11	\$ 78,347	60	73	\$ 332,827	8	11	\$ 18,850	75	95	\$ 480,024
Total	24	49	\$ 614,518	297	354	\$ 1,498,541	68	100	\$ 425,230	208	245	\$ 2,524,498

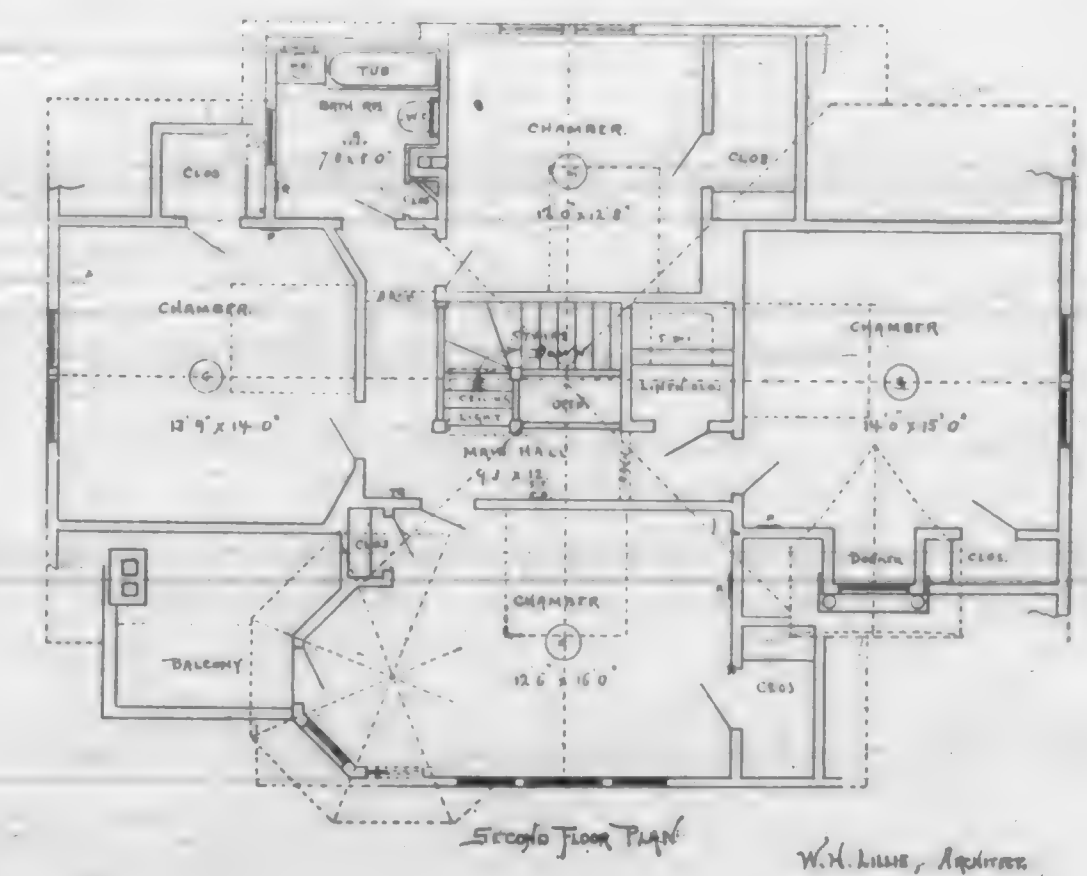
To this amount should be added the further estimated sum of \$500,000 where no contracts have been filed, which would increase the sum total to \$3,024,498.

FOR FIRST SIX MONTHS, 1892.

1892	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
Jan'y	1	14	\$ 101,872	22	33	\$ 210,865	4	4	\$ 7,872	27	51	\$ 330,409
Feb'y	3	8	\$ 116,310	28	50	\$ 279,149	7	8	\$ 24,818	34	60	\$ 430,277
March	2	2	\$ 72,471	30	38	\$ 173,071	5	7	\$ 14,498	37	81	\$ 262,030
April	4	4	\$ 335,358	46	64	\$ 240,772	5	9	\$ 20,880	55	91	\$ 386,961
May	1	17	\$ 137,715	46	52	\$ 271,200	4	5	\$ 21,475	58	74	\$ 480,880
June	8	9	\$ 139,022	39	54	\$ 222,110	13	13	\$ 51,291	55	70	\$ 412,421
Total	16	78	\$ 902,749	211	250	\$ 1,308,967	38	48	\$ 140,780	205	241	\$ 2,442,496

The business of the first six months for several years is shown by the following table.

1885—754 contracts.....	value, \$4,267,375
1886—670	2,486,633
1887—516	3,269,914
1888—437	2,719,820
1889—546	3,910,600
1890—556	3,793,858
1891—583	3,916,973
1892—411	2,942,496
1893—475	3,024,498



SECOND FLOOR PLAN W. H. LILLIE, ARCHITECT.