

substitutes for structural requirements. When a new staircase was demanded in an old building the occupier pointed out that there was a movable escape ready to be let down at one of the windows. When asked to show how it worked the window was found to be fastened down, and he proposed to send for a carpenter, who was in the basement. I need not enlarge on the risks of such contrivances when used by persons not in the frequent habit of using them.

Escape downward by means of the staircase being liable to interruption by fire and smoke, other means must be made available. Very little has so far been done to provide escape by the horizontal route towards adjoining buildings or upwards through the roof. To both of these there are, however, serious objections.

The London Building Act prohibits openings through party-walls between houses in different occupations; besides which, few people would run the risk of the improper user of such convenient modes of getting from house to house without the knowledge of the owners. The late Sir Henry Bessemer showed me an ingenious arrangement by which this last objection was sought to be removed. An opening only 16 inches wide by 3 feet 6 inches high was made in the party-wall at a foot above the floor level. On each side was a very strong iron door and frame, on the inner side of which was a pair of knockers. On an alarm of fire in either house the inmates would open their own door, and ply the knockers on that of the neighbor, who might be expected to come quickly to the rescue. The outside balcony is a much better arrangement, and if it could be generally adopted on each story, or only for alternative stories, there would be in most cases reasonable facilities for rescue. But the balcony, though a beautiful architectural feature, is almost unused in this country. It might cause apprehension of improper access from house to house or from room to room. I have, however, lived for many years in a district where every house has a spacious balcony above the ground story, and I have not heard of this objection. There is an easy means of passing from the window of one house to the nearest window of the adjoining house by fixing a short length of balcony between them crossing the end of the party-wall.

But the best means of escape after the staircase is by way of the roof, a good flight of stairs being provided to the roof door, which should have an automatic fastening. The Cripplegate fire happened to originate in one of the manufacturing warehouses which was first dealt with by the London County Council under the Factory Act of 1891. The two upper stories were occupied by seventy or eighty workgirls, and the owner willingly put a proper door to lead on to the roof. By this route he and they got away, and without it they must all have perished. But easy as it was, there was considerable difficulty in getting the girls out in the few minutes available, some having fainted or become uncontrollable in their excitement. As the workwomen are usually accommodated, often by hundreds, on top stories, this is a useful lesson in construction of means of escape.

I do not suppose that roof doors will be willingly adopted where valuable stocks are kept, but in a district of warehouses where the roofs were properly adapted for escape there might be a watch kept on the roof against thieves and the outbreak of fire.

The construction and arrangement of public buildings, that is, places of worship, schools, hospitals, workhouses, theatres, halls, exhibition room, and other public places of assembly in London, are in certain respects regulated by the London Building Act, 1894. The general construction must

be to the approval of the district surveyor, subject to a tribunal of appeal, but the Act requires that the floors of lobbies, corridors, passages and landings, and the flights of stairs shall be of fire-resisting material. Besides this the dimensions of passages, staircases, and exits of new churches, chapels, meeting houses, public halls, lecture rooms, exhibition rooms, or places of assembly are laid down in the Act. Staircases must be carried and enclosed by nine-inch walls, and with the corridors and passages shall be not less than four feet six inches wide, but if not more than two hundred persons are accommodated this is reduced to three feet six inches. If for more than four hundred persons an addition of six inches for every additional hundred is to be made up to a maximum of nine feet and when the width is over six feet there is to be a dividing hand-rail. If two staircases or passages are put instead of one, each must be of two-thirds the above dimensions, but not less than three feet six inches. And if one portion of the public is accommodated over another portion they must have a separate exit. All doors and barriers must open outwards, and no outside locks or bolts are to be fixed.

As regards public buildings in general these are new provisions. They are a somewhat mild adaption of the much more stringent regulations that have long been applied to theatres and music-halls, and they were very much required.

I was once asked by a member of a Parliamentary Committee who desired to ridicule our theatre regulations why we did not seek to apply them to churches, and could only suggest the comparatively infrequency of accidents in such places. But the reason was inadequate and Parliament has since recognized this in the above provisions. There are many more accidents in places of worship than is commonly supposed, and the most serious have happened in such places. The crowds are often more dense, and precautions are hardly thought of. One, or perhaps two doors are thought enough for many hundreds of people. The organ and heating apparatus and vestry are in dangerous proximity, artificial light and decoration are on the increase. A senseless panic ensues on the least alarm.

To go back rather a long way, in 1120 the monastic church of Vezelay, in France, was burnt, with 1127 men and women. And other similar fatalities are found in old records. Some seventy years ago, at a festival, when the cathedral of a South American city was crowded with the whole female population, the elaborate decorations which thoughtless people always add on festal occasions, took fire, and 2000 perished, hardly any escaping. A few months ago some decorations in Pisa Cathedral took fire, and in a panic twelve persons were crushed to death and twenty injured. A few weeks ago, fifty-four people were killed and eighty injured at a fire in a church in Russia. A few days ago, the organ and gallery of a chapel in Hull were blazing when the Sunday morning congregation assembled. If this outbreak had been delayed for half an hour we might have had an object lesson in panic. I mention these matters because the architect will feel that he ought not to provide anything less than the moderate securities demanded by the London Building Act; and if one or two additional doors are required, they are at all times a convenience to a crowded congregation. If the precautions above mentioned are required in a new building, I am unable to see why they should not within a reasonable time be demanded in old buildings as well.

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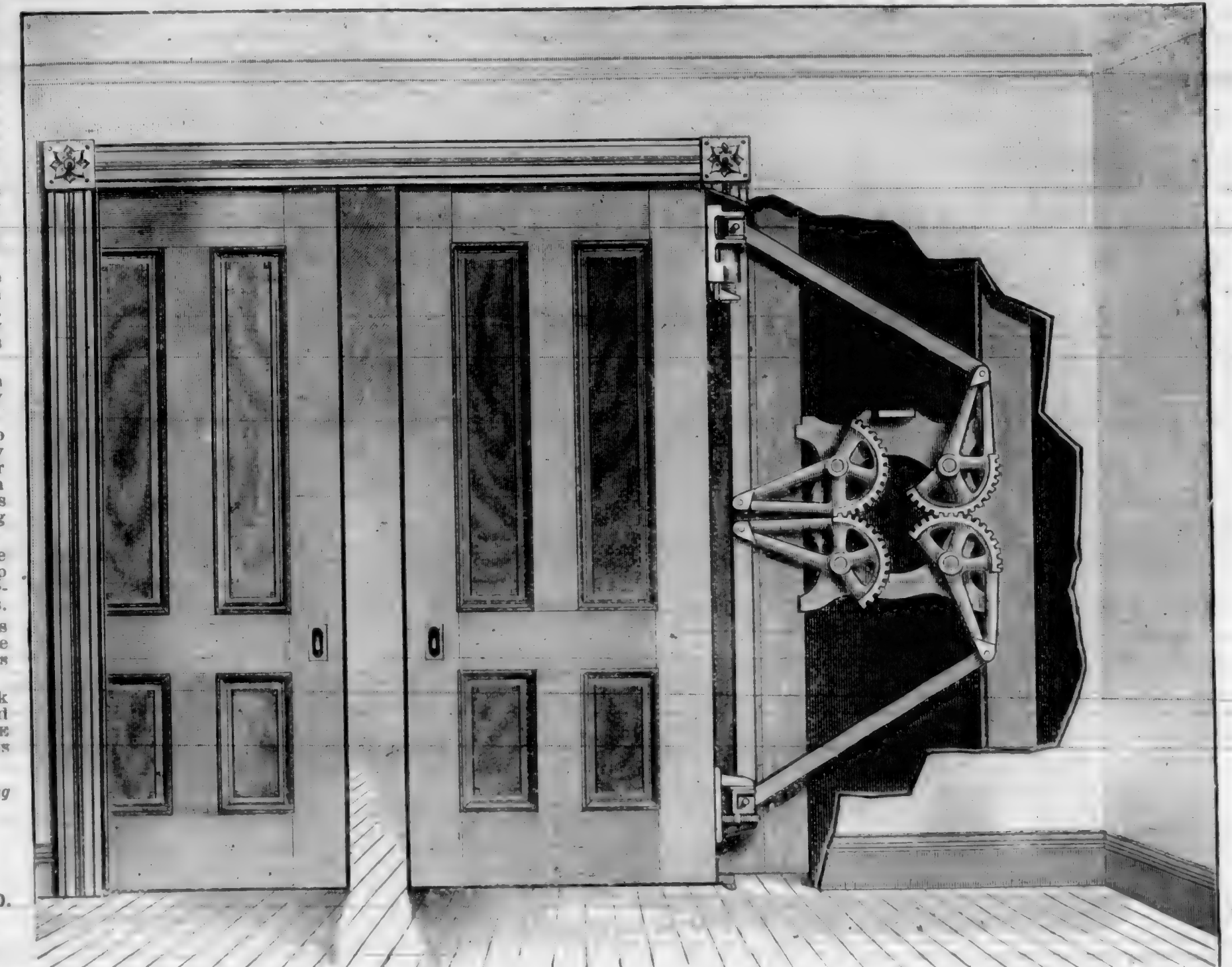
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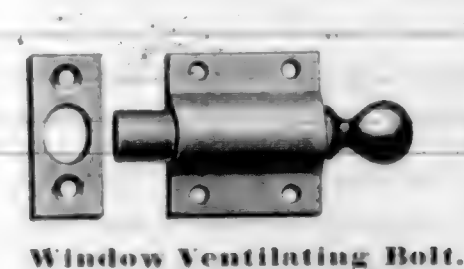
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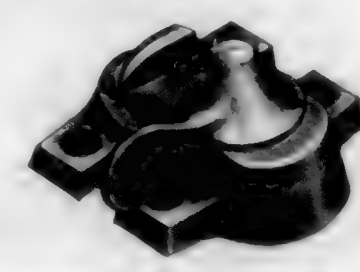
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Fuller, W. P. & Co.; paints, oils and glass. 333	Pacific Bridge Co. 40
Furness, John; contractor and builder. 162	Pacific Refining & Roofing Co. 346
Geler, Frank A.; Market Street Planing Mills. 252	Pacific Lumber Co. 346
Gillette, Secondo; artificial stone. 338	Pacific Manufacturing Co., Mill Work. 385
Gilgoley, Geo.; teaming. 324	Pacific Rolling Mills. 192
Glavin & Eyre; Importers. 324	Pachtz, Gus. J.; electrician, etc. 81
Gladding, McBean & Co.; architectural terra cotta. 162	Palace Hardware Co.; builders' hardware. 232
Golden West Iron Works, Dyer Bros. 64	Paraffine Paint Co.; roofers, building paper. 144
Goodman, Geo.; artificial stone, etc. 331	Patent Brick Co.; brick. 172
Grannis, J. G. & Co.; steam heating, etc. 331	Peacock & Butcher, masons and builders. 122
Gray Bros.; artificial stone and concrete work. 232	Petersen Brick Co.; original red pressed brick. 68
Griese, Carl; artificial stone and concrete work. 232	Petersen, H. M. & Co.; concrete. 240
Hammond, Philip; metal roofers. 43	Pingst, K. I.; hardwood. 76
Hansen, A.; planing mill. 108	Plesse, Henry; mason and builder. 230
Hansen, F. L.; contractor and builder. 108	Pool, Jas. R.; house mover and raiser. 217
Hansen, M. & Co.; planing mill. 314	Rae, James; stone contractor. 156
Harmon Lumber Co.; lumber. 314	Ralston Iron Works. 173
Harris & Jones, Lumber Dealers. 82	Raymond Granite Co.; contractors for stone work. 165
Hausstein, H.; tiles. 294	Reichley Geo.; contractor and builder. 109
Heidt, W.; cornice works. 294	Reigle & Jamieson; machine white washing. 240
Heusel, Ed. F. & Co.; electricians. 375	Remillard Brick Co.; pressed stock and common brick. 278
Herring, R.; mill work. 70	Richardson & Gale; masons and builders. 328
Hille, Wm.; cornice works. 210	Richmiller, Geo.; door opener. 355
Hinder, Ed. B. & Co.; patent blinds. 174	Riley John F.; masons and builders. 329
Hobson, B. Y.; painter. 25	Ringrose, R.; mason and builder. 18
Hock, T. & Son; masons and builders. 232	Rosenbaum, Fr. H.; glass. 96
Hoffman, Y.; mason and builder. 232	Ruffino & Bianchi; marble. 109
Holmes, H. T.; Lime Co.; lime, cement, etc. 288	Sacramento Transportation Co.; patent and stock brick. 332
Hooper, C. A. & Co.; lumber. 341	S. F. Lime & Mortar Co. C. Bennett. 246
Huber, Frank; sash, blinds and doors. 342	San Francisco Lumber Co. 37
Hurburt, R. P.; builder. 158	San Francisco Novelty and Planing Works. 291
Ingerson & Gore; contractors and builders. 333	San Francisco Planing Mill; Wm. Crocker. 12
Jacks, Henry; contractor and builder. 333	San Joaquin Brick Co.; brick. 238
Jackson, P. H. & Co.; illuminating tiles. 159	San Jose Brick Co.; brick. 238
Jackson, W. E.; curbing. 341	Saunders, J. S. W.; contractor and builder. 250
Jordan D. & Son; masons and builders. 57	Schroeder, Wm.; art glass. 68
Joshua Hendy Machine Works. 188	Scott & Van Arsdale Lumber Co. 33
Judson Mfg. Co. 127	Sections, M. P. 304
Keating, M.; Artificial Stone. 13	Smith, J. W.; carpenter. 71
Keatinge, R.; Artificial Stone. 13	Smith & Young; building supplies. 37
Kelleher, M.; house raiser and mover. 23	Smith & Quimby; street contractors. 67
Keokuk, A.; Pacific Coast Lumber and Mill Co. 23	Snell, E. L.; lime and plaster. 101
Keefe, J. H.; painter and decorator. 180	Snook, W. S. & Son; plumbers. 372
Kern, F. W.; contractor and builder. 225	Soule Bros.; carpenters. 61
Kittredge, E. H. & Co.; sash, doors and blinds. 234	Stelger, A.; Sons; architectural terra cotta. 134
Knox & Cook; contractors and builders. 244	Stevens, F. M.; patent chimneys. 15
Kuss, P. N.; painter, decorator and wood finisher. 307	Stockton Brick & Terra Cotta Co. 267
Leak, Geo. R.; contractor and builder. 214	Stratton, Ino. S.; house mover. 362
Larsen, H. H.; mason and builder. 33	Sullivan, J. F.; painter and decorator. 1
Leahy, D.; plasterer. 344	Sullivan, Tim; carpenter. 148
Leonard, J.; Concrete and Stone. 344	Sullivan M. F.; grading and teaming. 288
Leproch, P.; steam and hot water heating. 232	Sweeney, Daniel; carpenter. 325
Logan, J. P.; adjuster and builder. 21	Sweeney, G. C.; plumber. 135
Lovett, A. E.; roof repairing and painting. 342	Tacoma and Home Harbor Lime Co. 288
Lucas & Co.; Golden Gate Plaster Mills, calcined plaster. 31	Tay, Geo. H. Co.; plumbers supplies. 321
Lynch, M. C.; contractor and builder. 274	Tobin, J. R.; plasterer. 173
Macdonald & McKinnon; lumber. 348	Towle & Broadwell. 238
Maguire, A. B.; lime, latas, plaster, cement, etc. 283	Trotter, John; contractor and builder. 251
Maguire, James A.; manufacturer's agent. 130	Tupper, O. M.; lime. 281
Mangledorf, M.; Electrical Maintenance Co. 232	Tuttle, John; teamster, plasterers' supplies. 79
Mangrum & Otter; heating, ventilating, tiles, etc. 294	Union Lumber Co.; lumber. 355
Market Street Planing Mill. 108	Vermont Marble Co. 284
McCarthy, John; mason and builder. 168	Vulcan Iron Works. 284
McClure, H. N.; teaming and grading. 168	Wagner, Henry F.; painting and decorator. 312
McClroy, A.; contractor and builder. 211	Wagner, J. Ferd; mason and builder. 181
McGillivray Stone Co.; stone contractor. 340	Walker, George H.; carpenter. 367
McJowan, M.; mason and builder. 262	Warren, C. A.; grading. 272
McLachlan, T. M.; contractor and builder. 92	Washington & Moen M'FG Co. 310
McMahon, Henry; stair builder. 113	Washington Street Planing Mill. 48
McPhee & Co.; stone contractors. 238	Waterhouse, C. J. 78
Mennie, Alex. plasterer. 208	Watson, W. C.; plasterer. 99
Miller, J. W.; mason and builder. 208	Western Granite & Marble Co. 316
Mitchell, R.; mason and builder. 74	Western Iron Works. 171
Montague & Co., W. W.; tiles, mantles, etc. 237	White Bros.; carpenters. 257
Moore, C. Parker; contractor and builder. 80	White Bros.; hardwood lumber. 145
Moore, G. Howard; contractor and builder. 358	Whittle, H.; mason and builder. 60
Morehouse, C. C.; plasterer. 301	Williams, F. A.; contractor and builder. 178
Mulcahy, J.; mason and builder. 55	Wilson, Bros. & Co.; lumber. 158
Niehaus, Edward F. & Co.; hardwood lumber. 205	Wilson, W. F.; plumber. 238
Niehaus Bros. & Co.; planing mill. 20	Wilson, James A.; mason and builder. 221
North, J. J.; Brick manufacturer. 98	Wilkie, Andrew; planing mill. 343
Nutting, C.; carpenter and builder. 107	Worrel, C. R.; mason and builder. 2
O'Brien, Jas. J.; carpenter and builder. 107	West Coast Wire Works. 273
O'Brien, P. R. & Son; plumbers. 65	Western Expanded Metal & Fire Proofing Co. 349
	Yates & Co.; paints. 349
	Young, S. T.; grading and teaming. 384

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BUILDING NEWS.

LOS ANGELES

The board of trustees of the Los Angeles branch have made its biennial report to Gov. Budd for incorporation in his next message to the legislature. The board ordered contracts let for the construction of asphalt walks and the laying out of a portion of a portion of the grounds for gardens for the use of the botany class.

Among the improvements recommended is \$30,000 for improvements, consisting of moving the gymnasium building two floors, one for a manual training work room and one for enlarging the training school and \$5000 for improvements in the present training school quarters. For the library, \$10,000 is asked. This will give a building 40x45 feet and will be ample for the students as well as the books.

For necessary repairs and painting \$1500 is asked; and for furniture and apparatus \$5000. The total amount necessary for the support of the school, besides the new buildings mentioned is \$124,5000.

Plans have been prepared for Whiting Thompson, for a two-story 8-room frame residence to be built on Orange street near Union avenue. The work on the building is being done by day's work.

Architect R. B. Young has prepared plans for Jas. B. Lankershim, for a warehouse building, 100x100 feet, two stories and basement, as an addition to the factory of Bishop & Co; at Seventh and Alameda street and will be ready for bids next Monday.

Architects Howard & Train are preparing plans for Mr. Williams, an attorney in the Laughlin building, for a one-story frame residence of seven rooms, to be built on Burlington avenue near Eight street; the inside finish of the principal rooms will be in oak balance in Oregon pine.

PASADENA

Architect R. B. Young has let the contract for the excavating for the new Catholic church to J. H. Dovey; it is expected that bids for the structure will be opened soon.

John M. Smith of Montana has purchased 150 feet frontage on West Colorado street between Terrace drive and Orange Grove avenue. It is the intention of the present owner to improve the property with a handsome residence.

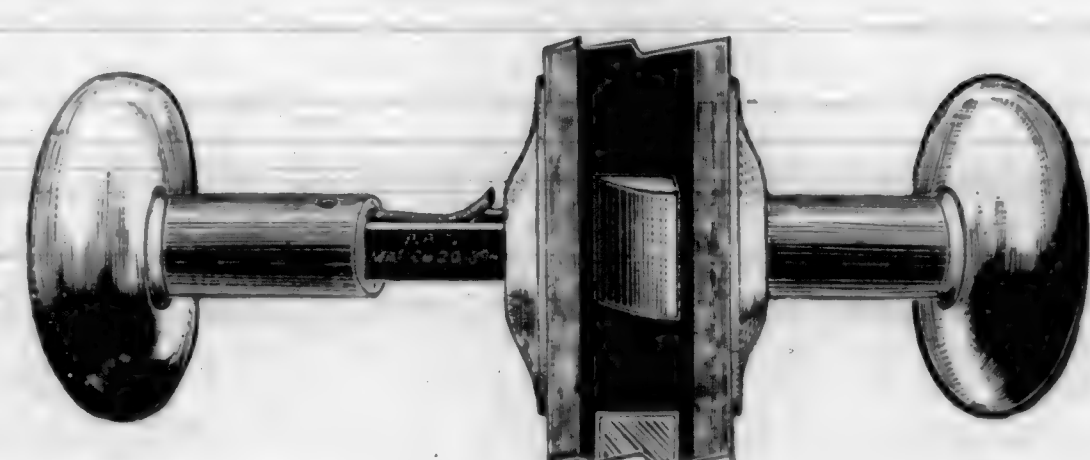
RIVERSIDE

J. W. Babcock will begin at once the erection of a \$1500 house on the ten acres on the corner of Indiana avenue and Jefferson street.

SANTA ANA

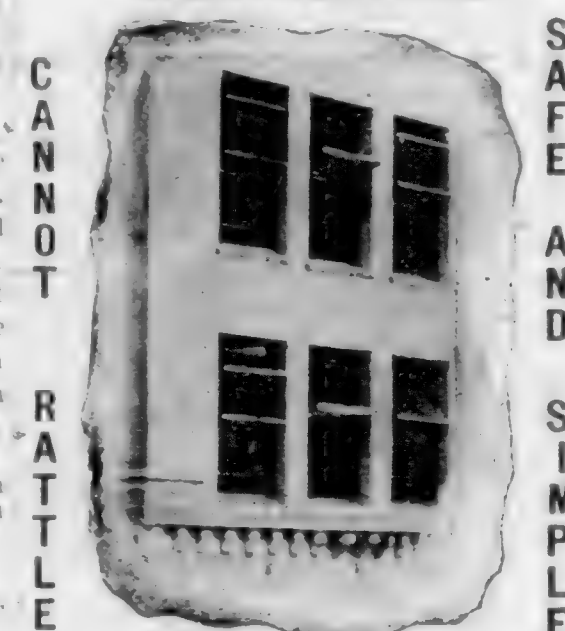
Bids for the construction of the internal sewer system have been opened last week. Fourteen firms competed; the lowest being the Williams, Belcher Co., of San Francisco for \$36,814.44.

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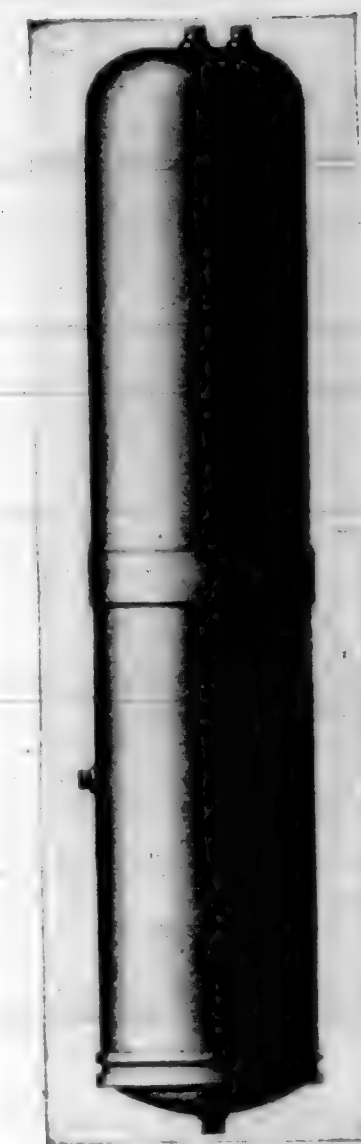
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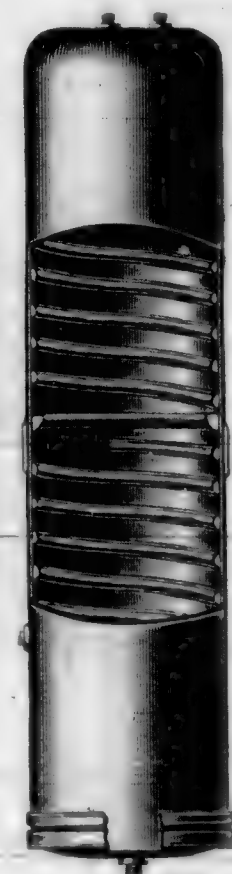
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Jas. E. Wolfe,
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R. H. White,
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Wm. H. Armitage,
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 est Accuracy.

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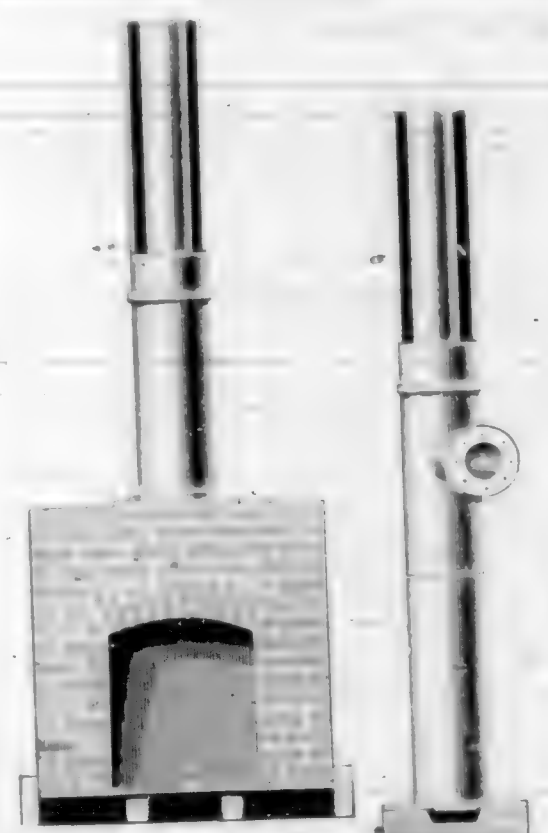
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

\$3.00 PER YEAR

VOLUME XIX, No. 12.

DECEMBER, 1898.

CONTENTS

Index to Advertisers.....	VI
Law Licensing Architects.....	134
From Fort Point to the Cliff.....	135
Our Foreign Visitors.....	136
More Residence Space.....	137
The Coming of the New School.....	138
Protection of Iron and Steel Against Fire.....	139
New York Building Laws.....	140
The New Poodle Dog Restaurant Building.....	141
Hydraulic Mortar.....	142
Irreconcilable Architects.....	143
Trade Note.....	144
Some Points on Estimating.....	145
Fire and Fuel.....	146

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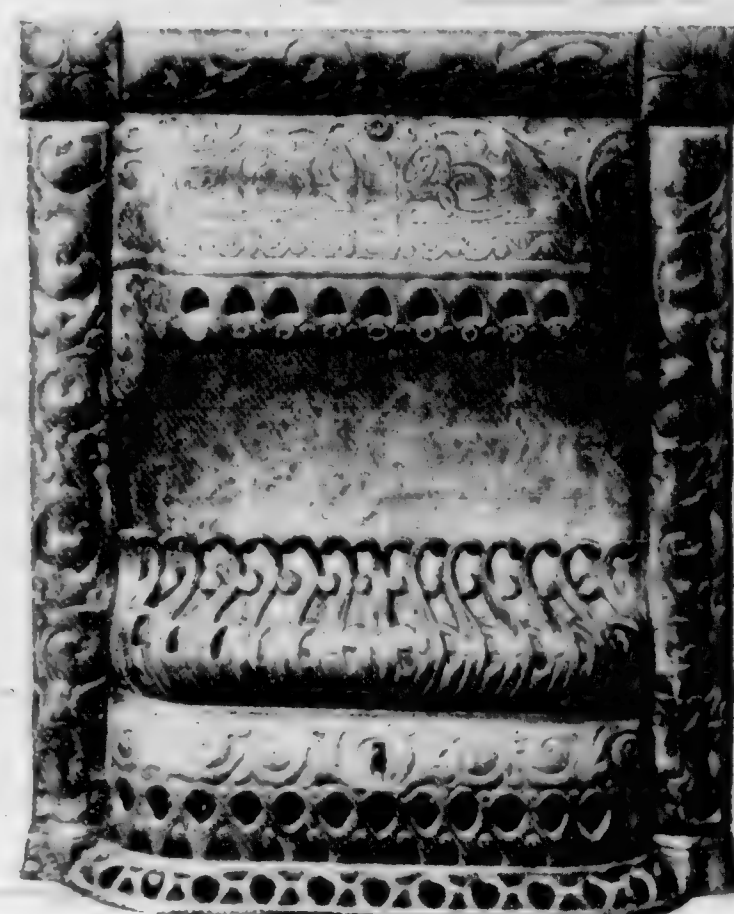
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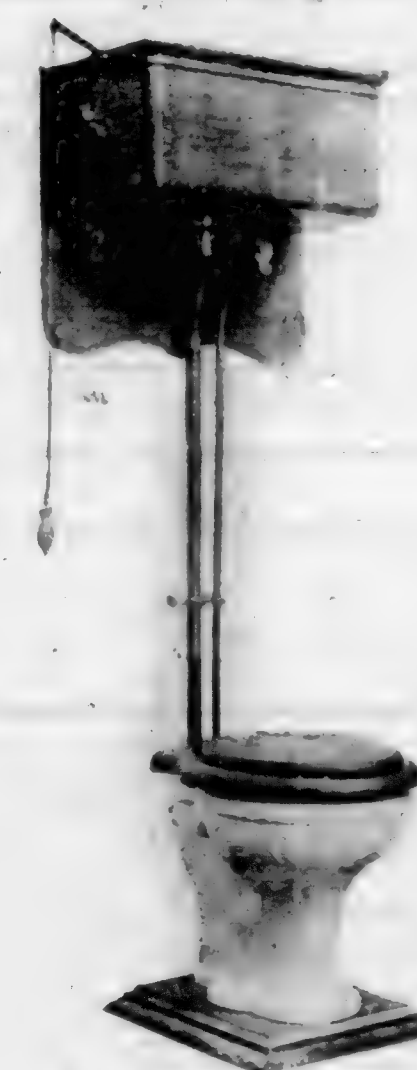
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BUILDING NEWS.

Hartlett near 2nd. Two-story frame; o. Mrs. Amelia P. Hogan; c. W. H. Hanchett; signed, Dec. 15; filed, Dec. 16; cost \$2780.

Broadway near Fillmore. Grading, brick, stone, etc.; o. Mrs. Hannah Liches; a. M. J. Lyon; c. John Furness; signed, Dec. 3; filed, Dec. 8; cost \$6500. Sewers, plumbing, etc.; c. W. F. Wilson; signed, Dec. 3; filed, Dec. 8; cost \$825.

Bush near Fillmore. Carpentry, etc.; o. Elizabeth Walcott; a. Chas. Geddes; c. Samuel E. Thompson; signed, Nov. 15; filed, Nov. 26; cost \$2243.

Bush and Polk. Alterations and additions; o. W. Piper; c. F. V. Acker; cost \$800.

Camino 1 cal (San Jose Ave.). Cottage; o. Henry C. Hagensen; c. L. G. Bergen; signed, Dec. 15; filed, Dec. 17; cost \$1450.

Clay near Laurel. Except painting, etc.; o. Emma D. Buckbee; a. F. S. Van Trees; c. W. H. Bugge; signed, Oct. 4; filed, Oct. 8; cost \$6200.

Clayton near Frederick. To build; o. T. P. and Ellen L. Rordan; a. Chas. J. J. Devlin; c. C. F. Shepley; signed, Nov. 14; filed, Nov. 29; cost \$3425.

De Boom Tract, lots 11 and 15. All work except masonry, etc.; o. Rachel Berg; c. C. Schweizer; signed, Nov. 28; filed, Dec. 5; cost \$1400.

Dolores near 21st. To building; o. Johanna A. Theisen; a. Salfeld & Kohlberg; c. I. W. Coburn; signed, Dec. 1; filed, Dec. 6; cost \$2880.

Ellis near Jones. Carpentry, etc., for five-story brick; o. and c. L. H. Sly; cost \$20,000.

Ellis near Gough. Excavation, o. H. and I. Wolf; a. Philip Schwerdt; c. John Tuttle; signed, Dec. 15; filed, Dec. 17; cost, as per terms given below.

Filbert and Fillmore. All work except plumbing, etc.; o. Frank Mecchi; a. W. H. Lillie; c. Demartini & Traverso; signed, Oct. 30; filed, Dec. 8; cost \$3000.

Haight near Webster. Carpentry, brick work, etc.; o. Patrick Barron; a. R. H. White; signed, Dec. 12; filed, Dec. 13; cost \$6465.

Hayes near Broderick. To build; o. Mrs. Mary R. Gurmendez; c. Philip River; signed and filed, Dec. 3; cost \$3680.

Hermann near Webster. To build; o. Mrs. Lena Beshorman; c. Wilson & Long; signed, Oct. 31; filed, Nov. 28; cost \$2700.

Howard near Stewart. Two-story brick; o. E. A. Howard; signed and filed, Dec. 12; cost \$645.

BUILDING NEWS.

Kearny near Broadway. Concrete retaining wall; o. Cuno & Costa; a. W. J. Cuthbertson; c. Zanetti & Co.; cost \$300.

Laguna and Golden Gate Ave. To build; o. Kate A. Fallon; a. Martens & Coffey; c. John Furness; signed, Nov. 30; filed, Dec. 3; cost \$9200.

Larkin near Sacramento. Three-story frame; o. George W. Harris; a. Shea & Shea; signed, Nov. 21; filed, Nov. 23; cost \$5200.

Laurel Hill Cemetery near Buena Vista Ave. Granite work for a Pyramidal Tomb; o. W. B. Bourn; a. Percy & Hamilton; c. Raymond Granite Co.; signed, Dec. 7; filed, Dec. 9; cost \$11,200.

Main near Howard. Brick work for four-story brick; o. Pelton Water Wheel Co.; a. Walter J. Mathews; c. Miller & Beck; signed, Dec. 7; filed, Dec. 9; cost \$5785.

Main near Howard. Concrete work, etc.; o. Pelton Water Wheel Co.; c. Geo. F. and H. N. Gray; signed and filed, Nov. 22; cost \$1655.

Market and Main. All work for a water tight, concrete floor; o. Augusta K. Gibbs; signed, Nov. 22; filed, Nov. 26; cost \$2740.

As above. Electric freight elevator; c. A. J. McNeill & Co.; signed, Nov. 26; filed, Nov. 28; cost \$2600.

Mission near 3d. Excavations and concrete work; o. Flood & Mackay; a. M. G. Bugbee; c. Cal. Concrete Co.; signed, Nov. 21; filed, Nov. 22; cost \$1060.

Mission near 18th. Alterations and additions; o. Mary J. Bodwell; a. Annie I. Packard; c. C. W. Duffie; signed, Dec. 8; filed, Dec. 9; cost \$1500.

Montgomery near Broadway. To build; o. Harvey Dickerson; c. H. Behrens; cost \$3600.

Morton near Grant Ave. To build; o. Sharon Estate; c. Richardson & Gale; cost \$5000.

Noe and Henry. To build; o. Jeremiah F. Fleming; a. W. Koenig; c. Ira W. Coburn; cost \$3000.

Oak and Lyon. To build two-story and basement; o. D. Einstein; cost \$7000. Oak and Lyon. Two-story frame; o. D. Einstein; cost \$4000. Lyon near Oak; o. D. Einstein; cost \$4500.

Olive Ave. near Van Ness Ave. To build; o. Joseph Henry; a. Copeland & Pierce; filed, Oct. 6; cost \$2250.

Polk near California. To build; o. W. B. Bradbury; c. R. O. Chandler; signed, Nov. 25; filed, Nov. 26; cost \$8052.

Post near Larkin. To build except plumbing, etc.; o. E. Kasson; a. E. J. Vogel; c. D. Currie; signed, Nov. 17; filed, Nov. 25; cost \$2550.

BUILDING NEWS.

Powell and Ellis. Carpentry, mill work, etc.; o. Leonhardt & Haggarty; a. F. S. Van Trees; c. A. J. Forbes & Son; signed, Oct. 4; filed, Oct. 6; cost \$275.

Sacramento near Dupont. Additions and alterations to 3-story brick; o. Lee Chun & Wong Wan; a. Charles Z. Souler; c. M. V. Brady; signed, Dec. 1; filed, Dec. 3; cost \$10,250.

Sacramento and Lyon. Raising, moving, etc.; o. Jacob Schuttler; a. H. Gelfuss; c. Val Franz; signed, Dec. 3; filed, Dec. 3; cost \$2073.

Spruce and Clay. To build; o. F. E. Rich; a. T. Paterson Ross; c. C. M. Depew; signed, Nov. 21; filed, Nov. 28; cost \$2600.

Taylor near Turk. Grading, excavation, etc.; o. M. Heffernan; a. T. J. Welsh; c. Warren & Malley; signed, Dec. 6; filed, Dec. 7; cost \$2703.

Tiffany Ave. and 20th. Three frame cottages; owner and contractor, W. C. Hamerton; cost \$3800.

Valencia and 19th. Double 3-story frame, 6 flats; owner, Peter Crichton; cost \$16,000.

Valencia near 10th. To build; o. H. Fausseg; a. Salfeld & Kohlberg; c. W. Horstmeier & Co.; signed, Dec. 2; filed, Dec. 6; cost \$2950.

Van Ness Ave. near Broadway. To build; o. H. W. Smith; a. Fred Wood; c. Wm. Bell; signed, Oct. 3; filed, Oct. 7; cost \$2500.

Van Ness Ave. and Clay. Galvanize iron, etc.; o. St. Luke's Church; a. A. Sutton; c. Walker Bros; sub-c. Guilford Cornice Works; signed, Sept. 30; filed, Oct. 6; cost \$1830.

Van Ness near Union. To build; o. Robert G. Langrebe; c. Billier & Quaiman; signed, Dec. 3; filed, Dec. 4; cost \$2166.

Waller near Octavia. To build; o. V. Simk; a. Martens & Coffey; c. Garcia & Peralich; signed, Dec. 12; filed, Dec. 13; cost \$3445.

Santa Clara Ave. and Grand street. Guild Hall and class room; o. Christ Church; a. M. G. Bugbee; c. Eber & Libbey; signed, Dec. 7; filed, Dec. 9; cost \$2344.

Daley's Seaside Tract, lot 12, block 19. To build; o. Lydia Atterbury; a. McCrea & Knowles; signed, Nov. 21; filed, Nov. 22; cost \$1950.

ro ve near Parker. To build; o. Harry A. Sully; c. Fred Estey; signed, Nov. 17; filed, Nov. 29; cost \$1542.

Continued on page xii.

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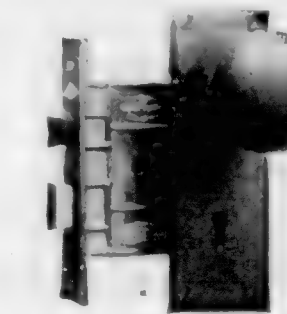
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FACTORY: Corner Townsend and Clarence Streets, San Francisco.

BUILDING NEWS.

Hartlett near 23d. Two-story frame; o. Mrs. Amelia P. Hogan; c. W. H. Hanchett; signed, Dec. 15; filed, Dec. 16; cost \$2784.

Broadway near Fillmore. Grading, brick, stone, etc.; o. Mrs. Hannah Liches; a. M. J. Lyon; c. John Furness; signed, Dec. 3; filed, Dec. 8; cost \$9500. Saws, plumbing, etc.; c. W. F. Wilson; signed, Dec. 3; filed, Dec. 8; cost \$925.

Bush near Fillmore. Carpentry, etc.; o. Elizabeth Walcott; a. Chas. Giddes; c. Samuel E. Thompson; signed, Nov. 15; filed, Nov. 26; cost \$2243.

Bush and Polk. Alterations and additions; o. W. Piper; c. F. V. Acker; cost \$800.

Camino 1 cal (San Jose Ave.). Cottage; o. Henry C. Hagensen; c. L. G. Bergren; signed, Dec. 13; filed, Dec. 17; cost \$1450.

Clay near Laurel. Except painting, etc.; o. Emma D. Buckbee; a. F. S. Van Trees; c. W. H. Bagge; signed, Oct. 4; filed, Oct. 8; cost \$6200.

Clayton near Frederick. To build; o. T. P. and Ellen L. Rindan; a. Chas. J. I. Devlin; c. C. F. Shepley; signed, Nov. 14; filed, Nov. 26; cost \$3125.

De Boom Tract, lots 14 and 15. All work except masonry, etc.; o. Rachael Berg; c. C. Schweizer; signed, Nov. 28; filed, Dec. 5; cost \$1400.

Dolores near 21st. To building; o. Johanna A. Theisen; a. Salfeld & Kohlberg; c. I. W. Coburn; signed, Dec. 1; filed, Dec. 9; cost \$2639.

Ellis near Jones. Carpentry, etc., for five-story brick; o. and c. L. H. Sly; cost \$20,000.

Ellis near Gough. Excavation, o. H. and I. Wolf; a. Philip Schwerdt; c. John Tuttle; signed, Dec. 13; filed, Dec. 17; cost, as per terms given below.

Filbert and Fillmore. All work except plumbing, etc.; o. Frank Meechi; a. W. H. Lillie; c. Demartini & Traverser; signed, Oct. 30; filed, Dec. 8; cost \$3200.

Haight near Webster. Carpentry, brick work, etc.; o. Patrick Barron; a. R. H. White; signed, Dec. 12; filed, Dec. 13; cost \$9465.

Hayes near Broderick. To build; o. Mrs. Mary R. Gurmendez; c. Philip Rive; signed and filed, Dec. 5; cost \$3680.

Hermann near Webster. To build; o. Mrs. Lena Beshorman; c. Wilson & Long; signed, Oct. 31; filed, Nov. 28; cost \$2700.

Howard near Stewart. Two-story brick; o. E. A. Howard; signed and filed, Dec. 12; cost \$947.

BUILDING NEWS.

Kearny near Broadway. Concrete retaining wall; o. Cunes & Costa; a. W. J. Cuthbertson; c. Zanetti & Co; cost \$400.

Laguna and Golden Gate Ave. To build; o. Kate A. Fallon; a. Martens & Coffey; c. John Furness; signed, Nov. 30; filed, Dec. 5; cost \$9200.

Larkin near Sacramento. Three-story frame; o. George W. Harris; a. Shen & Shen; signed, Nov. 21; filed, Nov. 23; cost \$5200.

Laurel Hill Cemetery near Buena Vista Ave. Granite work for a Pyramidal Tomb; o. W. B. Bourn; a. Percy & Hamilton; c. Raymond Granite Co; signed, Dec. 7; filed, Dec. 9; cost \$11,286.

Main near Howard. Brick work for four-story brick; o. Pelton Water Wheel Co; a. Waller J.

Mathews; c. Miller & Beck; signed, Dec. 7; filed, Dec. 9; cost \$5785.

Main near Howard. Concrete work, etc.; o. Pelton Water Wheel Co; c. Geo. F. and H. N. Gray; signed and filed, Nov. 22; cost \$1655.

Market and Main. All work for a water tight, concrete floor; o. Augusta K. Gillos; signed, Nov. 22; filed, Nov. 26; cost \$749.

As above. Electric freight elevator; c. A. J. McNicoll & Co; signed, Nov. 26; filed, Nov. 28; cost \$2600.

Mission near 3d. Excavations and concrete work; o. Flood & Mackay; a. M. G. Bugbee; c. Cal. Concrete Co; signed, Nov. 21; filed, Nov. 22; cost \$1060.

Mission near 18th. Alterations and additions; o. Mary J. Bodwell; a. Annie I. Packard; c. C. W. Ruffin; signed, Dec. 8; filed, Dec. 9; cost \$1500.

Montgomery near Broadway. To build; o. Harvey Dickerson; c. H. Behrens; cost \$3600.

Morton near Grant Ave. To build; o. Sharon Estate; c. Richardson & Gale; cost \$3000.

Noe and Henry. To build; o. Jeremiah F. Fleming; a. W. Koenig; c. Ira W. Coburn; cost \$3600.

Oak and Lyon. To build two-story and basement; o. D. Einstein; cost \$7000. Oak and Lyon. Two-story frame; o. D. Einstein; cost \$4000. Lyon near Oak; o. D. Einstein; cost \$4500.

Olive Ave. near Van Ness Ave. To build; o. Joseph Henry; a. Copeland & Pierce; filed, Oct. 6; cost \$2250.

Polk near California. To build; o. W. B. Bradbury; c. R. O. Chandler; signed, Nov. 25; filed, Nov. 28; cost \$9052.

Post near Larkin. To build except plumbing, etc.; o. E. Kasson; a. E. J. Vogel; c. D. Currie; signed, Nov. 17; filed, Nov. 25; cost \$2550.

BUILDING NEWS.

Powell and Ellis. Carpentry, mill work, etc.; o. Leonburde & Haggerty; a. F. S. Van Trees; c. A. J. Forbes & Son; signed, Oct. 4; filed, Oct. 6; cost \$275

Sacramento near Dupont. Additions and alterations to 3-story brick; o. Lee Chun & Wong Wan; a. Charles Z. Soule; c. M. V. Brady; signed, Dec. 1; filed, Dec. 3; cost \$10,250.

Sacramento and Lyon. Raising, moving, etc.; o. Jacob Schiltgen; a. H. Gellfus; c. Val Franz; signed, Dec. 3; filed, Dec. 3; cost \$2675.

Spruce and Clay. To build; o. F. E. Rich; a. T. Puterman Ross; c. C. M. Depew; signed, Nov. 21; filed, Nov. 28; cost \$2900.

Taylor near Turk. Grading, excavation, etc.; o. M. Heffernan; a. T. J. Welsh; c. Warren & Malley; signed, Dec. 6; filed, Dec. 7; cost \$2703.

Tiffany Ave. and 29th. Three frame cottages; owner and contractor, W. C. Hamerton; cost \$3800.

Valencia and 19th. Double 3-story frame, 6 flats; owner, Peter Crichton; cost \$16,000.

Valencia near 16th. To build; o. R. Faussig; a. Salfeld & Kohlberg; c. W. Horstmeier & Co; signed, Dec. 2; filed, Dec. 6; cost \$2520.

Van Ness Ave. near Broadway. To build; o. H. W. Smith; a. red Wood; c. Wm. Bell; signed, Oct. 3; filed, Oct. 7; cost \$2700.

Van Ness Ave. and Clay. Galvanize iron, etc.; o. St. Luke's Church; a. Sutton; c. Walker Bros; sub. a. Guilfoyle Corrice Works; signed, Sept. 30; filed, Oct. 6; cost \$1839.

Van Ness near Union. To build; o. Robert G. Langrebe; c. Miller & Qualman; signed, Dec. 3; filed, Dec. 4; cost \$2166.

Waller near Octavia. To build; o. V. Simi; a. Martens & Coffey; c. Caccia & Fearich; signed, Dec. 12; filed, Dec. 13; cost \$3445.

ALAMEDA

Santa Clara Ave. and Grand Street. Guild Hall and class room; o. Christ Church; a. M. G. Boubee; c. Eber & Libbey; signed, Dec. 7; filed, Dec. 9; cost \$2344.

BERKELEY

Daley's Scenic Tract, lot 12, block 19. To build; o. Lydia Atterbury; a. McCrea & Knowles; signed, Nov. 21; filed, Nov. 22; cost \$1950.

Do ve near Parker. To build; o. Harry A. Sully; c. Fred Estey; signed, Nov. 17; filed, Nov. 25; cost \$1542.

Continued on page xii.

The Yale & Towne Mfg. Co.

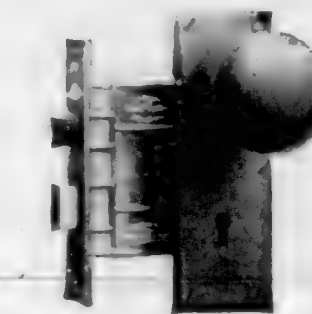
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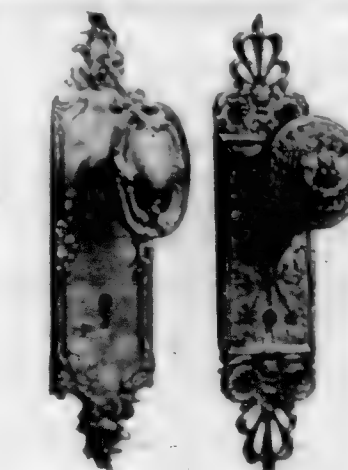


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GENERAL INDEX OF ADVERTISEMENTS.

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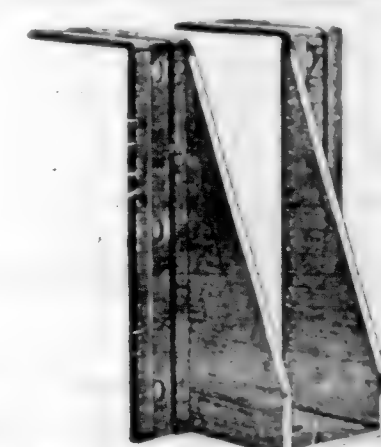
Architects.
Architects' Supplies.
 Keuffel & Esser.....
Artificial Stone.
 Goodman, Geo.....
Boilers.
 Randolph & Clowes.....
Building Supplies.
 Smith & Young.....
 C. J. Waterhouse.....
Building and Loan Assn.
 Gansburger, Emil.....
Brick Preservative.
 Cabot's.....
Cement.
 W. R. Grace & Co.....
Chimneys Patent.
 Chas. W. Morgan & Co.....
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 G. R. Schmitt.....
Engineers.
 Tilton, Chas. S.....
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 Rapid Safety Filter Co.....
Furniture and Upholstery.
 Bateman, W.....
Hardware.
 Yale & Towne Lock Co.....
Heating and Ventilating.
 W. Morgan & Co.....

CLASSIFIED INDEX.

Iron Hangers.
 Van Dorn, Chas. J. Waterhouse, Agent.....
Iron Works.
 Western Iron Works.....
Iron Cornices.
 Cronan, Wm.....
 Wm. Heidt.....
Incandescent Lamps.
 General Electric Co.....
Lumber.
 Scott and Van Arsdale.....
 Sierra Lumber Co.....
Mantles Tiles, Etc.
 Montague & Co., W. W.....
Metal Lath.
 Western Expanded Metal Lath and Fire
 Proofing Co.....
Mortar Color.
 Cabot's Mortar Color.....
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 L. R. Butcher and Co.....
 E. O. S. J.....
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 Fuller & Co., W. P. & Co.....
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 Zellerbach & Sons.....
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Plaster.
 Lucas & Co.....
Plumbers and Gasfitters.
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 Ives, H. B. & Co.....
Sewer Pipes.
 Gladding, McBean & Co.....
Sewer Traps.
 Dallimore, G. C.....
Sash Lines.
 Samson Cordage Works.....
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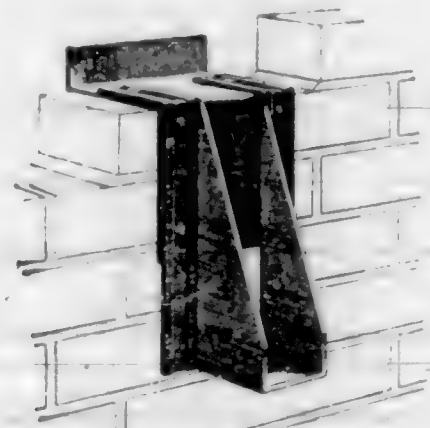


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FOR PUBLIC BUILDINGS.

IMPORTANT

ARCHITECTS

W. MORGAN & CO. HEATING, VENTILATING AND SANITARY ENGINEERS. 108 First St., S. F. Cal.

GUARANTEE:

A system of warming and ventilating that shall have the capacity to warm and supply each room with enough pure air to renew the entire volume of air in said rooms from four to six times per hour without unpleasant draughts as from open doors or windows.

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A system of sanitary closets (separate and distinct from the ventilation of the building), so constructed; that no matter how much they may be used, the ventilation and flushing device connected therewith, shall prevent any disagreeable odor from either the closet or urinal apparatus.



THE HEAD OF THE PRESIDENT

is protected by the best brand of roofing tin that is made. This is the TAYLOR OLD STYLE brand made only by us. Contracts for such work are awarded only after the strictest tests and examinations. The TAYLOR OLD STYLE tin was used to replace another brand which had been put on the White House only a short time before. What is good enough for the first citizen of the first country in the world, ought to be good enough for your customers.

N. & G. TAYLOR CO.,
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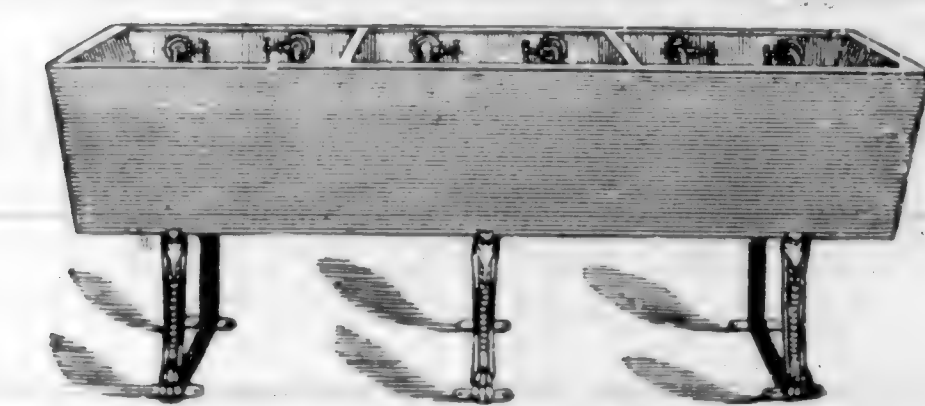
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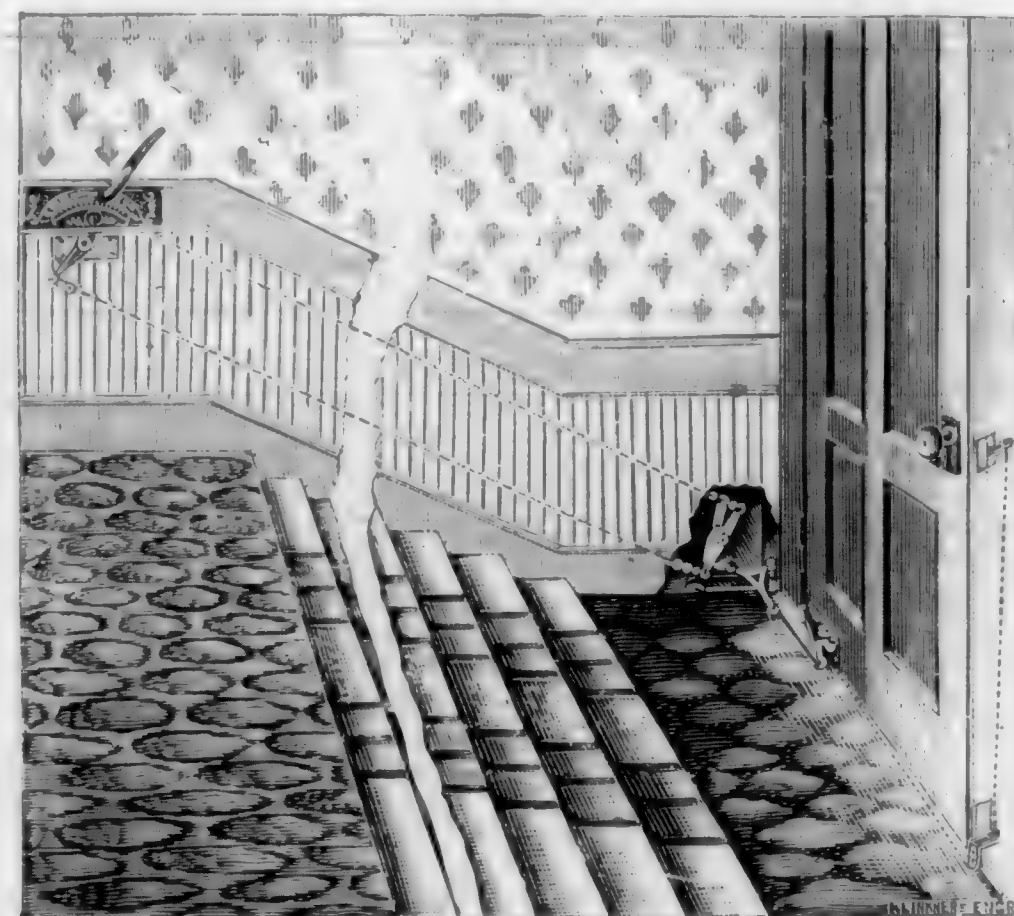
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

ESTABLISHED IN 1879. NOW IN THE NINETEENTH YEAR. INCORPORATED 1889.

PUBLISHED ABOUT THE 20th OF EACH MONTH BY E. H. BURRELL, LESSEE, PUBLISHER. OFFICE 408 CALIFORNIA ST. SAN FRANCISCO CAL.

1300 PER YEAR

VOLUME XIX.

DECEMBER 20th, 1898.

NUMBER 12.

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

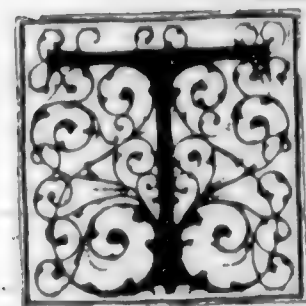
CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E.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



THE CALIFORNIA ARCHITECT AND BUILDING NEWS extends the seasons warmest greetings to its patrons and friends. The efforts to render this publication worthy of the profession and commensurate with the patronage it enjoys is every day bearing fruit. The words of appreciation expressed by contemporaries and individuals are in the highest degree cheering. It encourages attempts at improvement and increases the determination to equal, if not surpass, the very best publications that issue from older communities. It is believed that a new era is opening for San Francisco and the coast, one that will bring added prosperity to this lavishly endowed section of the country and open out a period of advancement and wealth in which the architectural profession and builders generally will, of necessity, have a great share. It will be the con-

tinued aim of the publisher, as it has always been, to support actively the interests to which it is devoted by every means in its power. Its loyalty to San Francisco and the coast and to every interest that aids to bring new developments and increased prosperity throughout the state is known and appreciated. No assurance is needed of continued effort. THE CALIFORNIA ARCHITECT AND BUILDING NEWS is accepted all over the world as the representative and exponent of the builders profession of California. It reaches every architect west of the Rocky mountains and its value as a means of communication between the manufacturer and the especial interests of which it is the organ is attested by its increased advertising patronage and swelling circulation. To all our friends, east and west, we tender congratulations and a sincere hope that the future will prove a prosperous season to one and all.

LAW LICENSING ARCHITECTS.



THE coming session of the State legislature gives an opportunity for a renewed attempt to be made to secure the enactment of a statute compelling all architects to take out licenses and authorizing builders to employ only such architects as have duly complied with the law. The sentiment toward such a statute is growing in the east and in every settled community the necessity of such a law is becoming more and more manifest. Illinois has a model statute on this subject, passed soon after the Chicago fire had demonstrated a necessity for such action on the part of those interested in the welfare and protection of communities. The country is in the throes of a tremendous expansion. Building construction has advanced so rapidly that the methods of ten years ago are almost obsolete. The demands of the present require a nearer approach to fire-proof standards than ever before and greater attention to scientific details. The architect of today to be successful is necessarily compelled to master these details and to expend more time in acquiring the education that fits him for the excessive responsibilities demanded. The law exacts heavy penalties for those who presume to trifle with the health of communities and practice medicine without the license of competent authority and it appears to many that architects as the guardians of the safety of the people should be protected from the competition of every amateur who thinks himself sufficiently gifted to plan a dwelling.

FROM FORT POINT TO THE CLIFF.



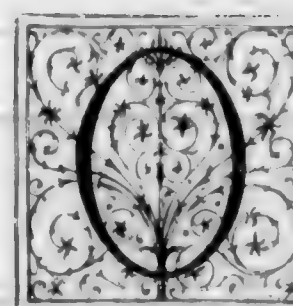
HIS HONOR, Mayor Phelan, at the dinner to the visiting architects at the Bohemian Club a few evenings ago, surprised and delighted the gentlemen present by an announcement that Mrs. Hearst had authorized the formation of a committee to have in charge and to formulate some general plan for the adornment of San Francisco, with special attention to a new system of sewerage, tree planting, laying out boulevards and the like, the design being to render the city attractive to the outward senses and more delightful as a place of residence. It would be difficult to imagine a more opportune or useful suggestion or one more in line with the spirit of the age. San Francisco has always relied too much upon its fine situation and impressive surroundings to give sufficient attention to artificial adornment but it is learning and now one of the missions of Golden Gate Park is at least being manifested. The park has demonstrated how the most unpromising conditions may be made into a scene of beauty and enchantment by the expenditure of a moderate amount of money and the employment of competent landscapeists. What has been done in this one location may be accomplished in lesser degree anywhere else in the city. Such an example of floral beauty and improvement is possible no matter how small the area available for the purpose may be. Improvement of home lots is thus stimulated and rivalry between neighbors becomes acute. The appearance of the

streets is also vastly enhanced and at the same time more valuable for building purposes and thus the tendency to remain a resident rather than to seek the enticements of suburban localities is lessened. Architects are intensely interested in this question of municipal improvement for upon it rests the question, in a large measure, of the rapidity of future expansion. This committee, which has been most judiciously selected, will, ere long, be seeking the assistance of those who can help by suggestion or otherwise. In the matter of laying out new boulevards, much can be said. The present is the time to begin. Land is cheaper then it will ever be again and vacant properties on the line of these proposed new roadways may be acquired at low prices. The time is especially opportune, as the government is disposed to aid in the improvement on account of the future importance of San Francisco as a center of military operations. All of the projected boulevards connect with those of the Presidio, for the reason that these are already constructed and furthermore because of the wonderful natural attractions of the reservation. Practically a boulevard extends from Market street by the way of Van Ness Avenue to Fort Mason and thence along Lombard street to the Presidio where it extends to Fort Point as well as to Pacific Avenue. Lombard street should be widened to the dimensions of Van Ness Avenue at once. The government would assist and by this means several miles of perfect drives would be obtained at very slight expense. The extension of a boulevard from Fort Point to the Cliff House is perfectly feasible though an expensive project. Those who have inspected the Riverside drive along the Hudson at New York understand the enthusiasm with which that splendid improvement is regarded. There is an opportunity for not only exceeding the splendors of Riverside but of constructing one that will be unequalled in the whole world by following the line of the coast from Fort Point to Point Lobos, a distance of perhaps four miles. Could any thing finer be possible. Imagine a driveway as wide as Van Ness Avenue stretching the entire distance, adorned with trees and shrubbery, with facilities for pedestrians, affording at every step a splendid prospect of one of the great views of the world. The entire distance from Fort Point to the Cliff would be one long panorama of scenes of unsurpassable beauty. The expense of constructing a roadway along the Cliff would be great but would be more than offset by the advance in the property along its course which would soon be appropriated for home sites. The roadway, moreover, would give the government access to the fortifications which in time will be erected at the entrance to the bay and it would, without doubt, liberally assist by appropriation the carrying out of such a design. No professional instinct is necessary to the understanding of the result of the construction of a shoreway as suggested. The immediate consequence would be the appropriation of all the land fronting on the bay shore and the construction of palatial homes each with terraced lawns extending down to the waters edge. Neither would the expense be beyond the ability of the community. No difficulty whatever, in an engineering sense, exists that would prevent the execution of such a design. It would be simply a question of grading and the disposition of the material.

A shoreway drive along this route would form a connecting link between the center of population and the grand ocean drive way that is partially constructed along the western border of the city and would give access to the park from the west besides running through a territory which street car lines would never invade or obstruct. Such a

driveway, which is suggested only in general terms, would also add greatly to the beauty of the harbor entrance and prove an impressive exhibition of the power and wealth of the city to every one who enters through the Golden Gate by the pathway of the sea.

THE COMING OF THE NEW SCHOOL.

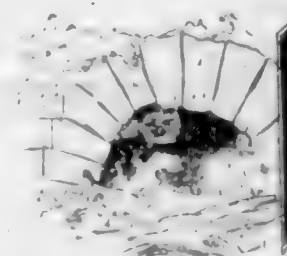


ONE of the signs of the times is the unexpressed longing or aspiration for a new school of architecture that will be American in its distinctive character and national in its type. This hope is not confined to the architectural profession. Heretofore this nation has had to be content to follow the ancient schools. Every civilization but our own has furnished to the world some conceptions or types that were purely characteristic and original and reached their highest perfection or development just before these nations began to retrograde or decline. Perhaps the luxuriance reached in matters pertaining to art was an indication that the fruit was ripe and that the worm of decay was already at work. Examples of such coincidences are too numerous not to have been remarked by philosophical observers and some have accepted as an axiom that extreme development of the purely intellectual arts is a positive indication of a lack of national strength and of ultimate effeminacy. If such theories are well founded the American nation has a long life before it judging from the imperfect development of the arts and our utter dependence upon Europe for every thing to art pertaining.

So far America has contributed nothing but the tall building in return for all the architectural contributions it has received from older nations. The tall building is distinctive only as an example of audacity and new methods of construction and is confessedly inartistic and ugly but at the same time, great. The painful sensation that strikes the American traveler on finding that all the architectural wonders of his own land are merely repetitions of a type to be met with in every considerable city of Europe is distressing as it compels a confession of inferiority. Regrets at the dependence and lack of invention of the American architect will arise unbidden for even the details of his work as we learn by the examination of a certain carefully edited work, copiously illustrated, on "Architectural Details" published by a master of the art and filled with foreign studies of windows, doors, arches, gargoyles, minarets and little tid bits, especially for the use of American architects. The Apostle of the new school has not yet deigned to indicate a sign of his early appearance. The faithful are longing for the day of the prophets arrival and in the meantime have to be content to follow in the old beaten tracks. It is said that all the successful plans of the Hearst competition for the California University are of the French school, and if carried out on these lines a type will be established in California from which the state will not be emancipated for a hundred years. The fact is ominous for the rise of a new school of architecture on the western coast and is a lasting witness to the lack of originality possessed by present day architects.

It would appear to a non-professional that the day for the classic, Romanesque, Italian, Gothic and other styles which had their rise centuries ago and which survive only on account of inability to invent better ones, is past. Sublime as some of the instances of these types existing are, a complaint of repetition and monotony in the building of later days is made on good grounds. The nations which are the great builders are so rich and their resources so vast that ordinary plans of construction are insufficient as an expression of the spirit of the age. An era of construction is about to begin in our own land that will dwarf all early efforts. The industrial future of the country is to surpass the most sanguine expectations of the greatest optimist and the growth of wealth will be evidenced by the size, number and grandeur of the builders' creations. It may be that the new school that is to arise will find its germs in California where the Mission or Morisco types has numerous examples. It would not be surprising if the oldest architectural methods and character should supply the suggestions for a distinct school for the newest and greatest of nations.

OUR FOREIGN VISITORS.



IT has been flattering to the publisher of THE CALIFORNIA ARCHITECT AND BUILDING NEWS to learn that even in the distant capitals of Europe this publication is accepted as the ultimate authority in all matters relating to architecture and building in this part of the world. Nearly all of the eminent architects who are visiting San Francisco in the interests of the great University competition, from Paris, Vienna, London and Dresden, have done us the honor of calling and taking advantage of our facilities for information which has been most freely tendered. The universal expression from the visitors is of admiration and astonishment at the great progress made by San Francisco in its brief existence. The people, the country, the buildings, all are away beyond their anticipations. "Almost like Paris," remarked a gentleman from La Belle, France. The impression left by the visitors has been most agreeable. May they all win.

MORE RESIDENCE SPACE.



WHEN the late Adolph Sutro set about making the Heights at the Cliff the attractive spot that it now is, his purpose was not altogether selfish. He had acquired enormous tracts of sand covered real estate in that vicinity and, undoubtedly, hoped to influence its advance in value by demonstrating that these bleak, barren and exposed acres were

capable of high cultivation and would richly repay the care

and expense necessary to demonstrate that fact. Mr. Sutro, notwithstanding his capacity to drive hard bargains was a good deal of an idealist which was proved by his fondness for art and the remarkable judgement he displayed in the choice and selection of his art treasures. The Heights which he developed into a show place, surpassed by very few in the world, is a demonstration of his refined taste and cultivated mind. He appreciated the most magnificent of all Pacific Ocean views and foresaw that the whole plateau bounded by the harbor entrance almost to Golden Gate Park would eventually be covered with the homes of that rich and cultivated class which in the future will be included in the population of San Francisco. It is a matter of great surprise that in planning this city some one did not suggest a series of grand boulevards. In only one instance is there a residence street of more than ordinary width, Van Ness Avenue. Possibly those early engineers did not anticipate the rapid growth of the city or else there were no mayors like Sutro or Phelan to suggest that in the laying out of a great city only utilitarian purposes were to be considered. San Francisco seems to have been laid out on a principle that secured the largest number of building lots in the smallest possible area. At all events the rich who build fine homes and spend most money in adorning them were not considered when the present plans for arrangement of the streets were adopted. The spectacle is actually afforded in this city of no place where the rich can live and be surrounded on all sides by sympathetic and congenial companionship. What is meant by this somewhat surprising statement is that in all San Francisco there is no portion of it exclusively designed for the wealthy. New York has its Fifth Avenue, Boston, its Back Bay, Cleveland its Euclid Avenue but San Francisco nothing but Van Ness Avenue which in a few years will be monopolized by business and given up to commercial pursuits. In the not distant future residence will be banished from the entire section east of Van Ness Avenue. The beautiful streets running west are not by any means overlooked in this controversy but there is hardly one of these that are not almost ruined by their extraordinary and impossible grades.

What is now needed is a section devoted exclusively to residence for the opulent, where the wealthy can make such display as suits them by building expensive homes and laying out attractive grounds, where broad avenues can be devoted to public drives and street cars do not invade, in fact a Boston Back Bay in which the rich may indulge in their fancies and the public at large be benefited by the example. There is plenty of space in the north west section of the municipality to create just such an ideal. The ground is level and no where is there to be found grades not of the mildest character. The views in every direction are superb and easy access can be gained to the park or to the sea. The Sutro lands are in the market at reasonable prices and land is no where in this section extravagantly high. Let some enthusiastic and energetic real estate dealer take hold of the idea, let capital absorb the lands necessary for this purpose and the reward of the enterprise will be great. The wealthy would quickly respond, and a new section, built up in splendid homes, adorned with smooth lawns and rich in foliage would soon become a fact. Let street cars be forever banished from the broad, level roadways and only structures worthy of the place be allowed. Such a residence section would attract and in a short time its enhanced beauty would become the boast of the western half of the continent.

PROTECTION OF IRON AND STEEL AGAINST FIRE.



It is just as impossible, under prevailing conditions, to construct absolutely fire-proof buildings as it is to prevent the occurrence of conflagrations altogether. What can be and should be demanded of our architects and builders, however, is that their constructions shall be made fire resisting to such a degree that the efforts of the Fire and Police Departments towards life and property saving have reasonable chance and time for success. In residences and business edifices, where structural iron or steel is necessarily employed, and where the danger of a fire gaining headway is increased by the more or less inflammable contents, iron and steel have proved most dangerous building materials. At the great conflagrations of the warehouses in Hamburg, Germany, 1894-5, and of the Borsig Mill in 1898, it became evident that a fire lasting but a comparatively short time would absolutely demolish the strength of unprotected iron columns. The exposure to heat of a very small portion of the surface of a support of this material is sufficient to promptly destroy the whole structure depending on same. The power of resistance of iron diminishes very rapidly at increasing temperatures.

Calling the tensile strength of iron at 26° C. 53,400 lbs. to the square inch, 100 per cent, it is at

150° C.	97 per cent	
200° "	95 "	
250° "	93 "	melting point of Tin.
300° "	90 "	
350° "	85 "	Lead melts at 330
400° "	73 "	melting point of Zinc
450° "	61 "	
500° "	38 "	melting point of Magnesium
550° "	23 "	at this point iron appears red-hot in darkness
600° "	19 "	
700° "	16 "	dark red
800° "	11 "	dark cherry red
900° "	6 "	cherry red
1000° "	4 "	light cherry red.

A limited space or portion of structural iron can readily become red-hot by the flames striking it. Even if the danger be lessened by heavy construction, these conflagrations have proved that increasing the weight five fold does not avert collapse of the structure at 700° C. Red-hot cast iron also cracks at the joints easily, and at 1100° it begins to melt. Iron being a good conductor, renders it all the more dangerous, and so does the great expansion of the material in heat, causing disastrous bending. When water is applied rapid contraction ensues, hastening collapse. Moderate heat suffices to destroy arches or vaults resting on iron or steel.

The conflagration of the Borsig Mill showed the most fanciful bending and twisting of iron and steel columns, girders and supports, and many of them must have been as soft as dough. The building was totally destroyed.

Wood has proved greater power of resistance at these conflagrations than could be expected. Constructions of wood at time of fire can be fairly judged by inspection, enabling the fire department to estimate the probable time of collapse. At these conflagrations iron and steel constructions have

NEW YORK BUILDING LAWS.

however, nearly always collapsed unexpectedly, rendering the work of the department very dangerous.

Structural iron and steel should therefore be protected by fireproof covering. There are numerous materials offered for this purpose, but when tried they have generally been exposed to moderate heat (under 1100° C.) only, and then only for about an hour. Fires in warehouses, manufactories, etc., however, generally lasts for hours. Of a fireproof material it must be expected:

1. That it does not burn itself.
2. That its strength must not suffer materially when exposed to heat for a considerable time.
3. It must be a sufficiently poor conductor of heat, so as to protect structural iron or steel for hours from deformation.

Among the newer materials, the Asbestos Cement, invented by Engineer Kuhlwein, has after many severe tests, extending over hours, been conceded the first place as the most valuable fire-proofing material extant, and its use has consequently found rapid extension. This Asbestos Cement is fire and smokeproof, a very poor conductor of heat, weatherproof, and deadens the sound. Ceilings, walls, floors, doors are made of the same. It is used in the construction of hot-air conduits, elevator shafts, for the covering of stair cases (lower side) of columns, girders, supports, etc., the filling of fireproof safes, by the Imperial German Navy for isolation of magazines on board ship, etc.

The Hamburg Fire Department made tests showing that the Asbestos Cement Kuhlwein in the form of a covering of 1.6 inches in thickness protected a cast iron column against a temperature of 1400° C. for over four and one-half hours. The Altona Fire department made tests in which cast iron girders and columns with Asbestos Cement covering stood a temperature of 1000° 1200° C. for six hours without bending or deformation of any kind.

The Asbestos Cement Kuhlwein is a powder like Portland Cement, and is used like the latter. It sets when mixed with water. No sand is used. Any efficient laborer can apply it without difficulty. The price is moderate. Thickness of Asbestos Cement covering required is from 0.8 1.6 inches say on an average 1.2 inches. No air space is left between the metal and the Cement covering.

The Chief of the Fire Department in Bremen, Mr. Dittman, certifies that Asbestos Cement Kuhlwein is by far the most efficient material known so far for fireproofing.

The Fire Marshal of San Francisco, Mr. Chas. Towe, states as follows:

"A short time ago you gave me a sample of Kuhlwein's Asbestos Cement. I mixed it with water and spread it on a sheet of paper, one-eighth of an inch thick, letting it dry over night only, I then placed it over a Primus oil stove which gives a great heat under an air pressure, it was over the fire for thirty minutes, and the paper which was on top of the Cement, was not discolored, it was long enough to satisfy me that it is the best fireproofing I ever saw or experimented with, and I hope it may be universally used as plaster on partitions, walls and ceilings, thus making a frame structure slow burning, confining a fire in the room in which it may start.

"As a covering for columns and iron girders, it would surely cause them to be fire resisting, keeping the heat and water from coming in contact with them in case of fire, thus causing them to stand and retain the heat they may be carrying and to a great extent insure the safety of the building from fire. It is a wonderful fire resisting Cement."

IN several recent issues of the *Engineering Record* the weak points in the New York building law are pointed out, and the subject illustrates very well how the growth of a city and the introduction of new methods may render many points in once adequate ordinances quite obsolete or insufficient. When the existing building laws were enacted, the system of conducting business buildings was altogether different from that now in use. The limit of height was five to six stories; light brick walls, timber columns and floors, and moderate loads were the rule; the moderate tall building, with its steel skeleton and deep foundations, was unknown, and any attempt to regulate the practice in modern building work by rules based upon the older conditions must necessarily be defective.

It is doubtless true that the modern great buildings of New York are well designed and properly built, not because the ordinances have required proper work, but because the engineers and architects in charge have attended to it on their own and their client's account. This, however, is not a good state of affairs, and should not be depended upon.

"Good architects, good engineers and good builders have in many cases done what the building ordinance has failed to require them to do; but that is not enough. Well-intentioned men are sometimes not well qualified to do those things which they may desire to do, and such things as indifferent and careless, not to say unscrupulous, building are not unknown."

Most of the criticisms of the building ordinance of New York are naturally made on the score of omission—a thing to be expected when the practice has outgrown the legislation—and a few of these defective features are worthy of mention. In the question of the quality of materials employed, vague terms, such as "the best material, made in the best manner," should be replaced by specific terms of precise, legal, and scientific meaning, about which no difference of opinion could exist. The methods of testing and describing materials of construction are well enough known to permit of accurate specification, and materials of lower grades could be clearly specified as permissible for those purposes for which they are fitted, and no hardship wrought and no danger incurred. The present law includes some attempts to use scientific formulas for certain limited purposes, but so indefinitely as to permit almost any proportions to be deduced.

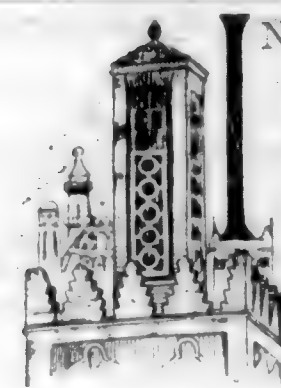
Working stresses permitted on iron, steel, masonry, timbers, etc., need careful revision and extension, in accordance with the advance of knowledge concerning the behavior of the materials and the changed conditions under which they are used. Some valuable materials, which are now practically excluded, because of the omission to provide load factors, should be included, and altogether a much broader scope for materials to be used is desirable, and, with proper provision for test requirements, would be perfectly safe.

These are but a few of the important points which have been advanced to show the weak points of the present antiquated law, and the urgent need for proper revision. That this revision should be made with the assistance and advice of competent engineering specialists is evident.

"The work of revision of the structural features of the building law should be put into the hands of a small committee of experts in structural matters whose broad experience in engineering and architecture, and whose character as reasonable men, would ensure a comprehensive, safe, and thorough treatment of every feature of the whole matter, so that a building law truly worthy of the greater New York would be secured."

THE NEW POODLE DOG RESTAURANT BUILDING.

WM. MOOSER & SON, ARCHITECTS.



IN THE past few years it has been the privilege of the CALIFORNIA ARCHITECT AND BUILDING NEWS to chronicle the erection of more buildings of the first class in San Francisco than in all the previous years in which this publication has been issued.

Each of these great structures have marked a distinctive advance upon its predecessor and denoted the friendly rivalry existing among architects and builders as to which should produce the most perfect example of architecture of to-day's methods. The property owner has been stimulated into greater expenditure

made of the famous Jösson cement, would have withstood the great additional pressure without a strain.

The foundation of a structure is a positive indication of the character of the building above it and the solidity and massiveness of those that support this lofty edifice, corresponds with the immovable and stable building that is built to endure for a hundred years to come.

Upon the shoulders of Mr. G. Moore rested the entire responsibility of building adequate foundations as well as the task of plastering the entire structure, a difficult undertaking as the results of all the art effects depends largely upon the smoothness and grain of the surface upon which they are to be placed. Experts pronounce the work of Mr. Moore in this structure as beyond criticism.

The style of the building is Italian Renaissance and is an almost perfect embodiment of this difficult school. The



A SUITE ON THE THIRD FLOOR.

and the result is that the streets of San Francisco have been highly improved in appearance and the city supplied with structures that have no superiors in any of the great mercantile centers of this country.

The latest edifice to which particular attention is called and in the construction of which the most advanced ideas have been embodied, combined with the utilization of all the arts capable of employment in the creation of a harmonious whole, is the conception of Wm. Mooser who is one of the rising local architects. It is the new building of the Poodle Dog restaurant, at the corner of Mason and Eddy streets, the final home of an institution which for thirty years, in less sumptuous quarters, has been the scene of many gastronomic triumphs of the past.

The lot upon which the new restaurant stands is 44x85 feet in dimensions. The foundations are of solid concrete laid so massively that no disturbance, however great, can have the slightest effect upon the stability of the lofty walls of the superstructure which surmounts them, indeed, so compact are they that if it had been desirable to double the present height of the building, these solid concrete foundations,

striking symmetry and exquisite proportions of the exterior are remarkable. Fortunately, the dimensions of the land available afforded ample space for a high structure and unlike many others, built upon narrow lots, the appearance of too great slenderness is entirely wanting here.

The beautiful simplicity and refinement of the exterior, adds, rather than detracts from the impression of dignity which at once strikes the studious observer.

This effect would not have been possible but for the judicious choice of material for the exterior which is of Roman brick and cream-colored terra cotta, supplied by N. Clark & Sons from their great pottery works in Alameda. The critic who advocates greater variety of color that may be judiciously employed as an effective adjunct of street architecture should carefully note the soft, warm tone imparted by the beautiful tint of the terra cotta covering in this instance. It is most pleasing to the outward senses but has a painful effect, by comparison on the neighboring structures.

It is without astonishment therefore to learn of the enormous increase in the employment of terra cotta for exterior adornment in all pretentious buildings. Its clear cut effects

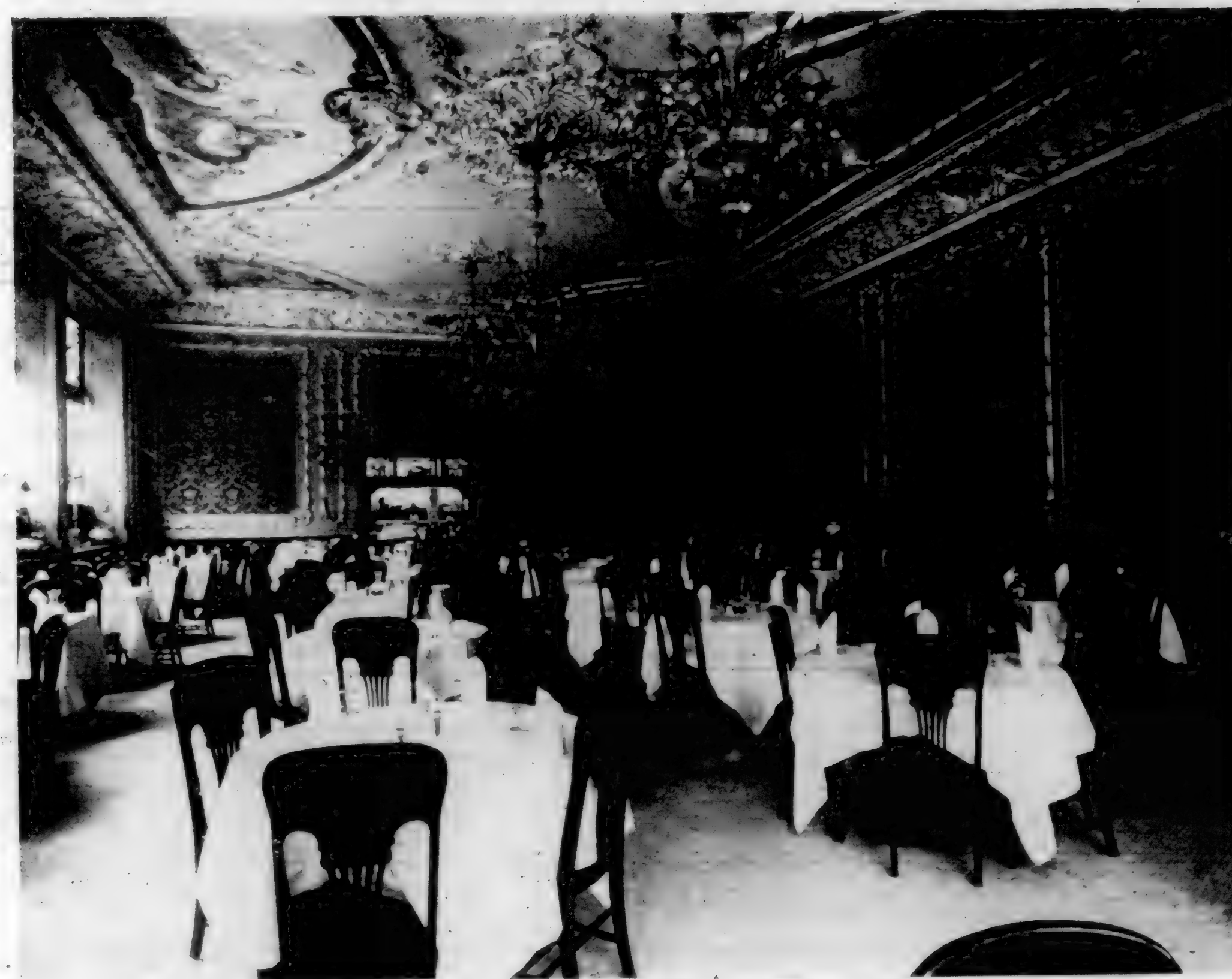


THE NEW POODLE DOG RESTAURANT—CORNER EDDY AND
MASON STREETS—SAN FRANCISCO—CAL.

WM. MOOSER & SON—ARCHITECTS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO

VOL. XIX No. 12. DECEMBER, 1898.



MAIN DINING ROOM.
WM. MOOSER & SON, ARCHITECTS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XIX, No. 12. DECEMBER, 1898.



RECEPTION ROOM, SECOND FLOOR.
WM. MOOSER & SON, ARCHITECTS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XIX, No. 12. DECEMBER, 1898.



PANEL IN CEILING OF VESTIBULE.

WM. MOOSER & SON, ARCHITECTS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO

VOL. XIX. No. 12 DECEMBER, 1898

and the admirable mouldings of this material; which are to be observed at all the salient points of the structure, are infinitely superior to the old fashioned and inaccurate stone carvings hitherto employed. Terra cotta mouldings are always exact duplicates. Each is as perfect as are all the others. The exquisite perfection of the terra cotta employed in this building is due as much to the fine mechanical devices which Messrs. Clark & Sons control, as to the superior quality of clay used which comes from Ione, a place among the foot hills of the Sacramento Valley.

The smoothness and finish of the outer walls of the new structure is to be credited to the superior workmanship of the contractor to whom was intrusted this important portion of the work Mr. D. J. Brennan.

Experts acknowledge that the walls of the new restaurant exhibit the most perfect specimen of brick laying to be found west of the Missouri River.

The building, like all others of its type, has an inner frame of steel around which the exterior walls of the structure arise. The solidity and endurance of the edifice is assured by the quality of the workmanship and material employed in the construction of this steel frame. Properly constructed such building is proof against earthquake, fire or decay. The Western Iron Works were awarded this part of the work and have fully justified their past reputation for conscientious fulfillment of all their undertakings by the superior manner in which the steel work, including fire escapes, of the building have been performed.

In this connection attention is particularly called to the efficient work of the Vulcan Iron Works which supplied the cast iron columns and other work of the same character and whose admirable and precise fulfillment of their obligations won the encomiums of the exacting architect.

Passing to the interior of the new building it is here proper to observe that no considerations of economy or contracted financial resources influenced or controlled, in the slightest, the choice of the work to be accomplished or which firms should perform it. In this matter the architect had a free hand. His instructions were "to have the best of everything" and this explains why so perfect and harmonious results were everywhere achieved.

The completed structure, as it now stands, is an object lesson for all prospective builders, either of mansion, public or ecclesiastical, on account of the absolute perfection in finish as well as the appropriate selection of every detail, usually considered as subordinate to the great general plan, but which goes so far towards arriving at artistic harmony and contributing so effectually to the comfort and satisfaction of the individual.

In any description of the newly erected great building in this city, the Western Expanded Metal and Fire Proofing Company is always remarked. The part in which this great corporation is deservedly prominent in all these great structures while not always apparent to the naked eye, is to apply their wonderful inventions in the plan of erecting an absolutely perfect structure and giving to the edifice that strength and durability combined with fire proof construction which is accomplished by a system of concrete arches and partitions and metal lathing. No great building is complete without the application of this company's principles of construction by which space is economised and perfect results attained.

The plaster used in the Poodle Dog building from banquet hall on the top floor to the basement below is that famous

brand known everywhere as the Alpine Plaster of which Smith & Young are the agents.

In referring to the workers who have so distinguished themselves on the new Poodle Dog building, Mr. J. P. Donovan, connected with the Western Expanded Metal and Fire Proofing Company in a responsible capacity should not be forgotten.

The artistic possibilities of steel, iron, copper and brass is conspicuous throughout and is lavishly displayed in every part of the building. The balustrades and grill work are exquisite in design and execution. The San Francisco Novelty Works are famous for their great accomplishments but they have never succeeded in so thoroughly establishing their fame, beyond any or all competition, as by the elegant and truly artistic work they have performed on this structure. Both exterior and interior is thus adorned. In the perfection of every detail this work is surprisingly complete.

A description of one of the eighteen suites into which the third, fourth and fifth floors are divided involves that of the



BATH ROOM ADJOINING EACH SUITE.

entire number. Each one is furnished in a different wood of its natural color, and each suite is furnished in royally lavish and elegant style, especially so in the appurtenances of the bath, every suite being provided on the most liberal scale with tubs, sitz and shower baths, closets, etc., and everything else that can contribute to comfort and cleanliness. The utmost care and research was expended in bringing this especial feature of the establishment to the highest degree of perfection and efficiency, and in the active competition for the distinction of furnishing so great a work as this the very finest apparatus and material of the country was represented. Messrs. George H. Tay & Co. were the fortunate ones, the perfection of their goods, their artistic design and their unapproachable quality was so well understood that other competitors were nowhere. The porcelain tubs and sitz baths are

models of elegance and convenience, and they are all fitted with the most perfect devices for easy and efficient management. Messrs. George H. Tay & Co., it must be understood, supplied from their fine establishment all plumbing goods used in the great building, and so satisfactory to all concerned as to win most enthusiastic encomiums. The perfection of the latest developments of sanitary science is here demonstrated.

It should be noticed also that all the water closets, of which an unusual number were required, are of the famous "Royal" brand of manufacture supplied by The John Douglass Co.

However perfect the appliances may be, in this important feature of all construction, they are of no avail unless worked by a master hand. The task of the plumber in this building was one of the most difficult ever undertaken, and required the exercise of the most scientific attainments. Besides being a work of uncommon magnitude it involved the application



BANQUET HALL.

of certain improvements designed for the attainment of absolute perfection. To Mr. Joseph Butler this task was given, and how magnificently he fulfilled his contract the work emphatically demonstrates. In this work, Mr. Butler has surpassed himself, though in hundreds of other instances he has proved how thoroughly competent in handling this branch of household science he is.

The bath rooms, which are all exhibitions of remarkable attainments in the art of plumbing, are distinguished also; and no one can enter one without being struck by the beauty of the wall tiling which, in each, cover fully one-half the surface and adds so much to the air of elegance, which is the distinguishing feature of this part of the work. Messrs. Mangrum & Otter had here a splendid opportunity of showing their fine capabilities in this class of workmanship, and thoroughly improved it. The building throughout exhibits fine examples of their consummate and conscientious skill.

Upon every floor, and prominent throughout the structure, marbles of varied hues have been freely employed. In the stairways, along the walls and in exposed places, the artistic effects have been heightened and elaborated by a full use of marble. The richness of the general appearance of the interior has been greatly enhanced thereby. Messrs. J. Musto & Son have reflected infinite credit upon themselves by their admirable work besides proving so effectually the great resources of their establishment.

To Mr. G. Orsi was intrusted the painting, decoration and polishing of the new Poodle Dog building, which had to be completed in a style in harmony with the balance of the work.

and required the highest professional skill in accomplishment. The careful workmanship and evident taste displayed by Mr. Orsi is greatly commended.

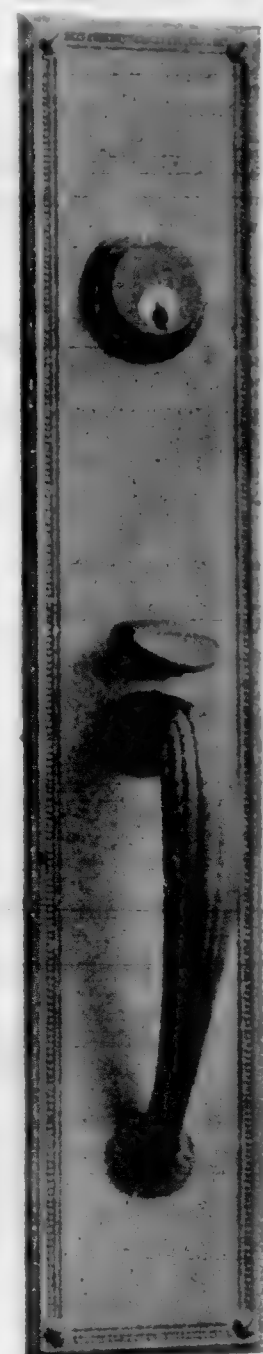
The artistic decoration of the establishment was placed in the capable hands of Moretti & Trezinni, the Italian fresco artists, who have demonstrated their high artistic instincts in the adornment of such edifices as St. Ignatius Church and others of equal importance in this city and elsewhere. In the Poodle Dog Building a fine opportunity was given these noted artists, and in the banquet halls of the upper story and the great restaurant on the lower floor, their felicity of design and fine execution showed to supreme advantage. The two allegorical groups in the restaurant are admirable in composition and color. They are the work of Henry Rascher, who was especially employed on account of his great artistic gifts. The composition on the ceiling in the vestibule of the ground stairway, at the street entrance, is the work of Mr. Moretti. It shows to especial advantage at night in the full glare of strong artificial light. It is a gem. The capacity of these gentlemen is displayed in the beautiful variety of the frescoes. Many patrons of the new restaurant will come often to look at the beautiful exhibits shown in the skilfully colored and groupings of the frescoes.

A building of such superior construction even though made absolutely fire proof cannot altogether dispense with the services of the carpenter. In this particular instance the presence of the master workmen are conspicuously manifest.

The wood work in this building is evidence of high artistic skill as well as splendid workmanship. When it is remembered that golden oak, curly birch, mahogany, maple woods were employed in the finishing of the costly suites in turn as well as in the great dining room of the first floor and the banquetting hall on the sixth, the services of highly competent workers in wood was extremely necessary, how Messrs. Campbell & Pettus have fulfilled their part of an arduous undertaking let their work speak for itself. The execution of the beautiful suites, each in a different kind of wood and rich in carving, testifies abundantly to their taste and skill.

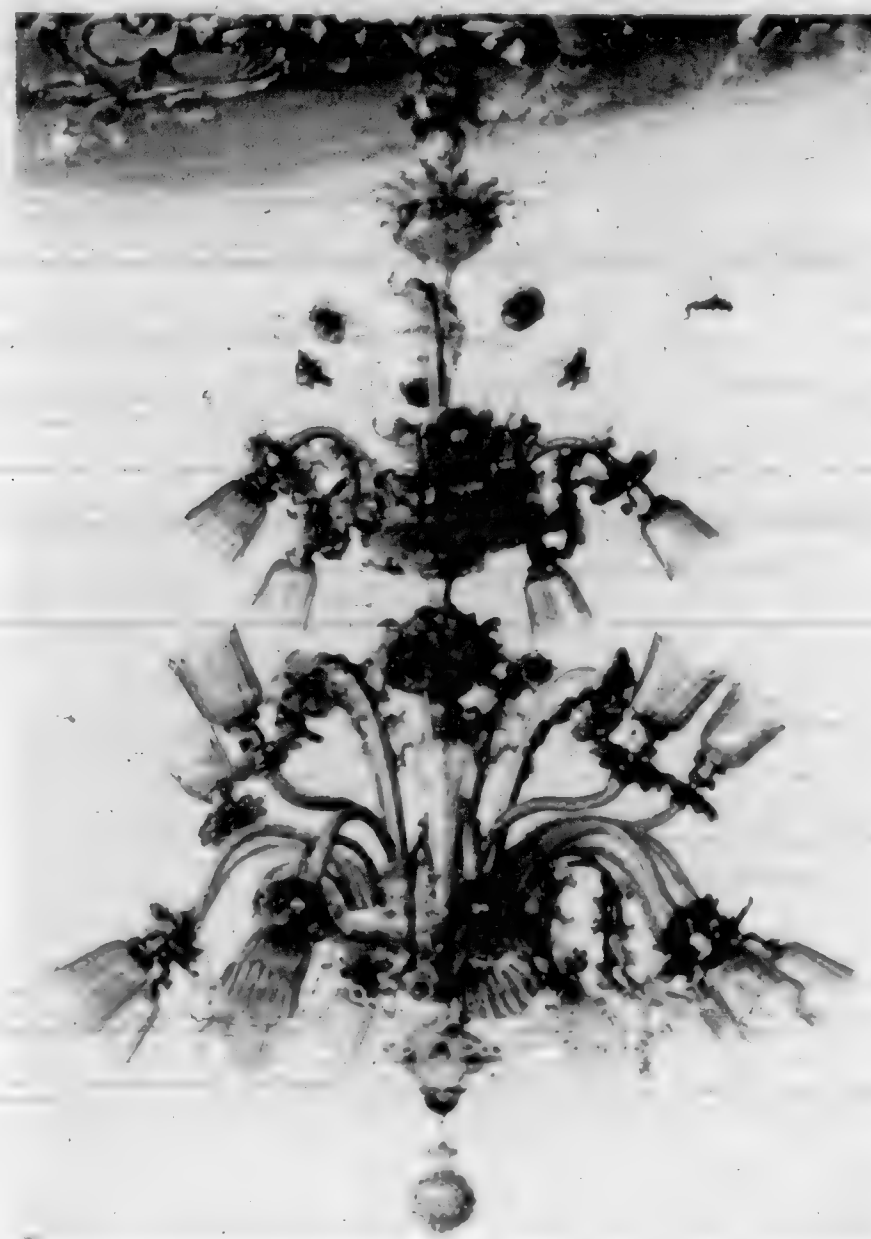
The perfection of detail displayed throughout the building is apparent to the most careless observer. In one respect, and in many others as well, the careful attention shown in the attention paid to minor matters has a very considerable influence upon the general effect as intended. No one who enters the building can fail to give his attention to the perfection and beauty displayed in the locks and door handles which were made expressly for the Poodle Dog by the Yale & Towne Manufacturing Company in special Fairfax designs, through Messrs. Dunham Carrigan & Hayden Company of this city. The locks in the main vestibule and the large restaurant are sure to be greatly admired and commented upon. They are of the Fairfax design in oxidized silver.

A particular feature of the main dining room on the first floor is the great chandelier in the center of the ceiling and the two smaller ones that flank it on either side, altogether the most beautiful examples of Venetian glass work on the



Design of Handles on Entrance Door.

coast. They are of light ruby in tint and blown in shapes of calla lilies and cactus flowers with the foliage of each, all



CENTER CHANDELIER IN MAIN DINING ROOM.

connected in serpentine branches. They are the importation of C. F. Kinsman of this city, imported under special designs from Vienna.

A word should be spoken for the tasteful, complete and lavish furniture, not only of the suites but of the reception hall, private dining rooms and also those designed more particularly for the general public. It was a difficult task to furnish so extensive an establishment in such perfect harmony and style but the California Furniture Company triumphantly fulfilled all requirements.

The department upon which the success of a great restaurant depends is often inconspicuous to the public gaze and sacred from intrusion to any one except cooks and waiters. The fitting up of the culinary department was done by the firm of John G. Iils & Co., and shows beyond doubt the capacity of that firm for such work. The great range on the first floor has capacity for 400 persons while the one adjacent to the great banquet hall is but little inferior in size. One special feature of the larger range is the arrangement for carrying the fumes and smoke from below instead of from above. A very great success.

The very handsome and roomy elevator is from the manufactory of Cahill & Hall and is a model of handsome design; every appliance for safety has been attached.

The care for the safety of those guests who are likely to fill the establishment at all times is evidenced by numerous reels for fire hose to be used in cases of extreme emergency. These hose reels are a special

feature, furnished by R. S. Chapman and though the structure is fireproof they could not be dispensed with here.

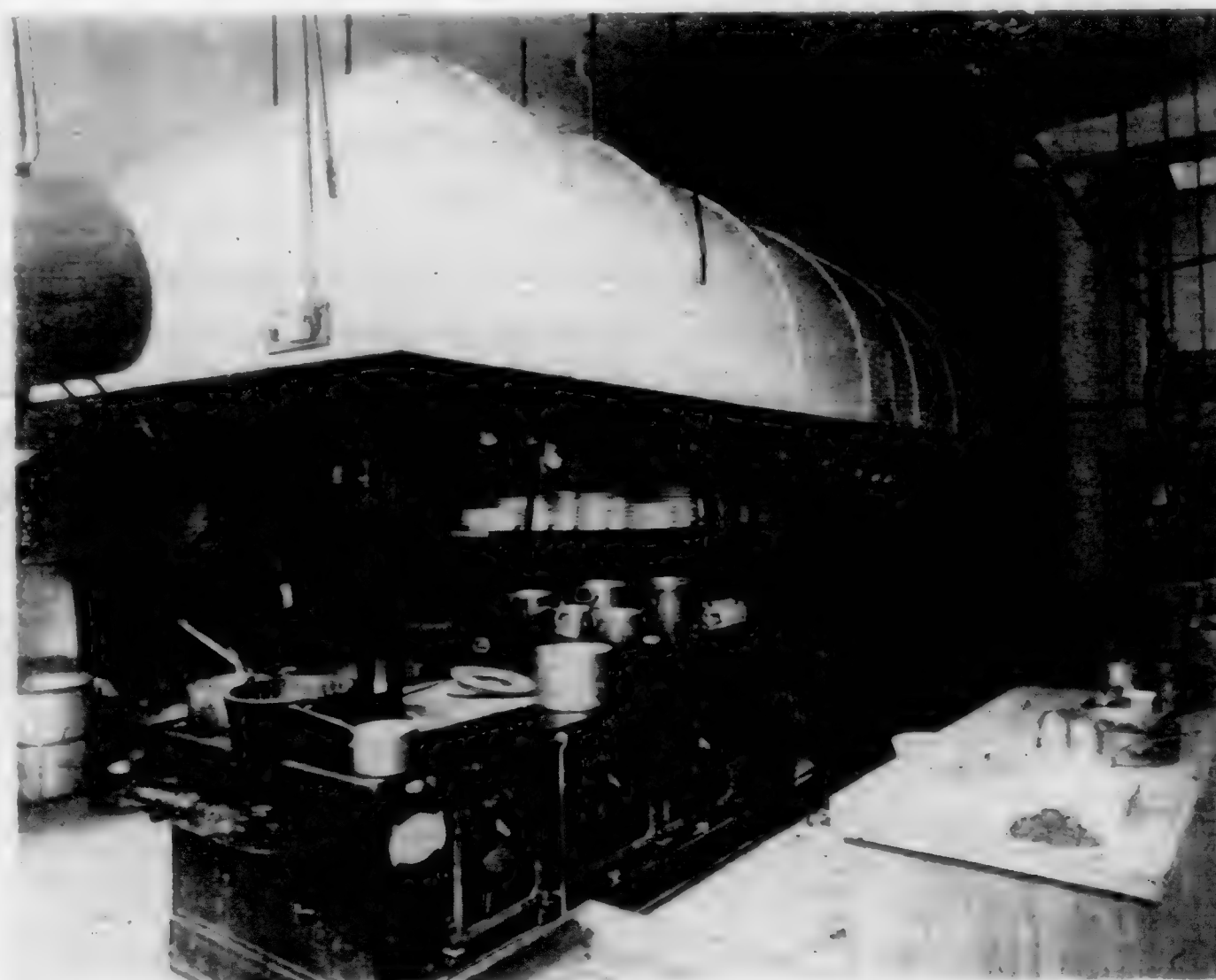
The determination that every detail of this building should be absolutely perfect is evidenced by the introduction into every grate and chimney of the Clawson patent hoods and cross-bars, without which no chimney is complete, which were supplied by L. E. Clawson & Co. These devices are potent in assuring a perfect chimney and unobstructed draft; moreover, whenever employed, no workman, however careless he may be, can possibly construct an imperfect flue. All the best buildings in the city have introduced these valuable patents with most satisfactory results.

The final word in this eulogistic description of the last great building erected in San Francisco is in commendation of the fabrics of the Paraffine Paint Company who furnished the roofing and other required material that is to assure this great building protection from moisture. The architect speaks of this company in enthusiastic terms.

HYDRAULIC MORTAR.

CEMENT and mortar tests have been so extensively made and discussed that the subject may seem almost exhausted, but the value of such tests depends so much upon the manner in which they are conducted and investigated that a study as scientific as that made by M. Feret, the head of the laboratory of the *Ponts et Chaussées* at Boulogne, and published in the *Bulletin de la Société d'Encouragement* demands recognition.

M. Feret first describes and tabulates the extensive series of tests for resistance to tension, compression, piercing, and shearing which were made in the laboratory under his charge, the same Portland cement being used in all cases, in connection with various kinds of natural and artificial sands, the intention being to investigate rather the physical properties of various mixtures than the comparative merits of different cements. The results are given in tabular form, and also plotted in curves, showing graphically the general



KITCHEN RANGE.

behavior of the materials, after which the effect of variations in a series of test samples is discussed.

Attention is called to the fact that widely different results may be obtained from the same material, according to the manner in which the tests are made, and emphasis is strongly laid upon the point that tests are not comparable unless they have been made in the same manner.

In tests for flexure, for instance, the size of the specimen is of great importance, since the distance of the outer and more resistant portion from the neutral axis has a great influence upon the result, and in general the greatest resistance of any specimen is found in that portion nearest the exterior. An unequal distribution of stresses must, therefore, appear in tension tests as well as in those for flexure, and this inequality is still greater when the mixture is not perfectly homogeneous.

According to the theory of resistance of materials, tests by flexure and by tension should lead to the same ultimate strength, but deductions based upon materials of supposedly perfect elasticity do not hold good for mortars, especially as the point of rupture is approached. M. Durand-Claye has shown that the resistance deduced from flexure tests is almost double that obtained from direct tension, and the tests of M. Feret bear out the fact that there is a definite ratio between the two resistances—namely, the resistance by flexure is to that by tension as 1.89 to 1, or, in round numbers, as 2 to 1.

Similar relations were deduced between the resistance to compression and to shearing and punching, a constant and proportional ratio being found. There does not appear, however, to be any such proportionality existing between the results obtained by tension and by compression tests, and two different mortars having the same resistance under compression may show very different results in tension. As a result of much experience deduced from many tests, M. Feret states that he believes the test by compression gives the real measure of the coherence of a mortar more nearly than does a tension test. In all cases the compression tests gave more uniform and consistent results, both for large and small specimens and for various conditions of homogeneity.

The most important part of M. Feret's paper, however, is that relating to the physical constitution of a hydraulic mortar, especially with regard to the size of ultimate particles of the materials employed, and to the thoroughness of the admixture.

For a very fine sand the resistance to crushing is much greater than for a coarse sand, the proportion of sand to cement being the same in both cases. A tabulated series of tests, using a constant quantity of cement and sand, but with different proportions of fine and coarse sand, showed that the resistance to compression was two and one-half times greater with fine sand than with coarse, and corresponding variations appeared with the other mixtures.

An approximate measure of the nature of a mortar in this respect may be obtained by determining the density, or, as M. Feret calls it, the "compactness," of the mixture, since this bears a relation to the proportion of voids between the particles, which doubtless plays an important part in the strength of the mortar. In plotting the results of the tests made with sands of various degrees of fineness, M. Feret uses the ingenious form of triangular pyramid adopted by Professor Thurston in his investigation of the strength of various bronzes, and in this manner the results are shown with a clearness not otherwise possible. Similar diagrams are given for mixtures of sand, cement, and pulverized slag, and the paper closes with data as to the effect of the addition of a proportion of puzzolana to cement and sand, especially for hydraulic mortars which are to be exposed to the action of sea-water. *The Engineering News.*

PRECOCIOUS ARCHITECTS.

THE time may have been once when success in architectural design was a matter of accident, or when those to whom the creation of great buildings was entrusted could depend upon their instincts and the inspiration of the Muses; but we have changed all that with our modern civilization,

and if there is any one profession of to-day that requires long and arduous preparation, it is that of the architect. Constant, unremitting study is the only safe program for the man who would take rank. It has been our editorial privilege to be called upon repeatedly for advice to those who contemplate becoming architects. The usual rule is to find the young man eager to enter an office, anxious to begin actual work, looking forward to immediate worlds of conquest. Even when a kindly restraining influence has harnessed him into the routine of one of our best technical schools, his impulse after graduation is still to build, to hang out his shingle, to get to work, and the idea seems to be that if by some mental *tour de force* he can compress into three years the amount of study that is laid out for five or six, it is well worth the effort. The difference between this point of view and the principle which seems to actuate the French students of architecture goes, perhaps, a considerable way towards explaining the manifest superiority of the French school in its methods. With us the aim is to complete the studies as speedily as possible and start to work. With them it is not in how little time can education be acquired, but rather how many years can the student devote to preliminary training. It is often discouraging to the aspirant, who has, perhaps, come from the Institute flushed with his diplomatic honors, to be told to take a humble seat and keep on studying for five or six years more before he allows his kind friends to give him a job, but all experience shows that our young men are apt to start too soon rather than to delay too long, and that, other things being equal, the man who hangs out his sign and begins his professional career with the greatest amount of experience behind him will have the richest measure of true success. The secret of success in any profession, in these days, is not inspiration, not native talent, nor even that *sine qua non* of the architect, good and complacent friends, but thorough preparation and unlimited, hard dig.—*The Brickbuilder.*

TRADE NOTE

BECAUSE of the excessive storm in this locality the roof of our brass and copper rolling mill caved in on Sunday morning, November 27, on account of which we have been somewhat delayed in filling orders for this class of material during the past week.

We have finished removing the debris of the wreck and have erected temporary constructions over the machinery, and the brass mill will be in full running order December 3, when we will have all the rolls running in this department, and will be able to furnish sheet brass to all of our customers promptly.

The entire brass and copper mill will be in full operation December 12. No damage or interruption occurred in any other department of the works, and the seamless tube, brazed tube, kettle and boiler plants were in full operation Monday morning November 28 as usual. The damage to the machinery was very small, less than \$1000 and the cost of replacing the roof with a permanent and substantial wooden roof will not exceed \$6000, or if an iron roof is used will not exceed \$12,000, which expenditure will put the mill in better condition than before the accident. Very respectfully,

RANDOLPH & CLOWES.

SOME POINTS ON ESTIMATING.

IT IS the close figures that makes the most reliable estimate, and where contracts generally prove satisfactory all round. Every inch of material and every minute of time should be counted, and the figures should always avoid that dangerous risk "that's near enough." There is no such thing in successful estimating as "near enough." "Exactly right" is what is required, then you know what you are doing. Remember always, that it costs more to do the same work in an upper story than it does in a lower one. Doors,

same size, equal finish, same time, and furnished with same style of hardware, cost from one to three per cent more to finish when in an upper story. The higher up, the higher the cost, and what is true of doors is also true of every other kind of work. It is utterly impossible to tell the exact cost of one part of a building by comparing it with the cost of a similar piece of work. You may get near it, but you should not be satisfied with that. It pays the estimator to estimate on everything and to be exact in every estimate. Avoid accepting figures that are not your own, and, above all, put no trust in estimates of cost as given in architectural books and journals, unless such estimates are itemized and you have gone over the figures yourself. Many a young builder has lost his reputation—and his money—by taking it for granted that a certain house, illustrated, can be finished complete for the sum stated in book or journal. These are traps and snares for the unwary—avoid them. Estimates obtained from an architect's office are generally correct so far as quantities are concerned, but are generally woefully lacking in the time, labor and prices. There are so many things the architect wots not of, such as scaffolding, handling material, and other things, that render his figures doubtful, that it is always better to make your own. It is just as bad to overdo an estimate as to underdo it, for in one case you lose your work and in the other your money, and in these days of close—yea, savage—competition, it is the man who figures everything, and figures exact, that takes the work. If you cannot estimate with confidence in your own ability, or have no trusted workman who can estimate, you had better let "contracting" alone, or you will find yourself in deep water before you are aware of it.—*The Canadian Architect.*

LESSONS FROM FIRE AND PANIC.

UT THESE are matters in which we must expect no help or sympathy from the persons whose lives are thus safeguarded. Twenty years ago the densely crowded church of which I was the people's warden had outer doors opening inwards, and with the support of the vicar I insisted on an internal lobby with doors opening outwards. We did this in spite of unanimous opposition and as no panic has occurred the opponents may say they were in the right.

A few years ago a thoughtful architect provided to the west end of a church the only efficient arrangement of exit doors that I have seen, but fitted them with a lock. I went to the opening service to see the result. The place was full, even to standing room, and when the procession from the choir turned to come down the centre passage they could not advance a step. Then, if ever, was the time to throw open the exit doors, but the key was in the vicar's pocket, and he could not be reached except by means that would have been impracticable, and with delay that would have been fatal in case of a panic.

I think it probable that we may not again hear of the fitting up of one of our great churches for some important function with a forest of timber, in stages and seats and

galleries, so that either through accident or through malice, a fire may be raised which might result in a calamity even greater than any that has hitherto been known. At the induction of the Dean of Canterbury, when a great crowd was expected, those in charge of the Cathedral were properly careful, and limited the admissions to those who could be accommodated with a reasonable chance of safety to themselves.

Our theatre regulations are made under the Metropolis Management Amendment Act, 1878, and have been much strengthened in recent years, largely through the advice of Sir E. M. Shaw, K. C. B., formerly the chief owner of the Metropolitan Fire Brigade, while the application of the regulations has become more stringent as their necessity has been more generally appreciated. They are applicable to all places where the public are invited, for music or dancing or stage plays, whether on payment, or by ticket or free. I can only mention a few of the things which must now be done in the case of a newly-licensed building, and which are demanded so far as is reasonable and practicable in the case of an old building. As to the latter there is an appeal to the arbitrator.

I am not sure that many theatre architects entirely approve every one of our regulations, but some approve certain of them and others probably approve the rest, for whereas a few years ago not many plans were submitted that would bear examination, there is now a large and increasing number of architects who, so far as their clients will permit them, produce excellent plans and heartily concur in our regulations as a whole. And as to clients, all the more experienced managers are alive to the risks of their undertakings, and very large sums have been willingly spent by them in the improvement of old buildings. Manchester has taken a good lead in theatre architecture. At the present time, when new theatres are being built in all our London suburbs, and even in small provincial towns, no class of buildings is better understood.

In London the site for a new theatre or music-hall must abut for one-half of the boundary upon public thoroughfares, one of which must be not less than forty feet wide. This is exactly one half of the requirement as to site in most continental cities, where, as in Manchester, the theatre must be entirely isolated. But our own moderate demand may be relaxed if the building is of small importance or if the design or surroundings seem to warrant it. We are now actually getting isolated theatres, whereas a few years ago there was not one in London. Not many years ago the owner of a site intended for a theatre would insist on devoting the best portion of his frontage to shops. If the site consisted chiefly of back land, the owner would consider it particularly eligible for a theatre. Of such a site I once said to the proposer, "Surely nature intended this for a coal yard," but he was careful to correct me—it had really been a timber yard.

Our regulations provide for the separation of dressing-rooms, and such sources of danger as workshops, stores, painting-rooms, property-rooms, scene-docks, engine-rooms, and gas meter rooms, and regulate the supply of gas, electric light, lime, light and water. They require a fire-resisting curtain and a high roof with lantern light over the stage. The mischief of window opening near adjacent property is sometimes imperfectly guarded against by protecting them with hoppers. Recently a fire was caused in a music-hall by an old accumulation of rubbish carried by the wind into one such hopper and fired by burning soot from a neighboring chimney. Our great difficulties arise out of staircases, corridors, and exits.

People who talk of clearing a theatre in two or three minutes fail to realize the suddenness with which smoke and poisonous vapors spread, nor do they appreciate the effect of a panic, which may prevent an audience getting out at all. If a fire breaks out among the scenery the whole is at light at once; the vapours make for the upper parts of the auditorium; and the people die where they sit. In the great theatre fires it has been estimated that all the victims died from suffocation within five minutes. These are matters which can be reckoned with, hence the provision of "fire-proof" curtains and high roofs over the stage. But no one can reckon with panic. It needs no fire or other danger. It is a madness to escape from no one knows what. The exits from a public place must allow for panic as well as for fire. Two exits, well-lighted by some independent means, must be provided from every part of the building, and as one may be blocked, each must be capable of taking the whole of that part of the audience. They should deliver into different streets. One of these, which will also be an entrance, may be connected with a vestibule that is common to three entrances, and the doorways of this vestibule must be one-third wider than the combined widths of these three separate entrances. The least width for an exit is four feet six inches in the clear. Too frequently I find that the exits are actually made of this dimension between the brick-work, so that after deducting the thickness of doors and projecting handles only three feet four inches is left. I consider it unfair to expect one to overlook such mistakes in so important a matter.

All exit doors having fastenings must be fitted with bolts yielding to pressure from within. This necessary regulation gives rise to great difficulty. A manager will suspect that persons get access through these exit doors, and also that his servants get out at improper times. In view of the importance of this point, and the impossibility of securing by any system of inspection the opening every night of a door that has locks and bolts, it may be hoped that there is mechanical ingenuity enough to get over any such objection as I have indicated.

The impossibility of getting the employees about a public place to understand that exit doors and passages are meant to be at all times free and well lighted may be illustrated from experience. The first new theatre that was opened in my time had been rebuilt after a fire, and the proprietor, confident in his arrangements, invited my inspection on the opening night. I found the exits without lights and their doors blocked by the debris thrown out of the building at the last moment. In another case a few years ago the architect had provided admirable exits, but insisted on fitting the doors with locks. In the middle of the first performance I found every door locked and the key at the box office, to be used I was told if required. In a third case, when everything had been found in order, a final visit an hour before the opening disclosed that handsome fixed grills were being put to every exit door, only to be removed in case of need. We have found exit passages turned into lumber rooms, or obstructed by spare tables, by chairs intended for extra and illegal seats in the gangways, by perambulators, and by bicycles. In one case the exit was the home of a savage dog. The architect must never depend on the care with which his building will be managed, and in spite of good intentions the accumulation of spare scenery belonging to pieces that have been taken off or are coming on, and the storing of rubbish, is always a danger. In important continental theatres a separate warehouse is provided as near as possible

to, but detached from, the building, and there all scenery and properties not actually in use are kept.

And with respect to this last consideration, experience teaches that in cases of sudden danger no audience, no crowd in a house or factory, and indeed no individual, can be trusted to take the obviously reasonable course to prevent accident or to get to a place of safety. Their escape must be ensured for them by the provision of unobstructed exits that are used habitually, that are as short as possible, and that will take a crowd of people as fast as they can get away. Thus the planning of a building in relation to its exits is often of even more importance than its materials or the question of its site and surroundings, which last is a question often beyond the architect's control. I have advised a theatre architect to begin by laying down on his plan eight staircases and ten or twelve exit doors, and then see whether he had room left for a stage and auditorium. This is more reasonable than planning first these last-named parts and then using up any spare corners for scanty and inconvenient stairs and passages.

There is no class of public building so risky as the parochial or mission hall or club room which exists for purposes of instruction or social recreation. The licensees of such places are very often too inexperienced to feel any sense of responsibility, and the amateurs who usually manage such matters have no sense of danger. Having consented to preside at an amateur charity performance when the stage had been fitted up by the company, I found the footlights to consist of a row of dwarf candles, each being simply struck down on a penny piece. During the play one of the canvas wings fell upon these footlights.

Unwarned by the Paris disaster, bazaars are got up regardless of the danger from stalls heaped up with flimsy materials and lighted up by Japanese lanterns, without any special means of fire extinction and with indifferent means of escape. In a particularly bad case, while the chairman of the committee was arguing against the possibility of accident, a lantern took fire and fell. No more than this is necessary to produce the worst of those accidents which such premises may be said to invite, and the contents of only one stall would have sufficed.

In view of the wide range of this Paper and the familiarity of this audience with the details of construction, I have for the most part been content to suggest principles upon which we ought to act. And on account of the importance of these questions in relation to the safety of life, I trust we shall agree that there is a moral duty in every one charged with the erection or care of a building to make it as secure against fire and panic as he can. I confess to some feeling approaching pain when an architect, assuming something like the position of a legal advocate, endeavors to argue that provisions made by law for the safety of life and property mean less than they are commonly supposed to mean, or struggles to get some relaxation of the law which, perhaps unfortunately, the public authority has power to grant. Every relaxation beyond what a prudent man would consider safe is in the nature of a wager that nothing shall happen during the whole time that the building will be in existence which will call for the particular precaution which on the responsible advice of the architect has been injudiciously omitted. It may be that the wager will be won, but the risk is considerable and always there; and this is a consideration which I desire to impress most strongly upon those who are charged with such responsibilities as I have mentioned.

THE END.

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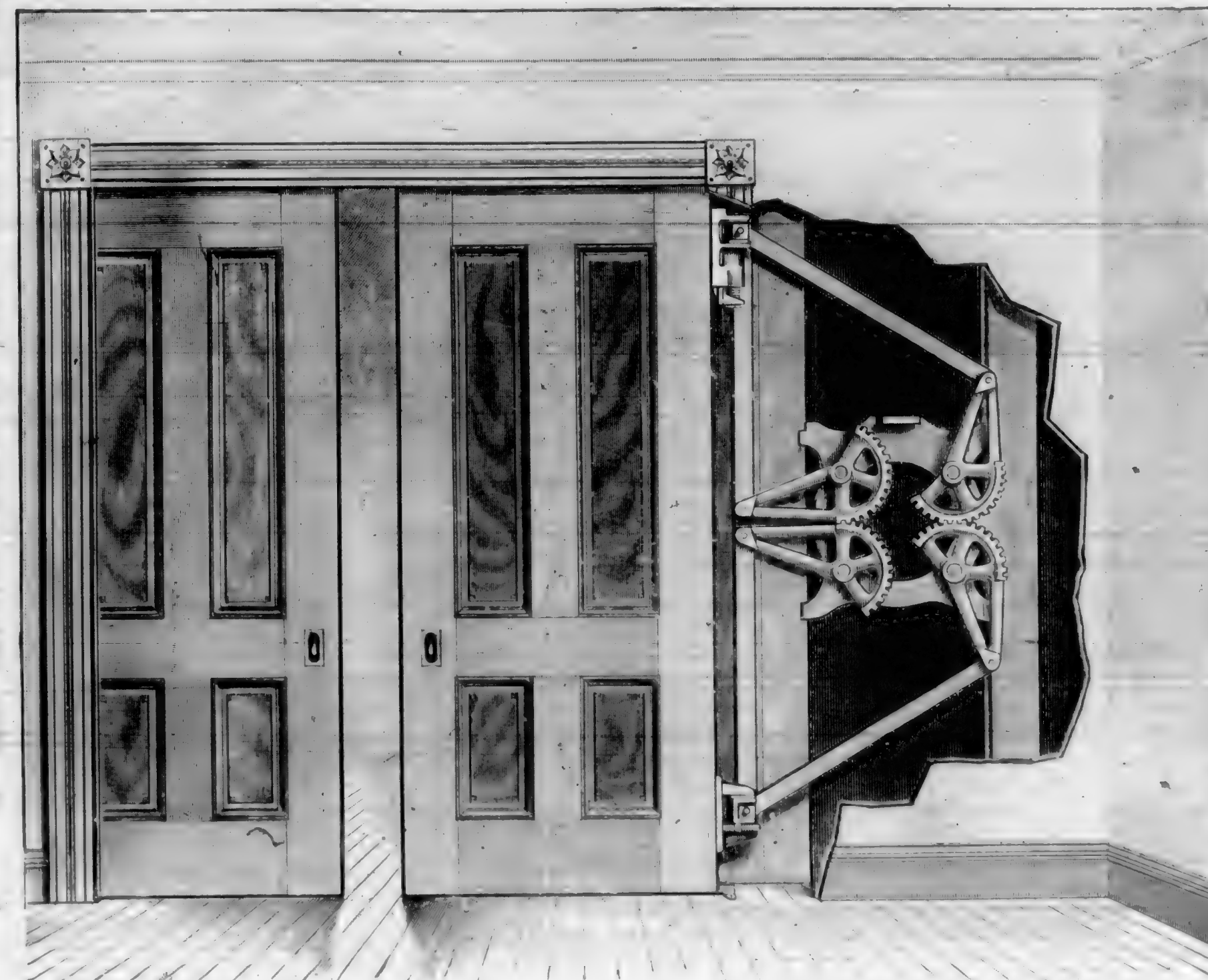
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Fifteenth Avenue east 21st. To build: o. Agnes and James Brown; o. Anderson & Stockholm. Signed, Sept. 25; filed, Oct. 3; cost \$1250.

ERETVALE

Fruitvale Alta 19th. To build: o. Laura A. Cowan; o. A. B. Bennett; o. Henry Babin. Signed, Nov. 7; filed, Dec. 15; cost \$1150.

OAKLAND

Eighteenth St. To build: o. George H. Garrett; a. W. H. Bursan. Signed, Dec. 15; cost \$2500.

Oakland view home-lead association. To build: o. J. J. Stewart; a. A. W. Smith; o. C. S. Barnard. Signed, Dec. 2; filed, Dec. 12; cost \$3000.

Twelfth St. No. 1225. Alteration and addition: o. L. J. J. and J. W. Nelson; a. A. W. Smith; o. Anderson & Stockholm. Signed, Sept. 23; filed, Oct. 3; cost \$2000.

Nose Ave. near Broadway. Maternity cottage: o. Fabiola Hospital Assn.; a. D. F. Oliver; o. Mohr & S. J. J. Signed, Nov. 26; filed, Dec. 29; cost \$1200.

Sixteenth and Myrtle. To build: o. Corrie L. Booth; a. P. H. Barnes. Signed, Dec. 12; filed, Dec. 13; cost \$2300.

Westgate near Durant. To build: o. S. R. Scaphum; a. William Kirk; o. Eber & Libbey. Signed, Dec. 13; filed, Dec. 15; cost \$1200.

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Lot 3, block 8, Townsite. Heating, ventilating, etc.: o. Board of Education; a. Cunningham Bros; o. Morgan Bros. Signed, Nov. 18; filed, Nov. 29; cost \$3000.

Margaretta. Club House: o. San Rafael Golf Club; a. Newson & Meyer; o. Jensen & Schlosser. Signed, Dec. 2; filed, Dec. 8; cost \$2000.

Lot 3, block 8, Townsite. School building: o. Board of Education; a. Cunningham Bros; o. Thos. O'Connor. Signed, Nov. 18; cost \$10,143.

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Architect Geo. H. Wyman has prepared plans and is now taking bids for the estate of M. Mueller, for a two-story and basement business building which will connect with the present building on the north west corner of Fifth and Broadway. The outer dimensions are 40x100 feet. The front elevation will be laid up in Sycamore stone. The first floor is designed for the use of the Los Angeles Electric Company and the second floor for apartments. The inside finish will be in Oregon pine. A cement floor will be laid in the basement.

The same architect has prepared plans for the scaffolding, for an additional story to the hospital building 60x100 feet, to be used as nurses' quarters also for a two-story frame building 64.8 feet to be used as a bakery; the bids for which will be opened to day.

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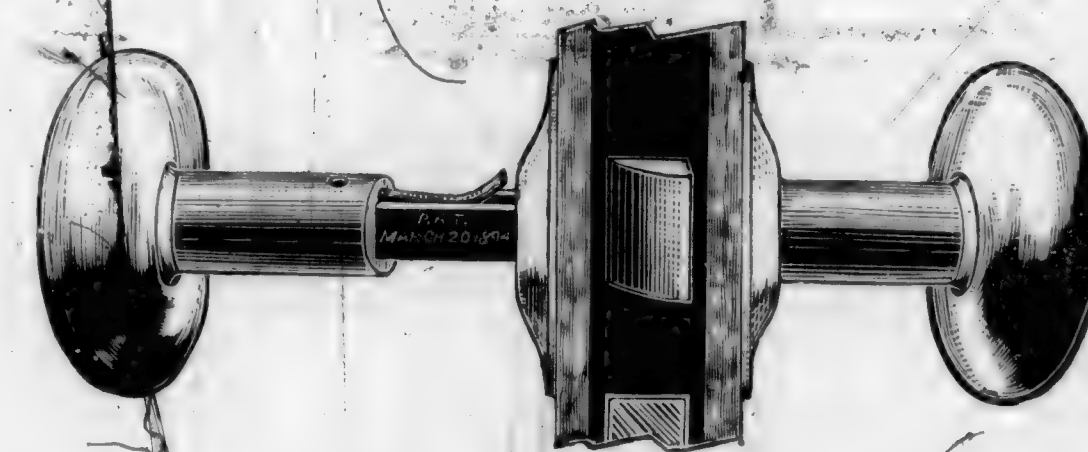
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VOL. XIX

INDEX.

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INDEX TO CONTENTS.

Advertisers Index.....	VI	Iron Shutters.....	68
An Electrical Inspector Wanted.....	6	January Building.....	18
An Explanation that Explains.....	50	Lesson From Fire and Panic.....	89, 90, 104, 105, 106, 114
An Office Building with Features of Construction and Sub-Construction Work that Involve Special Design and Arrangement.....	67	Modern Appliances in Quarries.....	32
Another Building Disaster.....	80	Meeting of the Builders' Exchange.....	102, 103
Asbestos Cement for Fireproofing.....	113	Members of the Architectural Studio Hard at Work.....	124
Books and Periodicals.....	8, 20, 46, 115	More Residence Space.....	135
Business Mosaics.....	9	Notice of Meetings.....	9, 93, 117
Birmingham's Building Curiosity.....	71	Natural Building Stones of the Pacific Slope (Granite).....	16
Building Notes.....	116	New York Building Laws.....	137
Burnt Wood in Decoration.....	29	Obituary.....	28
Convention of Sanitary Scientists.....	7	On the Saline Efflorescence of Bricks.....	78
Correspondence.....	17, 18, 32, 54, 80, 81	Our Foreign Visitors.....	106, 107
Color in Street Architecture.....	123	Programmes for the International Competition for the University Buildings.....	9
Comparative Building.....	19	Pressure Wanted From the Board of Fire Underwriters of the Pacific.....	62
Carrick's System of Fireproof Construction.....	47	Painting Iron Work.....	91
Changing Form of Stone by Pressure.....	64, 65, 66, 67, 76	Proposed New Constitution for A. I. A.....	114
Cabots Shingle Stains.....	77	Paint as a Protection From Rust.....	117
Depopulation of San Francisco.....	110	Pure Water in Cities.....	118
Destruction of the Baldwin.....	122	Passing of the Old Buildings.....	122
Dr. Bazet's Microbe Hatchery.....	122	Protection of Iron and Steel Against Fire.....	136
Electricity in Modern Buildings.....	46	Precocious Architects.....	142
Experiments on the Behavior of Cast Iron Columns in Fire.....	93	Semi-Annual Summary of Building Operations.....	8
Extending the Fire Limits.....	111	Slow Burning Construction.....	44
Engineers for Fire Protection.....	112	Southern Union Station at Boston.....	44
Fireproofing Concrete Floor Construction.....	4	Stone.....	51
Wells, Fargo & Co's New Building.....	4	Simple Method of Making Decorative Brick.....	55
Fireproof Buildings and Low Insurance Rates.....	50	Some Points on Estimating.....	142
Fireproofing.....	69	Test of Metal Lathing.....	3
For Steel Construction.....	82	The Enforcement of Building Laws.....	4
From Fort Point to the Cliff.....	134	The Vacaville Union High School.....	10
Gesso Work.....	75	The Worlds Artists Invited to Compete.....	11
Good Locks.....	82	The Electrical Wiring of Buildings.....	14
High School Competition, Fullerton, Cal.....	28	The Folly of Price Cutting.....	21
How Two Wealthy Citizens Became Experts in Timber Physics.....	41, 42	The Use of Sculpture in Architecture.....	21
Hollow Tile Fireproofing in the Park Row Syndicate Building.....	52	The Best Fire Proof Construction for Buildings Occupied for Mercantile Purposes.....	22, 23, 24, 35, 36, 47, 48
Hertz' Experiments on the Electro-Magnetic Theory of Light.....	62, 63	The Lytle Fire Place Heater.....	24
Hotel Green, Pasadena.....	128, 129	The Electrical Wiring of Buildings.....	31
Hydraulic Mortar.....	141	The California University Competition.....	33
Index to Advertisers.....	VI	The Use of Stone in Skeleton Construction.....	43
Iron Door Shutters.....	55	The Steel Skeleton in High Office Buildings Given its Initial Earthquake Test.....	38, 39
		Trans-Mississippi and International Exposition.....	58, 59
		The U. S. Supervising Architect's Advertisement for Proposals for Steel Work.....	xxiv
		The Keely Motor Up-To-Date.....	72, 83, 84, 94, 95, 96
			107, 108, 120

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

The Critic and the Architect.....	74
The Action of Sea Water on Hydraulic Cements.....	70, 80
.....	86
The Survival of the Fittest.....	82
The Use of Sheet Iron and Steel.....	88
Tests of Cast Iron Columns.....	89
The Protection of Iron From Rust.....	92
The New Columbarium of Odd Fellows Cemetery As- sociation of San Francisco.....	99, 100
The Beginning of a New Era.....	110
The Hearst International Competition.....	111
The Acoustics of Trinity Church.....	124
Thirty-Second Annual Convention of the American In- stitute of Architects.....	124, 125, 126, 127
Trade Notes.....	142
The Coming of the New School.....	135
The New Poodle Dog Restaurant Building.....	138, 139, 140
Valuable Information Culled from Our Exchanges.....	57
.....	68, 69, 78, 79, 91, 92,
Who is to Blame—And How Great is the Risk?.....	3

ILLUSTRATION.

Numbers refer to number of Journal.

DWELLINGS

Residence for Alex. Young, Oakland, Cal., Architects Percy & Hamilton.....	3
A Spanish Hacienda, D. J. Patterson, Del.....	2
Residence for Mr. F. W. Voegt, Alameda, Cal., Archi- tect B. E. Remmel.....	4
Apartment House, cor. Geary and Jones, Architect C. A. Meussdorffer.....	5
Residence for Mr. J. H. Simpson, Oakland, Architect A. W. Smith.....	5
Residence of G. A. Rosenberg, Alameda, Cal., Architect Maxwell G. Bugbee.....	6
Cottage for Mr. M. D. Hall, Palo Alto, Architects, W. J. Cuthbertson and E. A. Williams.....	7
The Hotel Nevils, Jamestown, Cal., Architect Geo. Rushforth, Stockton, Cal.....	8
Flats for Mr. J. R. Aitken, Steiner street, Architect Maxwell G. Bugbee.....	10
Residence for Mr. A. Nowell, East Oakland, Cal., Archi- tects, Havens & Toepke.....	10
Residence for Mr. H. Huddleston, Washington and Spruce streets, San Francisco, Architects Percy & Hamilton.....	10
Flats, Architects Havens & Toepke.....	11
Country Residence, Architect J. Murray.....	11

ECCLIASTICAL

The Catholic Church of St. Paul, Chicago, Ill., Front Elevation, Side Elevation, Looking From the Altar, Looking Towards the Altar, Architect Henry J. Schlacks.....	1
The Vatican Library, Rome.....	1
Church for Holy Cross Parish, Architects Shea & Shea. Design for a Church, architect Albert Sutton.....	3
Interior, Church of the Holy Cross, architects Shea & Shea.....	5

Design for a Church, architects Reid Bros.....	6
Study for a Church, architect C. A. Meussdorffer.....	6
First Christian Church, Los Angeles, Cal., architects Austin & Skillings.....	6

EDUCATIONAL

The Vacaville Union High School, architects Cunning- ham Bros.....	1
Youths' Directory, architect C. J. I. Devlin.....	4
Library and Assembly Hall, Leland Stanford, Jr., University, Architects Percy & Hamilton.....	10
Mission High School of San Francisco, Cal., architects Havens & Toepke.....	11

MERCANTILE

Wells, Fargo & Co's Express Building, San Francisco, Cal., architects Percy & Hamilton.....	3
Design for a Stone Building, architect Albert Sutton.....	4
Tuolumne County Court House at Sonora, architects Wm. Mooser & Son, San Francisco, Cal.....	5
The Young Building, architects Kenitzer & Barth.....	10
Green Hotel Annex, Pasadena, Cal., architect Frederick I. Roehrig.....	11
The Poodle Dog Restaurant, San Francisco, architects Wm. Mooser & Son.....	12

MISCELLANEOUS

The Arch of Titus, Rome.....	2
Gallery of Henry II., Fontainebleau.....	2
Bed of Mme. de Maintenon Fontainebleau.....	2
Interior View—West End, Temple Mission Lodge, No. 160 F. and A. M., architects Herman & Swain.....	2
The Main Entrance—The East End—Banquet Hall— Interior Views—Temple Mission Lodge No. 169. F. & A. M., architects Herman & Swain.....	2
Trans-Mississippi and International Expositions Build- ings—Fine Arts Building, architects Eames & Young, St. Louis; Manufacturers Building, archi- tect John J. Humphries, Denver; Agriculture Building, architect Cass Gilbert, St. Paul, Minn.; Liberal Arts Building, architects Fisher & Lawrie Omaha, Neb.; Machinery and Electricity Build- ing, architect Dwight H. Perkins, Chicago, Ill.....	5
Sketch of Stable and Lofts on the Elmswood Premises, Los Gatos, Cal., T. J. O'Connor, Del.....	7
Alhambra Theatre, Corner Eddy and Jones, architect M. J. Lyons.....	8
Interior Views of Poodle Dog Restaurant:—Suite on Third Floor—Main Dining Room—Reception Hall—Panel in Ceiling of Vestibule—Bath Room adjoining each Suite—Banquet Hall—Design of Handle on Entrance Door—Center Chandelier in Main Dining Room—Kitchen Range. Archi- tects, Wm. Mooser & Son.....	12

MONUMENTAL

Columbarium, Odd Fellows Cemetery, with Interior Views and Line Drawings, Architect J. B. Calrill.....	9
--	---

FACTS ABOUT PAINTS.

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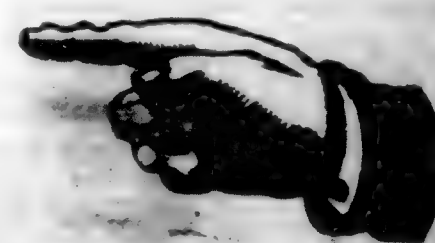
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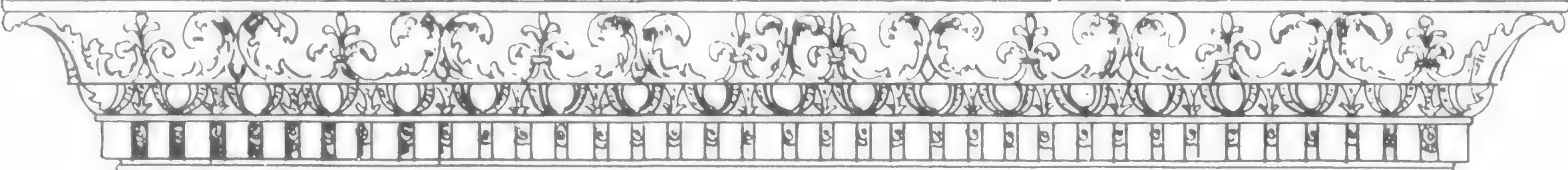
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CONTENTS

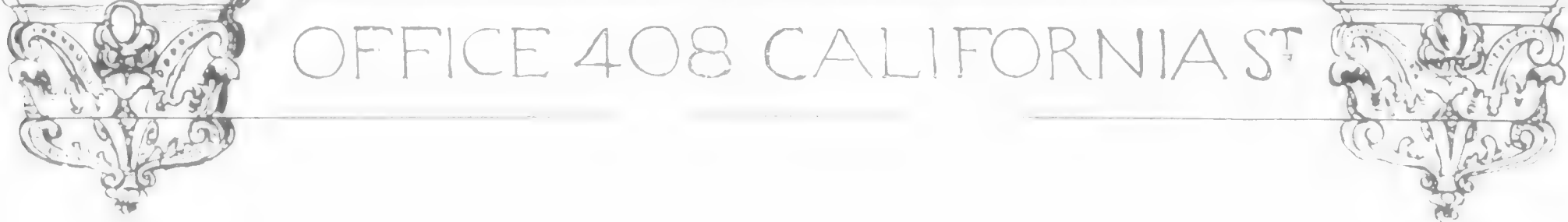
Index to Advertisers
Then and Now in Architecture
The Senate and the Supervising Architect
Trade Notes
Notice of Meetings
Illustrations
Information Culled From the Exchanges
The Advancement of Public Taste in Architecture 4, 5

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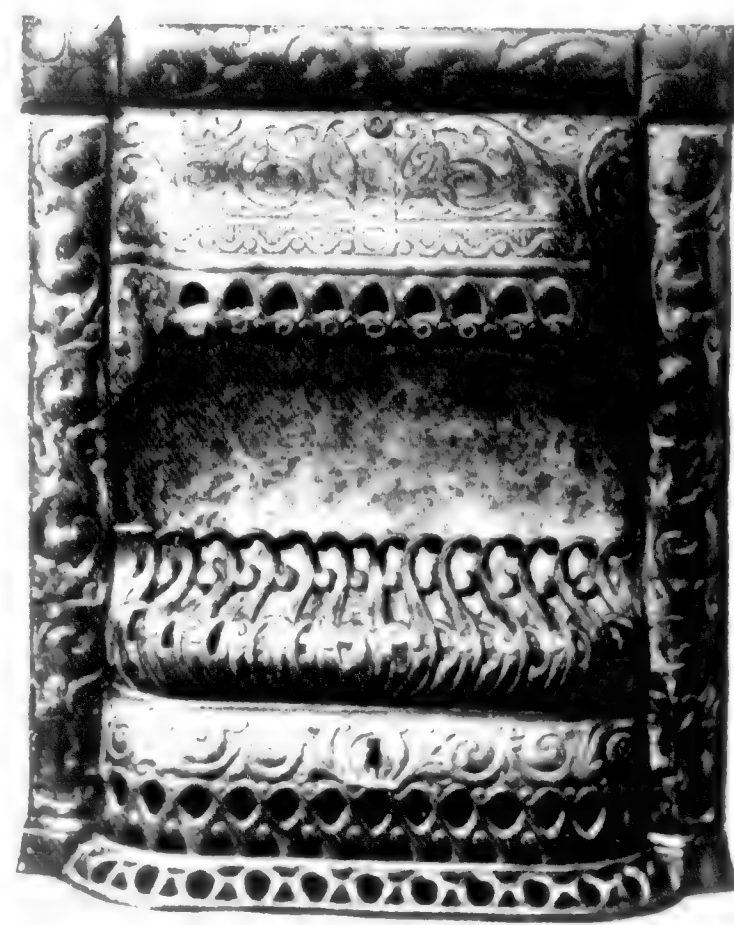


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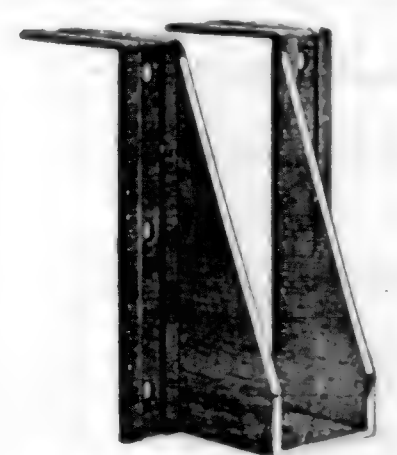
GENERAL INDEX OF ADVERTISEMENTS.

CLASSIFIED INDEX.

Architects.....	xv	Iron Hangers.....	vi
Architects' Supplies.....	iii	Iron Works.....	x
Artificial Stone.....	xii	Iron Cornices.....	vi
Boilers.....	xiv	Incandescent Lamps.....	xiv
Building Supplies.....	ix	Lumber.....	xiv
Building and Loan Assn.....	xv	Mantles Tiles, Etc.....	xiv
Brick Preservative.....	xiii	Metal Lath.....	iv
Cement.....	xvii	Mortar Color.....	xiii
Chimneys Patent.....	xii	Paint.....	xviii
Door Opener.....	xviii	Paper.....	xviii
Engineers.....	xix	Plaster.....	xiv
Filters.....	x	Plumbers and Gasfitters.....	xiv
Furniture and Upholstery.....	xv	Roofs Repaired and Painted.....	xix
Hardware.....	x	Sash Locks.....	xiv
Heating and Ventilating.....	xii	Sewer Pipes.....	x

CLASSIFIED INDEX.

Sash Locks.....	xiv	Sewer Pipes.....	x
Sewer Pipes.....	x	Sewer Traps.....	xviii
Sewer Traps.....	xviii	Sash Lines.....	xvi
Sash Lines.....	xvi	Shingle Stains.....	xiii
Shingle Stains.....	xiii	Sidewalk Lights.....	xiii
Sidewalk Lights.....	xiii	Sliding Door Hanger.....	x
Sliding Door Hanger.....	x	Terra Cotta.....	x
Terra Cotta.....	x	Tin Roofing.....	ii
Tin Roofing.....	ii	University.....	vi
University.....	vi	Ventilators.....	xvii
Ventilators.....	xvii	Water Closets.....	iii
Water Closets.....	iii	Window Cord.....	xvi
Window Cord.....	xvi	Windows-Revolving.....	xii
Windows-Revolving.....	xii	Wood Preservative.....	xiii
Wood Preservative.....	xiii		

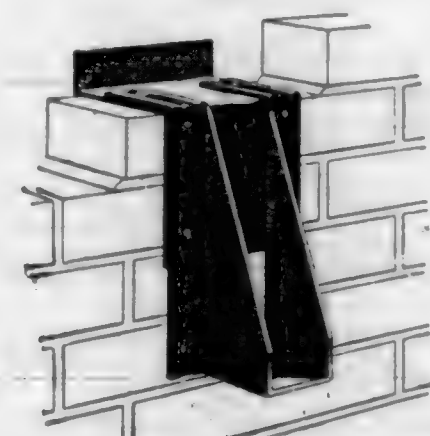


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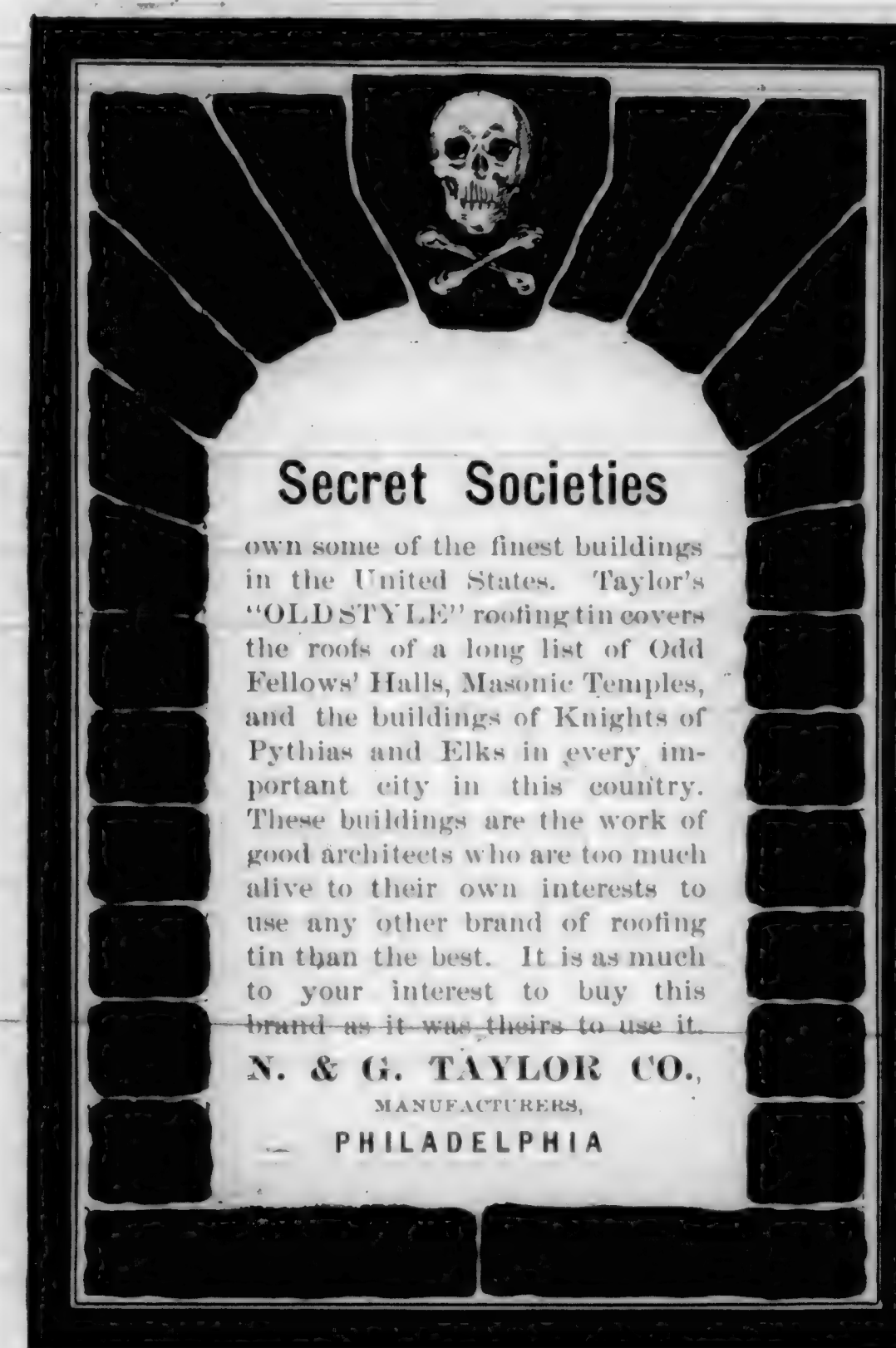


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