

Alameda County.

Addison near Grant, Berkeley. Two-story frame; owner, D. J. Black; architect, John Spencer; contractor, John Spencer; cost, \$2,117; signed, May 18; filed, May 21; payments, \$1,000; brown mortar on; \$1,117, completed.

Alameda Ave. near Union street, Alameda. Two-story dwelling; owner, Emma J. Whitney; architect, Chas. S. Shainer; contractor, J. E. Henderlong; cost, \$3,300; signed, May 13; filed, May 14; payments, \$618; rough frame up, rafters on and sheathed; \$618, enclosed and ready for plaster; \$618, windows in and casings on, \$621, ready for painter; \$825, 35 days.

Bancroft way & An'd'm, Berkeley. Two-story frame; owner, Mrs. A. A. Smith; architect, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$4,322; signed, May 12; filed, May 13; payments, \$1,200; rustic and roof shingles on and chimney built; \$1,100, brown mortared and exterior primed; \$332, completed; \$1,380, 35 days.

Blake Tract, Berkeley. One-story frame; owner, Mrs. E. Gwyneth; architect, I. A. Boynton; contractor, I. A. Boynton; cost, \$1,860; signed, May 18; filed, May 20; payments, \$465; frame up; \$465, brown mortared; \$465, completed; \$465, 35 days.

Block B, North Oak Homestead. Two-story frame; owner, Mark Ryan; architect, Howard Burns; contractor, Patrick J. Brophy; cost, \$2,370; signed, May 2; filed, May 2; payments, \$592.50; frame up; \$592.50, enclosed and plastered; \$592.50, completed; \$592.50, 35 days.

Howman Tract, Oakland. One-story cottage; owner, Hattie I. Turner; architect, J. V. Embury; contractor, J. V. Embury; cost, \$1,700; signed, June 2; filed, June 3; payments, \$425; 1/2 of work completed; 1/2 of materials furnished; \$425, 3/4 work done; 3/4 materials furnished; \$425, completed; \$425, 35 days.

Castro near Tenth, Oakland. Two-story frame; owner, D. Magnus; architect, Chas. Mau; contractors, Herbst & McLeod; cost, \$3,417; signed, May 19; filed, May 19; payments, \$1,281; 1/2 work completed and 1/2 materials furnished; \$1,281, completed; \$835, 35 days.

Cedar street near Lookout Place, Berkeley. One-story frame; owner, Geo. Stillfried; architect, Alex. Hildebrand; contractor, Paul Crimmon; cost, \$1,500; signed, April 27; filed, May 12; payments, \$300; roof on; \$300, completed; \$300, 35 days.

Center & Chester, Berkeley. Two-story buildings; owner, Geo. Carter; contractor, H. M. Finley; cost, \$2,280; signed, May 21; filed, May 21; payments, \$400; frame up; \$375, brown mortared; \$735, white coat on; \$770, completed.

Church Tract, Brooklyn Tp. Two-story house; owner, Elizabeth A. Bennett; contractor, H. P. Parker; cost, \$2,373; signed, May 29; filed, June 1; payments, \$593; frame enclosed and roof on; \$593, brown mortar on; \$593, completed; \$591, 35 days.

Collins Tract, Oakland. To build; owner, Francis M. Seonelt; architect, Leiter & Prugh; contractors, Leiter & Prugh; cost, \$1,931; signed, May 22; filed, May 23; payments, \$490; roof and rustic on; \$400, brown coat mortar on; \$190 when completed; \$491, 35 days.

Concordia street near Pacific Ave., Alameda. Six-room cottage; owner, John P. Roach; architects, Brehaut & Diamond; contractors, Brehaut & Diamond; cost, \$2,143; signed, May 26; payments, \$402.25; frame up; \$402.25, enclosed and roof on; \$402.25, brown mortared; \$402.25, completed; \$356.25, 35 days.

Durant Av. & Tremont, Berkeley. Dwelling house; owner, Henry I. Randall; architect, Henry I. Randall; contractors, F. Esly, et al; cost, \$2,860; signed, April 30; filed, May 1; payments, \$900; frame up, rustic on and roof shingled; \$550, brown mortared; \$350, completed; \$800, 35 days.

Eleventh street near Kirkham, Oakland. Two-story frame flats; owner, Conrad Weller; architect, J. C. S. Whalin; contractor, J. C. S. Whalin; cost, \$5,500; signed, April 9; filed, May 8; payments, \$1,800; enclosed and roofs on; \$1,800, brown mortared; \$1,900, completed.

Enclinal Park Tract, Alameda. To build; owner, Maria E. Hoy; architect, Fred P. Fisher; contractors, D. Straub & Son; cost, \$2,700; signed, May 16; filed, May 16; payments, \$650; frame up; \$650, rough plastered; \$650, plastering done and inside finish on; \$650, 35 days.

Enclinal Ave. near Grand street, Alameda. To build; owner, Etta F. Middleton; architect, Fred P. Fisher; contractors, O. Straub & Son; cost, \$2,732; signed, May 23; filed, May 23; payments, frame up, 25 per cent; enclosed and mortared, 25 per cent; completed, 25 per cent; balance, 35 days.

Fitch Tract, Alameda. To build; owner, C. W. Petry; architect, A. Petry; contractor, A. Petry; cost, \$1,730; signed, May 14; filed, May 20; payments, \$600; frame up; \$600, ready for plaster; \$450, completed.

Fourth street near Oak, Oakland. To build; owner, Chas. Troyer; architect, Elmer Child; contractors, Maghall & Linton; cost, \$1,732; signed, May 28; filed, May 28; payments, \$448; frame up and rustic on; \$448, enclosed and first coat plaster on; \$448, completed; \$448, 35 days.

Fremont Ave. near Fourteenth, East Oakland. To build; owner, Mrs. G. Daunet; architect, J. Laughland; contractor, J. Laughland; cost, \$1,825; signed, May 26; filed, May 27; payments, \$455; enclosed; \$455, brown mortared; \$455, completed; \$460, 15 days.

Fourteenth & Center, Oakland. To build; owner, M. Andreano; architect, F. C. Bignami; contractor, F. C. Bignami; cost, \$3,200; signed, May 29; filed, June 1; payments, \$1,000; frame up; \$750, enclosed; \$750, completed; balance, 35 days.

Fourteenth & Washington, Oakland. Three-story brick building; owner, John C. Westphal; architect, Chas. Mau; contractors, Remillard Brick Co.; cost, \$9,300; signed, June 3; filed, June 4; payments to be made in four equal parts as work proceeds to the value of 75 per cent of the amount of work done; 25 per cent, 35 days.

Fourteenth & Washington, Oakland. Three-story brick building; owner, John C. Westphal; architect, Chas. Mau; contractors, Herbst & McLeod; cost, \$17,000; signed, June 2; filed, June 4; payments, \$3,187; 1/2 work completed and 1/2 materials furnished; \$3,187, 1/2 work done and 1/2 materials furnished; \$3,180, completed; \$1,250, 35 days.

Grand street near Pacific Ave., Alameda. To build; owner, H. P. Moreau; architect, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$2,400; signed, May 12; filed, May 13; payments, \$800; rustic and roof shingles on and chimney built; \$600, brown mortared and exterior primed; \$170, completed; \$630, 35 days.

Grove & Hobart, Oakland. Two-story frame; owner, Rev. T. McSweeney; architect, Chas. J. Devlin; contractor, P. Maloney; cost, \$4,275; signed, May 4; filed, May 4; payments, \$750; foundation walls and chimneys complete; \$1,000, ready for plastering; \$1,200, woodwork done and ready to paint; \$250, completed; \$1,075, 35 days.

Hillegas Tract, Berkeley. Frame dwelling; owner, A. C. Stuart; architects, Pissis & Moore; contractor, A. H. Bread; cost, \$3,210; signed, May 21; filed, May 21; payments, \$600; frame up; \$600, 1st coat plaster on; \$600, plastering finished; \$600, completed; \$810, 35 days.

E 50, Lot 9, Block 21, Berkeley. Frame cottage; owner, Mrs. Mary E. Smith; architect, B. J. S. Cahill; contractor, John Spencer; cost, \$2,235; signed, May 6; filed, May 9; payments, \$7 1/2 per cent when brown mortared; \$7 1/2 per cent when completed; 25 per cent, 35 days.

Lot 36, Block E, Berkeley. To build; owner, Geo. A. Howison; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$4,763; signed, May 7; filed, May 9; payments, \$1,300; roof shingled and chimney built; \$1,176, brown mortared and exterior primed; \$1,100, completed; \$1,187, 35 days.

Lot 38, Cogshall Tract, Oakland. Dwelling; owner, Erastus F. Soward; architect, H. S. Kribbs; contractor, H. S. Kribbs; cost, \$1,375; signed, April 24; filed, May 1; payments, \$343; frame up and rustic on; \$343.75, brown mortared; \$343.75, completed; \$343.75, 35 days.

Louise near Cedar, Berkeley. To build; owner, Mrs. Sarah Stevens; architect, John Conant; contractor, John Conant; cost, \$2,312; signed, May 2; filed, May 2; payments, \$800; ready for plaster; \$800, carpenter work done; \$712, completed.

Louisa near Vine, Berkeley. Frame building; owner, Leo A. Brown; architect, Jas. F. Chadwick; contractor, I. A. Boynton; cost, \$2,450; signed, May 26; filed, May 27; payments, \$610; frame enclosed; \$610, brown mortared; \$610, completed; \$620, 35 days.

Linden & Eighth, Oakland. Two-story frame; owner, F. Richling; architect, Chas. Mau; contractor, Peter F. Nelson; cost, \$7,664; signed, May 7; filed, May 11; payments, \$1,437; 1/4 materials furnished and 1/4 work done; \$1,437, 1/4 materials furnished and 1/4 work done; \$1,437, 3/4 material furnished and 3/4 work done; \$1,437, completed; \$1,916, 35 days.

Magnolia between Thirty-fourth & Thirty-fifth, Oakland. Cottage; owner, W. H. Cooke; contractors, Leiter & Prugh; cost, \$1,350; signed, May 23; filed, May 23; payments, 1/4, rustic and shingles on; 1/4, brown mortared; 1/4, completed; 1/4, 35 days.

Ninth Ave. near Sixteenth Street, Oakland. Two-story frame; owner, J. W. McHugh; architect, B. McManus; contractors, Smith & Lake; cost, \$3,380; signed, May 19; filed, May 19; payments, \$845; frame up and rustic on; \$845, 1st coat mortar; \$845, completed; \$845, 35 days.

Oxford near Cedar. One-story and a half dwelling; owner, S. C. Carrouthiers; contractor, C. M. Cornell; cost, \$2,500; signed, May 20; filed, May 23; payments, 1/4, frame up; 1/4, brown mortared; 1/4, completed; 1/4, 35 days.

Pacific Ave. near St. Charles, Alameda. Two-story house; owner, E. A. S. Page; architect, A. Stenbitt; contractors, J. R. & S. P. Richart; cost, \$1,300; signed, May 21; filed, May 22; payments, \$450; frame up; \$450, brown mortared; \$450, completed; \$450, 35 days.

Pacific Ave. near St. Charles, Alameda. Two-story house; owner, E. A. S. Page; architect, A. Stenbitt; contractors, J. R. & S. P. Richart; cost, \$2,300; signed, May 11; filed, May 22; payments, \$300; frame up; \$300, brown coated; \$700, completed; \$600, 35 days.

Peralta Heights, East Oakland. Two-story frame; owner, T. M. Humphrey; architect, Chas. I. Havens; contractors, W. A. & W. F. Griffith; cost, \$3,060; signed, May 11; filed, May 13; payments, \$765; frame up and sheathed; \$765, brown mortared; \$765, completed; \$765, 35 days.

Percy Tract, Berkeley. Two-story frame; owner, A. D. Himmelmann; architect, Louis Stone; contractor, A. C. Bryan; cost, \$2,340; signed, May 18; filed, May 18; payments, 75 per cent as work progresses; balance, 25 per cent, 35 days.

Percy Tract, Berkeley. To build; owner, N. L. Freese; architect, F. E. Armstrong; contractor, F. E. Armstrong; cost, \$2,250; signed, May 16; filed, May 18; payments, \$562; enclosed; \$562, brown mortared; \$562, completed; \$564, 35 days.

Poplar between Fourteenth and Fifteenth, Oakland. One story and basement; owner, N. Page; contractor, A. J. McKee; cost, \$1,273; signed, May 29; filed, May 29; payments, \$476; roof on; \$476, plastered; \$321, 35 days.

San Leandro Road, Brooklyn Tp. Tank house; owner, Mrs. R. A. Wellman; contractors, Knight & Littlefield; cost, \$1,848; signed, May 13; filed, May 29; payments, 75 per cent as work progresses; 25 per cent, 35 days.

San Pablo Avenue near Seventeenth, Oakland. Plumbing; owner, Wm. M. Hatfield; architect, A. Gilbert; contractors, Hogan & Cruz; cost, \$1,573; signed, May 15; filed, May 20; payments, 75 per cent as work progresses; balance, 25 per cent, 35 days.

Seventh & Webster, Oakland. Two-story frame; owner, Albert Kayser; architect, Chas. Mau; contractors, Herbst & McLeod; cost, \$3,997; signed, May 4; filed, May 4; payments, \$750; 1/4 materials furnished and 1/4 work done; \$750, 1/4 materials furnished and 1/4 work done; \$750, 3/4 materials furnished and 3/4 work done; \$747.75, completed; \$990.25, 35 days.

Sea View Tract, Berkeley. Two-story dwelling; owner, A. A. Fink; architect, F. M. Cramer; contractor, F. M. Cramer; cost, \$2,210; signed, June 1; filed, June 3; payments, \$562; building enclosed and chimneys up; \$562, brown mortared; \$562, completed; \$554, 35 days.

Second Avenue near Santa Clara, Alameda. One-story frame; owner, A. H. Smith; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$1,931; signed, May 15; filed, May 28; payments, \$350; rustic, roof shingles on and chimney built; \$450, window frames set and brown mortared; \$431, completed; \$350, 35 days.

Shattuck Avenue near Vine Street, Berkeley. Two-story frame; owner, A. Frit; architect, Chas. M. Rosser; contractor, Wm. Peters; cost, \$1,500; signed, May 18; filed, May 18; payments, \$475; frame up; \$475, brown mortared; \$475, completed; \$475, 35 days.

Sixteenth Street near Alameda Avenue, Alameda. Two-story dwelling; owner, Henry Mohr; architect, A. Stenbitt; contractors, Richart & Richart; cost, \$2,250; signed, April 24; filed, May 4; payments, \$450; frame up and roof on; \$590, brown coat finished; \$687.50, completed; \$562.50, 35 days.

St. Charles street, Alameda. Two-story building; owner, James Pogue; architect, Geo. A. Benemann; contractor, Geo. A. Benemann; cost, \$2,410; signed, May 14; filed, May 14; payments, \$500; frame up, boarded and rustic on; \$500, brown mortared; \$700, completed; \$710, 35 days.

Town of Niles. Frame church; owner, Rev. T. Carraher; architect, T. J. Welsh; contractor, J. L. Westby; cost, \$6,475; signed, May 3; filed, May 18; payments, \$500; foundation laid; \$650; frame up; \$650, enclosed; \$650, completed; \$875, 35 days.

Tuttle Tract, Oakland. Additions to cottage; owner, W. W. Whitman; architect, J. C. Mathews & Son; contractor, Wm. Dahl; cost, \$2,473; signed, May 25; filed, June 2; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Twenty-first street near Telegraph Avenue, Oakland. Two-story frame; owner, Jas. Coulen; architect, Chas. Mau; contractor, Jas. Toohier; cost, \$4,019; signed, May 1; filed, May 3; payments, \$750; 1/4 materials furnished; 1/4 work done; \$750, 1/4 materials furnished and 1/4 work done; \$750, 3/4 materials furnished and 3/4 work done; \$764.25, completed; \$1,034.75, 35 days.

Twenty-third Ave. & Seventeenth street, East Oakland. Church building; owner, German M. E. Church; architect, A. Klahn; contractor, Alex. Wahlstrom; cost, \$2,425; signed, May 6; filed, May 9; payments, \$600; frame up; \$600, brown mortared and outside done; \$600, completed; \$625, 35 days.

Webster near Central Avenue, Alameda. Cottage; owner, John Lynch; architect, Wm. Kirk; contractor, Jas. Toohier; cost, \$1,673; signed, June 1; filed, June 1; payments, \$387; first coat plaster on; \$388, 35 days.

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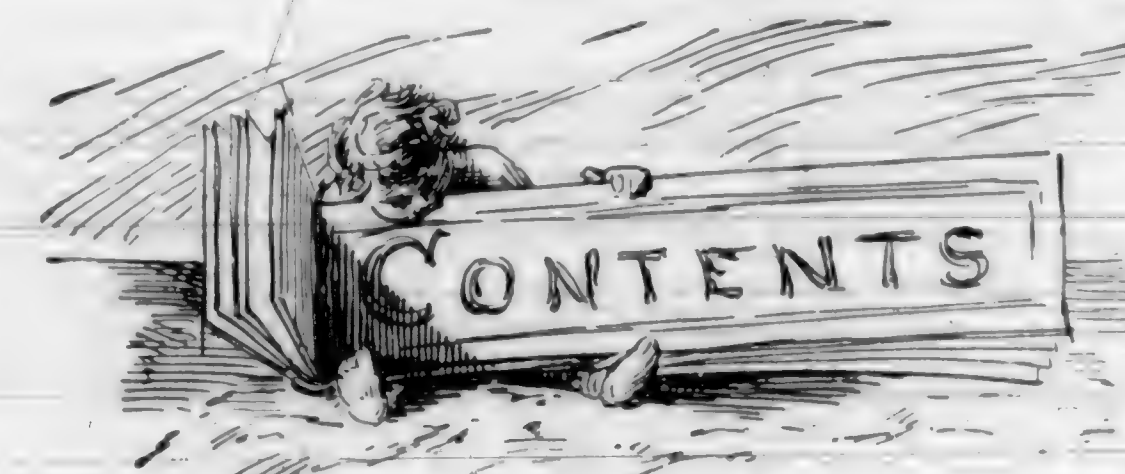
NOW IN THE TWELFTH YEAR.

W. P. MOORE, PRESIDENT.

OLIVER EVERETT, SECRETARY.

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NOTICE.

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At no former period in the history of San Francisco has there been such a spirit of progress among property holders in the outlying districts as is apparent at the present time. Improvement clubs have been organized in every direction for the purpose of devising methods and directing a concentration of energies for the enhancement of values in the immediate locality of each club.

That many of these associations are moving in the direction to cause great changes in certain districts is evident to anyone who can read the signs of the times.

One of the most prominent schemes and one which will place some of the most desirable residence sites within reach of persons of moderate means is likely before long to shape itself. It is well known, that on account of improper grades for the streets and a consequent defective drainage system, improvements have been retarded in the region lying at the north side of Golden Gate Park, extending from the Park to the Government reservation, and from the cemeteries westerly to the ocean.

It is now proposed to level off "Lone Mountain" and the hills adjacent, fill in the lower places, and establish new grades for the streets whereby a sanitary drainage system can be formed which will in the years to come make this the most healthy portion of the city. The Park Commissioners have many changes and improvements under consideration which if carried out will give the public additional facilities for visiting and enjoying this favorite resort. On the sloping ground at the southerly side of the park and extending to the ocean, great changes are in contemplation which in conjunction of the extension of Market street in a straight line to the Ocean and the grading down a portion of "Twin Peaks" and the range of hills in that vicinity will make a district which for residence purposes cannot be excelled.

A few years will develop such gigantic changes in the configuration of the surroundings of San Francisco as to astonish the oldest inhabitant.

MISSION OF SAN ANTONIO, CAL.

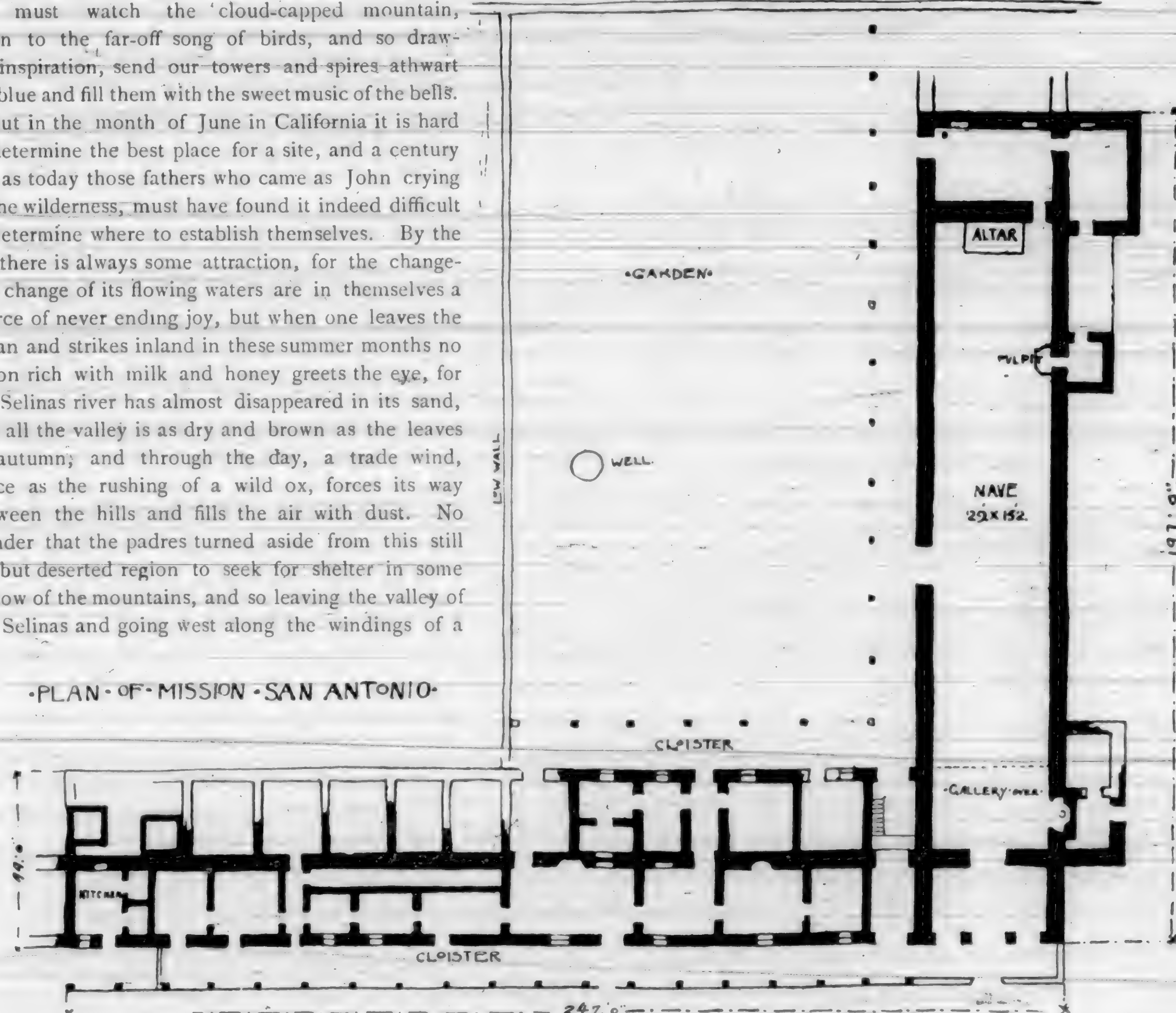
The missions of California are nothing if they are not picturesque, and they owe it largely to their surroundings and rightly so, for the site of a building is as much part of it, as its walls or roof. The building may be the central idea, but the scenery is its back ground and it is because these buildings complete the picture and add to the perfect harmony of their surroundings that we call them picturesque. Climate, with its sunshine or gloomy days, its balmy breezes or raging storm, the roaring of the tall pine trees or the flitting of bright birds from flower to flower, the snow-capped mountain or far-stretching sea, all have their influence upon us, and in no small degree, form part of us; and if we are to express ourselves harmoniously and not discordantly with these things, we must watch the cloud-capped mountain, listen to the far-off song of birds, and so drawing inspiration, send our towers and spires athwart the blue and fill them with the sweet music of the bells.

But in the month of June in California it is hard to determine the best place for a site, and a century ago as today those fathers who came as John crying in the wilderness, must have found it indeed difficult to determine where to establish themselves. By the sea there is always some attraction, for the changeless change of its flowing waters are in themselves a source of never ending joy, but when one leaves the ocean and strikes inland in these summer months no cañon rich with milk and honey greets the eye, for the Selinas river has almost disappeared in its sand, and all the valley is as dry and brown as the leaves in autumn; and through the day, a trade wind, fierce as the rushing of a wild ox, forces its way between the hills and fills the air with dust. No wonder that the padres turned aside from this still all but deserted region to seek for shelter in some hollow of the mountains, and so leaving the valley of the Selinas and going west along the windings of a

against the distant sky, and all around the garden wall, the sighing of green willows and the merry laughter of the brook.

I know not to what extent these fathers planed their buildings and drew them with scale and square, but that they must have required a good deal of study we can readily infer. San Antonio is one of the most extensive as may be seen by the plan, and covered with its church, dwellings, outhouses and enclosed garden about an acre of ground. The Mission, as usual, faces the east. On the right in our sketch is the church with its gable end and small belfreys on each side, between this and the main wall a semicircular arched ceiling forms the vestibule. To the left are the priests' quarters with its many arched cloister affording a cool yet airy retreat from the summer's sun.

The foundation walls are for the most part about two feet below the surface and are made of boulders six to twelve inches in



tributary, until within a mile of where the mountains converge and the shallow pools and gentle ripples of the San Antonio give place to the great boulders and rushing waters of a mountain torrent, they, in the year 1771 stayed their wandering, sang their first mass and erected the emblem of their faith. A pretty valley indeed is the San Antonio, far away among the hills, pretty even though without the pale of civilization and the clang of railway engine, and it is as peaceful to-day as it was a century and a half ago, for naught but the ruins of the old mission remain to tell us of the busy hum of human life that once moved to and fro around it. Behind the Mission and against the setting sun rise the mountains, four or five thousand feet and to the east, roll gradually away diminishing in altitude as they go, till finally they become lost, as the waving of a blue ribbon

diameter cemented together with dobe. The floor of the Mission and dwellings are on about the same level as the ground without. On the top of this masonry foundation rest the bricks of which for the most part the walls are built. These bricks are composed of unburnt clay, mixed with gravel and bound together with straw, and measure $10\frac{1}{2}$ x $10\frac{1}{2}$ inches and 4 inches thick with larger bricks 21 inches long to form bond.

At the joints are imbedded in the mortar small sharp stones to form a key for the plaster finish. The front of the church with its belfreys as well as the piers and arches of the cloister are of red burnt bricks or tiles 9 x 9 inches and 2 inches thick laid with lime mortar, both bricks and mortar being as hard as the best now found in common use. The caps of the piers at the cloister, as well as those at the entrance to the church and

the small cornice at the height of the ceiling in the latter are formed of two courses of moulded bricks a layer and smaller quarter round in combination. The interior of the church is of itself unworthy of mention, consisting simply of four plain walls pierced by four small window openings near the ceiling, and three exits. At one time a flat arch of light lattice work at the height of the ceiling and above the other rail did service as a line of separation between the nave and chancel, but this now with the roof above lie on the floor a complete wreck. Where once the altar stood, a few slight sticks support the solitary figure of the patron saint, who, from his airy position and equally airy costume appears more as if prepared to begin some feat of athleticism than as one chosen to be the patron of a holy mission.

The roof as seen by the section consists of a main truss formed of a tie beam 12 x 14 inches, principal rafters 10 inch round poles and king post 8 inches round. The tie beam goes through and projects beyond the walls about 2 feet and has a key piece 4 x 6 inches and 3 feet thick going through it, against which the principal rafters abut. At the top these latter are halved together, and the king post is mortised into the tie and ridge pole, the whole resting on corbels 8 x 12 inches, with moulded ends. These trusses are about 14 feet apart and between them the intermediate beams carrying the ceiling are untrussed. On the top of the principal rafters at the line of the walls and ridge pole, rest purlins 8 inches in diameter, supporting the common or secondary rafters. These latter are about three feet apart and are spanned by light boughs $1\frac{1}{2}$ inches in diameter on which are placed the tiles of the roof. The whole construction is held together by thongs of raw hide, which even after the lapse of a century are still strong enough to resist the full strength of a man. The roof tiles are about 20 inches long, semi-circular in section and taper from 11 inches to $8\frac{1}{2}$, being about 1 inch in thickness, thus allowing them to lap and still retain the same level. They are laid in alternate rows with their convex and concave sides uppermost. The ceiling of the church as seen by the section is slightly arched in straight lines and the projection of the roof members and ceiling joists placed alternately every seven feet divide it into panels. The under side of these ceiling timbers is rudely moulded and between where horizontal, and resting on the top where sloping, the ceiling boards $1\frac{3}{4}$ x 8 to 14 inches are placed.

At the east the gallery which as usual is perfectly level is supported by 9 x 10 inch joists resting on corbels and wall plates; a stair from the passage between the church and dwellings reaches the same. The walls of the interior are plastered with white lime mortar, about one-half inch thick and the floor is of red concrete. At one time a baptistery was attached to the building where now in the thickness of the wall stands the font. At the rear is the vestry with its single window high up near the ceiling carrying the same line as those of the church, and on one side within the wall are two cupboards with semicircular heads and folding doors and many rows of shelves, looking dreary and desolate in their array of empty bottles, sad emblem of departed sweetness and of many makings glad of the hearts of men. In the belfrey a single bell yet remains with its raw-hide cord attached, ready to the hand of the passing stranger to send as of old its message to the mountain, and on it the inscription

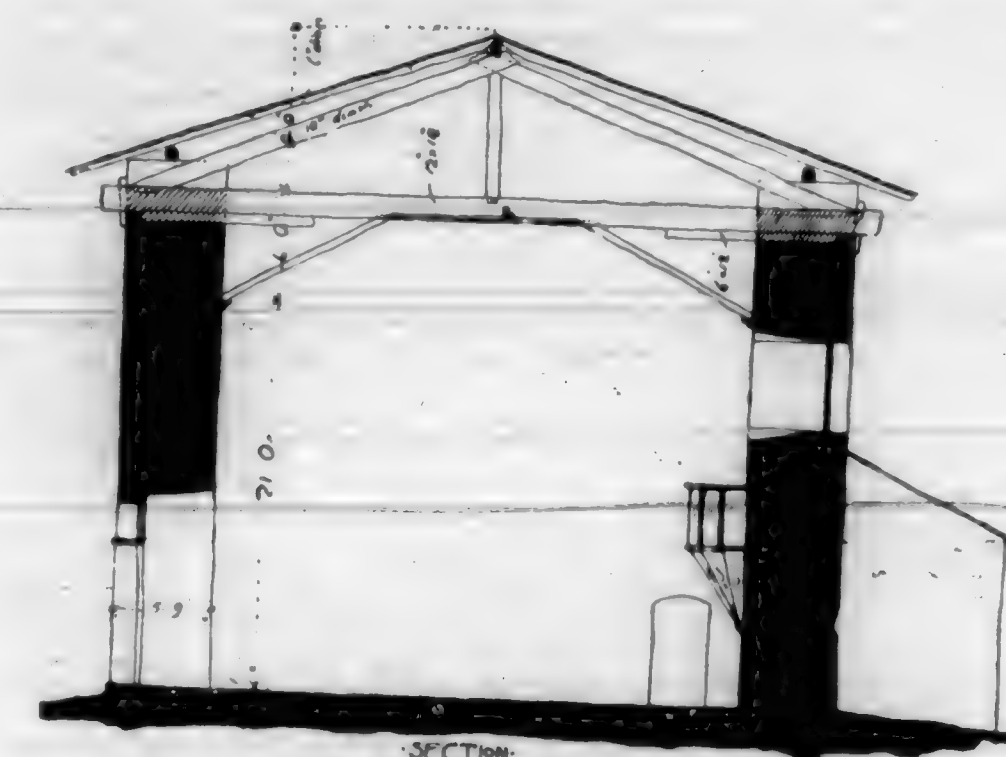
"S. Antonio Ave Maria Purissima, 1799."

In an oak tree, some three miles distant, you will find its mate, but the skepticism of the age has changed the tone of its summons, and no longer does it call to the worship of the perfect man, but rather to the attaining of that knowledge through which all may become perfect. The principal rooms of the dwellings are those facing the east and next to the church, and

these have their ceilings of 8 x 10 inch beams, boarded over, their walls plastered and their floors of wood.

In the inferior rooms the floors are laid with red tiles $10\frac{1}{2}$ x $10\frac{1}{2}$ inches and 3 inches thick. The cloister to the south and west has no arches, but consists simply of brick piers and wooden lintels carrying the roof. The garden is enclosed by a dobe wall roofed with tiles, it evidently being found necessary in all cases to prevent the dobe from becoming saturated by rain.

Beneath the wine vats shown on plan is a tunnel, arched with brick, which in some manner I know not how, facilitated the process of wine making, but of its why and wherefore none remain to tell, for no longer do the merry barristers tread the wine press, in the well the frog has made his home, among the



pear and rose trees the gopher has his run, and beneath the northward shadow of the church the heaving turf or timbers crossed; without name, or date, or other token of departed greatness, have naught to tell us of these bye gone times. But it is enough that only a boulder from the creek should mark the spot, for in the old building itself we find the epitaph and though the cross above be silent as the grave beneath the fallen beams and ruined walls of the old Mission speak to us as were we face to face, with those who fashioned the timbers and bound them together after the image of the soul within, a hundred years ago.

Tres—1891.

AMERICAN ART FROM AN ENGLISH POINT OF VIEW.

The following remarks, made by Professor Herkomer, an associate member of the English Royal Academy, will be read with interest. They refer to the impressions made upon him when visiting the United States for the purpose of investigating the progress of art on this side of the Atlantic.

Much of the work in the schools of Europe just now, he said, was done by American students. They had the most artistic temperament, they adopted the latest phase of art and they presented a clearer view of the newest craze in European art than could be obtained in Europe itself; but when these artists returned to America their art had a tendency to drift away from them and it was necessary for them to come back to Europe to refresh themselves. They studied mostly in France, Germany and Italy—never in England. The cause of this failure of power was difficult to state. There was something in the atmosphere of the United States which was contrary to the instincts of the painter. It was hard and electric and every object was clearly seen. Light seemed to devour all the half-tones. The portrait of the lady in a black dress and yellow gloves, exhibited in last year's Academy, he had painted in America, but he had almost to exclude light from his studio. Much of his work done

there, he admitted, was hard and edgy until he thus counteracted those failings. In addition to the difficulties of light, there was a want of confidence on the part of Americans in their own artists. They declined to encourage American artists until they brought their credentials from the other side. The American who patronized his own painters occupied a unique position. Not ten per cent of the artists resident in the United States got their living by painting alone. They were teachers also.

Prof. Herkomer acknowledged that sculpture and architecture flourished in America. Americans had been able to read the old masters better than we had, particularly through one man, Richardson, who, with his real genius, brought out almost a new kind of work on the old lines. He would rather have architecture right than painting right, and he placed architecture first, then sculpture, and then painting. Architecture was the making of a country. In America men were wishful to have better houses than their fathers and their neighbors, and in time there would be room for pictures by American painters who would have earned reputations. Here the Professor narrated some amusing incidents in connection with his portrait painting experiences. He said the American would be painted naturally and not in attitude, as to which and also in regard to dress there was a great deal of anxiety manifested by sitters in this country. He commended the great pains taken in the preparation and printing of American illustrated books, and in conclusion expressed his belief that, although America would never have any picturesque ruins or history shrouded in mystery, it would be, in his estimation, the leader of all nations in the future in art and in all other things.



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FRIEZES.

We must refer to the differences in mural ceiling designs the circumstance that there are friezes that look well in lighter tints than the wall color; but the general practice is to have the coloring stronger than the latter. One rule applies to either mode, and that is that the forms should be distinct, however vague the general wall design. Where the general hue of the frieze is lighter than the former, a few touches of bright color will often restore a balance. It was a true burst of artistic taste that led to the present depth of friezes instead of scrimping bands. It is here worth noting that the proportions followed by the Romans and illustrated at Pompeii were allotted one part of the height of wall to dado, three parts to the field and one and a half to the frieze, proportions adapted to the heavy Roman architecture. Where the mouldings of a room are unusually heavy, we have known decorators to introduce grey and light-some friezes of a more than ordinary depth, to lessen the too heavy effect. The fault of dull and dark friezes is being steadily corrected. It is usually better that the field and frieze should not wholly correspond in color, but the ground of frieze may be the same if of a deeper color than the fold.

BECK'S JOURNAL OF DECORATIVE ART.

ARCHITECTURAL TERRA COTTA AS COMPARED WITH STONE.

BY F. P. MEYENBERG.

Some writers on the application of building materials have the impression that architectural terra cotta can be used in the same sense as stone in construction, substantially as well as ornamentally. This, however, is not a fact, as the following examination of the subject will explain:

There are tests on record proving that terra cotta will stand an equal crushing strength to any granite, to the square inch in solid material. That cannot be denied; but when we enter into the construction of so-called stone buildings, or application of stone in all its various forms, with the required dimensions as necessary in the use of stone to carry out successful designs and plans prepared to be in harmony with the character and appearance of such construction, then, under the same conditions, terra cotta would be unfit on account of its uncertainty of strength when in large pieces.

Aside from strength in large pieces it can further be said that it is difficult to make it true, once passing its limit of easy manufacture. And then, too, if made beyond its strength appealing feeling, it must be acknowledged that terra cotta bears the impression rather of artistic tone, than the cold cast suggesting strength as conveyed by stone.

In the erection of weighty buildings, where strength in the construction is one of the chief requirements, and the adopted building material stone and bricks, it has been found necessary by experience to limit the dimensions or stone, as the bond must be the same as the height and the length not to exceed six times its height. How impractical it would be to attempt such proportions in terra cotta!

In cases where stone appears as trimmings, being a mere veneering of a structure, it does not directly become a part of the carrying capacity of the walls; the bonding or connecting of the stone facing with the brick masonry is mostly by means of iron anchors, permitting a slight separate action of variation in shrinking of brick masonry without materially affecting the position of the stone work. Entering upon the application of architectural terra cotta as a general building material in the sense of using it like stone, in connection with its adaptiveness, its character actually and sensibly considered as a building material—recognizing the difficulties, expense and imperfectness of solidity experienced in its manufacture,—if the proportions of its economical limits are exceeded, in no cases can large pieces of architectural terra cotta enter upon equal basis as to strength with stone, where terra cotta, like stone, becomes a part of the carrier of the structure itself.

Supposing the corner of a weighty building 150 feet high were laid up with terra cotta hollow quoins 15 inches high. Such height of wall would represent 120 courses of the described quoins and equally as many joints; the same height built up of common bricks would make 720 courses or six times more mortar joints and shrinkage to that of the quoins. It can readily be seen that such uneven shrinkage must be damaging to the lower courses of the terra cotta, as the load of the wall will tear down upon the flimsy (generally only one inch thick) partition or struts of the terra cotta blocks, which might, if bedded solidly against a resisting material, carry a weight of 12,000 lbs. to a square inch, but under the described position. Often only a few pounds pressure will break away the part and cause cracking of the block.

Were it possible and practical, from a manufacturing standpoint, that architectural terra-cotta could be made solid into large blocks, of uniform hardness and free from cracks, that only crushing tests could be taken into account, but as long as transverse strength depending upon numerous imperfections by drying and burning, contracted and damaged struts, is the relied upon agent for safety, terra-cotta will always be faulty whenever used in connection with heavy building materials to be made answerable to bear weight such as would be safe even of very inferior stone work.

Terra-cotta blocks made in small sizes, 4 and 6 in. thick, of which the manufacture is easy, cheap, and without the imperfection caused by unequal drying, producing breaks in every direction, it may be said, can be built up to any height as archi-

itects and engineers have deemed it economical and practical for modern conditions and requirements of the most lofty buildings. And, further, in such sizes it can be made and furnished at favorable prices, while in the form of large stone work it would cost much more than granite and failure in its use.—*Brick, Tile and Pottery Gazette.*

PHOTOGRAPHY AS AN EDUCATOR OF ARTISTIC TASTE.

The latest International Annual of Anthony's Photographic Bulletin contains an article by Geo. I. Woolley on photography as an aid to the cultivation of artistic taste, which we herewith present in full.

Amateur photography is usually regarded as of use solely for pleasure; but we find that it is of value in many ways and among these in an educational way. It admits one into many of the secrets of chemical nomenclature, cultivates neatness and care, and develops an enormous fund of patience and perseverance. But besides these things it is of great assistance in the cultivation of an artistic taste.

To the possessor of taste in an artistic line, the world is full of beautiful scenes, not only those which are famed, but multitudes of little nooks and corners often regarded as commonplace. Such scenes, perhaps, as an old hut backed by woods, a little waterfall, a forest road, or a wide sweep of hill and valley dotted with farm houses and specked with grazing cattle. Scenes like these may linger forever in the mind of the artist, while many would pass them and never see their beauty. And then the well-known scenery of the world, the Alps, and in our own country the Yellowstone, how much more keenly does the artist enjoy these things than he who finds nothing pleasing in the scenes which meet him every day! An in an art gallery, how much more does he see in the master pieces of celebrated painters and sculptors!

Aside from contributing so much to a person's enjoyment, an artistic taste is of much practical value. If we are selecting a picture, our taste is in constant requirement; and in decorating, in building houses and in furnishing them, the man with the eye of an artist has infinitely the advantage over one who has not. Indeed, to do these things at all, some taste is required and the more taste one has, the better he can do them.

That photography, if we take it up in the right manner, does contribute to our education in an artistic way, no one who has had any experience will gainsay.

When one has learned to produce a photograph fairly good in mechanical details, he is constantly looking about him, as he walks or rides, for some view which he may take. Many scenes which he has passed unmindful of, a hundred times before, possess a new fascination for him. He grows both observing and discriminating. He sees wherein the beauty of a thing lies, and learns to use his growing taste in the selection of the point of view best adapted to show this beauty.

In order, however, to have photography help us in an artistic way, we must try hard to make our pictures models of artistic beauty. We must not, as so many young photographers do, select a view haphazard; but we must look critically at it, consider whether it will make a good picture, and if we decide that it will, take pains to find the best point from which to take it. It is not within the province of this article to speak of the various rules laid down for the selection of views, the *chiaro oscuro*, or theory of light and shade, and many other things very puzzling to beginners; but as may be well to say that kind and intelligent criticism may be of great help. If the novice at photography feels that his views are lacking in artistic merit, let him submit them to an artistic friend, or better, get this friend to select some views for him. Then by studying these, he will be much helped in obtaining a good composition.

It is not long since the introduction of amateur photography, and already we find many photographers almost rivaling in their compositions, the views of painters. It is not to be expected that an amateur can attain such proficiency in the selection of views as does the painter; but if he is determined, he may be very successful, and contribute much, not only to his own enjoyment, but to that of others.

MUSICAL REQUIREMENTS IN CHURCHES.

FROM THE R. I. B. A. JOURNAL.

The report of the organists' and architects' joint committee on architectural arrangements affecting the musical requirements in churches is one which it is hoped may prove of interest as well as of value, in hinting at some possible variations in church planning. Though the report may ultimately be issued by the Council of the Institute, they cannot be held responsible for its statements, inasmuch as it contains the combined wisdom of organists as well as architects. The names of those forming the committee have been stated in order that the true value and weight of the report may be recognized, and the opinions expressed therein accepted for what they are worth. The organists engaged on the committee are all distinguished men, of great practical experience, and specially qualified to deal with the musical aspect of the subject in question. They have from time to time conferred with other eminent organists not on the committee, who have confirmed their opinions and verified their experience.

Many of the conclusions arrived at in the report may occasion some surprise, but it was felt both by the architects and musicians that if there is to be any improvement in the arrangement of churches it must be in the directions indicated. They desired, however, to leave the method of development to the genius of the architect and the enterprise of building committees. Their "Recommendations" have been framed for an ideal church of large dimensions, where there are no restrictions, and



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unlimited funds at the disposal of the fortunate architect. It is obvious, for instance, that only in a church exceeding 150 feet in length could the height be so proportioned as to allow "Recommendation No. 4" to take effect, and ample height is so necessary that the committee consider the roof of the nave and chancel should be continuous. This, the usual "chancel arch" arrangement does not contemplate, and the avoidance, therefore, of the low divisional arch, and the adoption of other methods to mark the division between nave and chancel, is recommended.

The committee have advisedly refrained from giving any definite opinion as to where the organ should be placed, but they were bound to state where, musically, it is found to be most effective; and the fact may serve as a guide to a right decision. The sound, moreover, is best distributed when the organ is placed under the main roof, whether it be at the west end on a "roof-loft" or at the east end, provided the other conditions laid down are also observed. Good examples of organs in these several positions are easily recalled.

Though the result of the deliberations (extending over twelve months) of the joint committee may reverse many of the notions and theories previously held, and appear opposed to accepted methods, yet they hope it may eventuate in evolving new dispositions which will meet modern requirements and, developing

ecclesiastical architecture, break away from mere archaeological trammels.—*John Belcher.*

REPORT OF THE COMMITTEE FOR ARCHITECTURAL ARRANGEMENTS AFFECTING MUSICAL REQUIREMENTS IN CHURCHES.

The general provision for the musical arrangements in modern churches has been acknowledged to be unsatisfactory, and the many points upon which there are conflicting opinions or increasing doubts have made it desirable that some definite principles and practical suggestions should be formulated by those competent to deal with the subject.

With this purpose in view, the Council of the College of Organists, as a consequence of Mr. Belcher's excellent paper on the subject of "Musical Requirements in Church Planning," read before the Royal Institute of British Architects, proposed to the council of that body that a committee should be jointly nominated by their respective councils to inquire into and consider the improvements and developments which might be adopted in the future.

The Council of the College of Organists nominated on their part certain Fellows of their College, viz.: Dr. Martin, of St. Paul's Cathedral; Mr. Walter Parratt, of St. George's Chapel, Windsor; Mr. James Higgs and Dr. Turpin. The Council of the Royal Institute of British Architects nominated on their part certain Fellows of their Institute, viz.: Messrs. J. Belcher, R. H. Carpenter, J. D. Sedding, H. Stannus, and H. H. Statham.

The committee added to their number Mr. Somers Clarke, Dr. F. E. Gladstone, and Rev. W. Russell, succentor of St. Paul's Cathedral, as authorities on many points of importance.

The committee have also had the advantage of a conference with Mr. Micklethwaite, and Mr. St. John Hope.

After a careful review of the arrangements which are now usually made for the accommodation of the choir and organ, the committee desire to record the following observations:

- (a) That the arrangements are generally defective.
- (b) That there is much misconception as to the best positions for the choir and organ in their relation to each other and the congregation.
- (c) That the space allowed for the modern organ is often insufficient.
- (d) That on musical grounds the old position at the west end for both organ and choir is, in general, the best.
- (e) That although for ritual purposes (following the ancient English Cathedral and Collegiate arrangements) a vested choir is placed in the chancel, yet, that where there is a chancel arch, central lantern, or transepts, the sound becomes intercepted instead of passing into the body of the church; moreover, where the chancel is narrow, antiphonal singing cannot produce its proper effects.
- (f) That when the placing of the choir in the chancel (according to recent custom) has involved the removal of the organ also, it has usually resulted in cramping the organ within some confined space, or "chamber," by which the tone has been damaged, and its beautiful qualities and real efficiency impaired.
- (g) That the arrangement alluded to above is not the most advantageous for the support and encouragement of congregational singing.
- (h) That these defects are more or less the result of adapting new customs and requirements to old buildings and are not always to be avoided.
- (i) That as a result of the general improvement in knowledge and taste, the increased facilities for the musical rendering of the services, and the more frequent bringing together of large bodies of singers and instrumentalists, the provision of better accommodation for them is a problem which must be considered.

AS TO NEW CHURCHES.

The main object of this committee is to promote the improvement and development of the arrangements of new churches, and they have taken as their basis the musical requirements of a large town church; these requirements would necessarily be modified for small town or country churches.

There would appear to be but five positions in which the choir can be conveniently placed in a church:

- (1) At the west end of the nave.
- It is commonly admitted by musicians that the most effective position for the organ is at the west end; but this position is not always advisable, if the choir be retained in the chancel.
- (2) In galleries facing each other in the nave.
- The advantages claimed for seating the choir in galleries (sim-

ilar to the ancient "minstrel galleries") on the north and south sides of the nave are as follows: (a) the better support of congregational singing; and (b) the opportunities afforded for antiphonal effects.

- (3) Immediately outside the chancel screen.
- (4) In the chancel aisles.
- (5) In the chancel.

With regard to these latter positions, it is advisable, in planning a new building, in order to obtain the openness and space requisite for the sound to reach all parts of the building, that a "chancel arch" should be avoided, and the choir thus placed under the same roof as the congregation. This will enable the clergy as well as the choir to be properly heard.

In churches exceeding 150 feet in internal length the plan of placing the main choir at the west end, and a "ritual choir" in the chancel, may be adopted.

AS TO EXISTING MODERN AND ANCIENT CHURCHES.

In dealing with existing churches, whether ancient or modern, the principles set forth in the "Recommendations" should, as far as possible, be observed; but each case should be individually considered. In those places (for example) when there remain a western organ and gallery of interest, at a distance of not more than fifty feet from the choir seats in the chancel—it is desirable that such should be retained *in situ* and used; and where the distance is more than fifty feet, a small additional eastern organ to support the choir is recommended.

In buildings lacking adequate height, a position should be chosen for the organ which will give the best available space for sound to develop itself above the pipes and to pass into the nave.

The committee have carefully considered and have drawn up principles of the subject before them, and have formulated the following "Recommendations," which have been agreed to by every member.

RECOMMENDATIONS.

- No. 1. That the organ and the choir be so placed in the church that they may most effectually assist in the services.
- No. 2. That it is essential to acoustic success that in the erection of new churches ample height should be provided for.
- No. 3. That in arranging any position for the organ, ample space should be allowed as regards area, "speaking-room," and height.
- No. 4. That no "open-flue" pipe should have less than its own speaking length (the speaking length of an "open-flue" pipe is the length from the slit or mouth above the conical foot up to the top of the pipe) above it.
- No. 5. That the organ should be concentrated, and not divided into two or more parts at a distance (excepting to place the choir organ in advance of the main instrument in the architectural design of the case.)
- No. 6. That the ground space to be provided for an organ, exclusive of engines employed as blowing apparatus, should not be less than 600 superficial feet for an organ of 60 stops, of 310 superficial feet for an organ of 40 stops, and of 180 superficial feet for an organ of 20 stops.
- No. 7. That the organ should never be placed in a "chamber," but that the best position for an organ is that which has a sufficiency of open space above it and on three sides, and a solid unpierced wall at the back.
- No. 8. That the term "organ place" be adopted, because it is more comprehensive (including gallery, etc.) and because the term "organ chamber" is misleading, inasmuch as a chamber (or enclosed place) has been determined to be *not* suitable for an organ.
- No. 9. That the internal surface of the roof above the organ should not be of wood, but of stone, plaster, or other non-absorbent material.
- No. 10. That in order to avoid noise and economize space, the organ "feeders" should be placed at some convenient distance from the organ, and outside the main body of the building.
- No. 11. That the air supplied to the "feeders" must be derived directly from the church itself, in order to obtain the same temperature.
- No. 12. That the organ should be placed at a short distance from the choir, and that the best distance is about twenty feet.
- No. 13. That the organ should never be placed between the choir and congregation.
- No. 14. That the sound of the organ should not have to pass over one-half of the choir to reach the other.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

ADMINISTRATION BUILDING.
PRESTON SCHOOL OF INDUSTRY.
ONE AMADOR CO. CALIF.

HENRY A. SCHVLZE ARCHITECT.
94 FLOOD BUILDING.
SAN FRANCISCO.



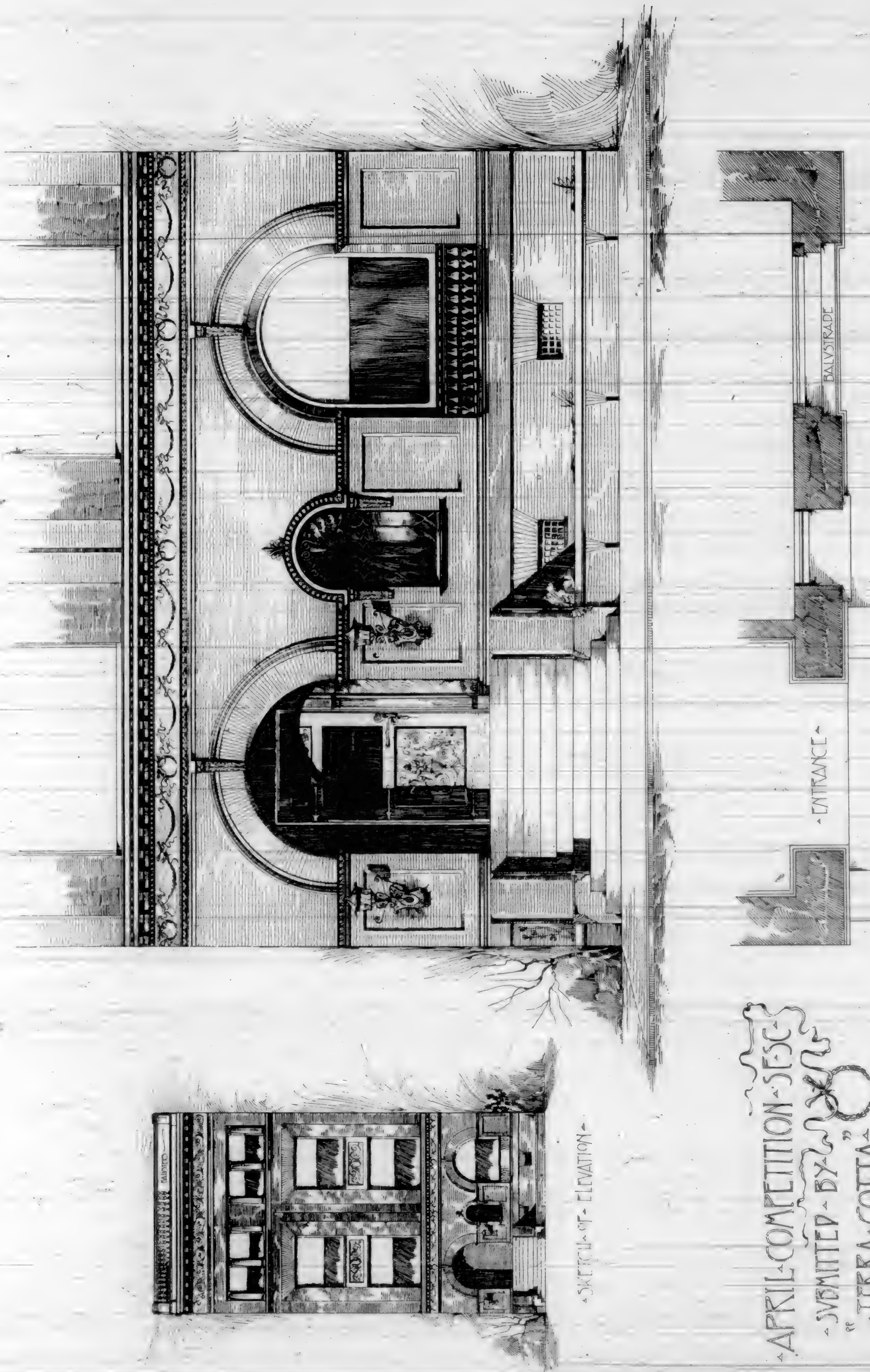
JULY, 1891.

VOL. XII, No. 7.

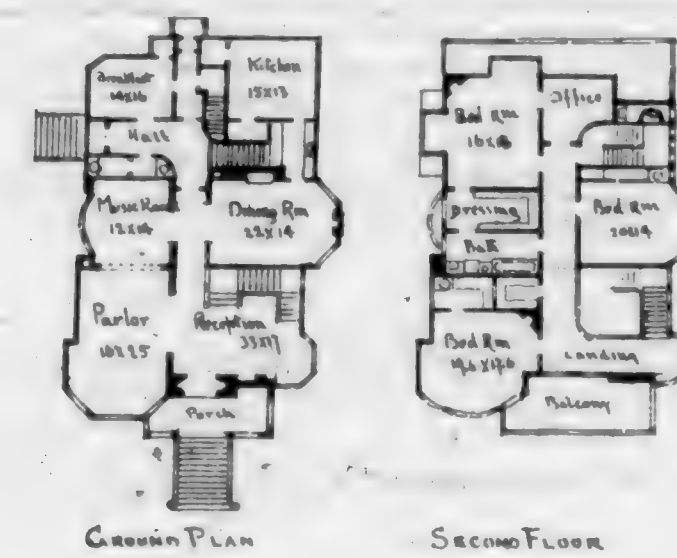
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



MISSION OF SAN ANTONIO.



APRIL COMPETITION - 1890
 SUBMITTED BY
 "TERA-COTTA"



RESIDENCE OF MRS M. A. FRITZ
 ASHBURY HEIGHTS
 SAN FRANCISCO CAL.
 A. J. BARNETT ARCHITECT

No. 15. That when possible the organ should be equidistant from both halves of the choir.

No. 16. That the choir be placed on raised floors, or in low, projecting galleries architecturally treated.

No. 17. That the height of the platform, steps or gallery on which the choir is placed should be regulated by the length of the church.

No. 18. That provision should be made for the accommodation of large bodies of voices for special occasions to be seated in due musical relation to the choir and organ.

No. 19. That it is desirable in churches of adequate size that provision should be made for an orchestra on special occasions.

No. 20. That the orchestra should be in the organ gallery, in front of the organ, or in some similar and approximate position.

The Committee in framing the foregoing "Recommendations" for the guidance of those about to erect large churches, have made them as general and as wide as possible, that the same principles may be followed in the erection of small churches or alterations of ancient ones.

(Signed) F. E. Gladstone,
George C. Martin,
Walter Parratt,
James Higgs,
E. H. Turpin,
W. Russell,

John Belcher,
R. Herbert Carpenter,
Somers Clarke,
J. D. Sedding,
Hugh Stannus,
H. H. Statham.



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

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

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

The double page illustration of the Administration Building for the Preston School of Industry, at Ione, Amador County, California, is from the design of Mr. Henry A. Schulze, Architect, of this City.

The residence for Mrs. M. A. Fritz, on "Ashbury Heights," is from designs by Mr. A. J. Barnett, Architect, of this City.

For the April competition of the San Francisco Sketch Club, "Terra-Cotta" was awarded first mention. This design was submitted by Mr. Wm. H. Topkee.

The cuts J and K are from the terra cotta capitals from the Museum of Natural History at Kensington, England.



BITS OF CANTERBURY CATHEDRAL. Drawn by Walter Talant Owen. 1 vol., 12 plates; size, 6x9½; illuminated boards. Price, \$1.00. New York: Wm. T. Comstock, 1891.

The history of Canterbury Cathedral, as well as the variety and beauty of its architecture, renders it one of the most interesting in England. The site upon which the cathedral stands was early consecrated to Christian worship, as there are records showing the existence, in the second century, of a church used by the Roman Christians. From this small beginning grew the present magnificent building. St. Augustine in the sixth century, and Archbishop Cuthbert in the latter part of the eighth, were the earlier builders, and the succeeding ages had the help of Odo, Lanfranc and Anselm in repairing, rebuilding and enlarging.

The styles of the different periods have all had an opportunity for display, and the cathedral to-day exhibits nearly all the classes of Norman architecture, while parts are impressed with the purely English style. It was here that, after the fire in 1174, the pointed arch was first introduced into England, having been employed by certain artists or artificers summoned from France, and here also are seen some of the best and most characteristic forms of purely English window tracery found in the cathedrals of England.

The church formerly was rich in saintly relics, and tragic memories lurk by every arch and column. Many famous tombs still exist, and, although the shrine of Thomas à Becket was destroyed centuries ago, the curious mosaic pavement which led to the shrine still remains, and the stone steps, worn by the knees of countless pilgrims, stand as a monument not only to the martyr but expressive of the religious freedom that followed. The crypt is famous from having been opened by Elizabeth for a refuge from Spanish persecution for French and Flemish Protestants, who, for a long time, carried on silk-weaving there.

It is easy to understand the attraction that this place has for the traveler, be he artist or layman, and this little book is a record of a few things seen and appreciated by Mr. Owen during a brief visit to Canterbury. There is a view of the entire cathedral, and of the separate "bits" that follow a glimpse of the pinnacles through Mercery Lane, and the "Bell Harry," which is the central tower of the cathedral, and so called from a small bell hung in the top. This was formerly the "Angel Steeple," having a gilt figure of an angel crowning it, and is said by Ferguson to be, for poetry of design and beauty of proportion, the best in England, and superior to any of its class to be found elsewhere.

A view of the cloisters, the northwest tower, baptistery, turret on southwest transept, Norman stairway, ruins of old cloisters, and the Prior's gateway, are among the plates. Before each plate is a title page, adorned with some detail of construction, or of some ornament or object in the building. Among these will be found mosaics from the floor, panel from ceiling, wrought iron work, carved woodwork, a chair, a hinge, and the armor of the Black Prince.

Mr. Owen exhibits a fine and discriminating taste in his selection of various subjects for his sketches, and shows his ability as a draughtsman to be of high order. The drawings are well reproduced upon fine paper, and aside from the pleasure to be drawn from a casual inspection, they will be of practical service to those who wish them for a study.

We have received several numbers of an Architectural publication from Tokio, Japan. In comparison with the publications as usually seen the Japanese journal makes a favorable showing. To read the book we must begin at the last page and read towards the front. The latest number contains articles on various subjects, as follows: Japanese Imperial flag; designing of Japanese tea room; on sand stone recently discovered; lesson in shading; Egyptian Architecture; the principle of building in Japan 2000 years ago; New York buildings 1890; fires in theatres 1890, in Europe and America; fires in Tokio; building laws; and marbles in the U. S. We are indebted to Mr. K. Shimoda, a Japanese architect of this city for the translation of contents.



The wheat field on the Glenn ranch in Colusa County is twenty-six miles in length by twelve miles in breadth. These large tracts of land will before long be cut up into farms of suitable size for families.

Near Hamilton, Washington, there are large timber tracts of "birds eye" maple for suitable size for lumber, and preparations are being made for placing this beautiful variety of hard wood in the market.



MODEL OF STATUE OF "WORLD BUILDING."
Carl Bitter, Sculptor.

At the meeting of the Technical Society of the Pacific Coast held in June, the Hon. Warner Miller, president of the Nicaragua Canal Company, addressed the Society on the subject of the Canal, its history, and the financial difficulties which had been overcome. Commander Taylor of the U. S. Navy gave a technical description of the Engineering features of the work, entering into the details of its construction and manner of working. The remarks were accompanied with maps and diagrams illustrating the methods and progress of the work. On the following day by special invitation of Mr. Adolph Sutro, the Society was entertained at his grounds on Sutro heights which commands a view of the Pacific ocean and the Golden Gate. At this place we viewed the process of raising water without the aid of machinery, from the ocean to a height of fifteen feet to supply three large aquariums with salt water.

After lunch the speeches were rife with technical and engineering points. Mr. Sutro gave an account of the great Sutro tunnel under the gold and silver mines in Nevada and which was carried to a successful termination by himself after having overcome difficulties that seemed insurmountable. Hon. Warner Miller and Commander Taylor addressed the assembly and pointed out many features of resemblance between the great tunnel which had been finished and the Canal which is now under construction.

Mr. Sutro stated that to carry out the great project only three things are necessary, first—plenty of money, second—more money, third—more money. After looking through the grounds the members returned to the city.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

SETH BABSON, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

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

JOHN RICHARDS Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
C. E. PURINGTON, Sec. W. C. CROSETT, Treas.

BUILDERS' ASSOCIATION OF CALIFORNIA, meets every Monday at 330 Pine Street, Rooms 9-12, at 1.30 P. M.

S. H. KENT, Pres. P. G. MARTIN, Vice-Pres.
A. JACKSON, Sec'y. WM. B. KREGER, Treas.
L. A. LARSEN, Clerk and Financial Sec'y.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.
E. M. GALLAGHER, Pres. H. G. JARMAN, Sec.

LEGAL DECISIONS.

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

REFUSAL OF ARCHITECTS TO ISSUE CERTIFICATES.—Where the contract of a builder provides that he shall only be entitled to payment on account of the work thereunder upon the certificate of the architect that the work so far as completed has been done in accordance with the provisions of the contract, the right of the contractor to earned payments cannot be defeated by the mere arbitrary refusal of the architect to issue such certificates. The contractor may recover upon showing that he has so complied with the contract that the architect should have issued the certificates, as the certificates are only intended as an evidence of compliance.

Micholis vs. Wolf, Supreme Court of Illinois, 26 N. E. Rep. 384. (113—C)

DELAY OF BUILDING CONTRACT BY OWNER.—Where a building contract provides for a penalty to be enforced against the contractor for failure to complete the building within a specified time, before the owner can enforce the penalty he must establish the fault of the contractor, and where it appears that something was to be done by the owner which he failed to do, the delay resulting from his failure, he cannot assert the penalty as he, and not the contractor is in fault. Courts look with distrust on penalty clauses, and will avoid them whenever possible.

Huckenstein vs. Kelly & Jones Co., Supreme Court of Pennsylvania, 21 At. Rep. 78. (104—C)

LIABILITY FOR SAFETY OF PREMISES.—When the owner of premises which are under his control employs an independent contractor to do the work upon which from its nature is likely to render the premises dangerous to persons who may come upon them by invitation of the owner, the owner, by reason of the contract, is not relieved from the obligation of seeing that due care is used by the contractor to protect such persons. The owner cannot continue to hold out the invitation without being bound to exercise due care in keeping the premises reasonably safe for use according to the invitation. A landlord who contracts with a plumber to perform work requiring excavations about the premises is liable for injuries sustained by a visitor to one of the tenants from falling into an excavation negligently left unguarded by the contractor.

Curtis vs. Kiley, Supreme Judicial Court of Massachusetts, 26 N. E. Rep. 421. (146—C)

LIABILITY OF SUBCONTRACTOR FOR DEFECTIVE WORK.—The owners of a piece of land contracted with a builder to erect a building according to plans and specifications prepared by an architect, and to provide all the materials therefor. They subcontracted with a mason for the mason work and materials. The builder sued them on their contract to recover damages for defective work and materials, including defects in the mason work. They gave the mason notice in writing of the pendency and object of the suit, and requested him to come in and help defend. He did not unite in the defense of this suit, and plaintiffs defended alone. At the trial, by direction of the court, the jury, by their verdict, specified how much of the damages awarded was for the defects in the mason work, and how much for other work. The builder entered his judgment for the gross amount of damages awarded him, ignoring the special findings of the jury apportioning the damages. The owners not having paid the builder's judgment, bring an action against the mason on his subcontract, in which it is held by the court (1) that the verdict was competent evidence of the special finding of the jury of the amount of damages awarded against the owners for defects in the mason work; (2) that the plaintiffs might maintain this suit, and have damages awarded to them for damages recovered of them for defect in the mason work in builder's suit, without paying the judgment he recovered against them; (3) that the defendant, having notice of that suit, was concluded by the record in that suit with respect to the fact that the mason work was done in compliance with the plans and specifications, and that, in consequence thereof, the damages as found by the jury accrued therefrom, and as to all matters of defense against the demands of the builder that might have been presented in that suit; but (4) that the mason might insist and prove that his contract with the owners did not in that respect embrace the liability the plaintiffs incurred under their contract with the builder, and that the defective workmanship or materials used in the mason work were occasioned by the owner's own acts.

Hoppaugh vs. McGrath, Supreme Court of New Jersey, 21 At. Rep. 106. (370—C)

LIABILITY OF CONTRACTOR FOR SAFETY OF SCAFFOLD.—Where a contractor provided his workmen with proper material in sufficient quantities to construct a scaffold to be used in work on which they were engaged for him, he is not liable for damages resulting from an error of judgment by the foreman in selecting a particular piece for a particular place in which it proved to be insufficient, by reason of which the scaffold fell, and a workman was injured.

Ross vs. Walker, Supreme Court of Pennsylvania, 21 At. Rep. 156. (85—C)

RIGHT TO REJECT LOWEST BID.—Where the statute governing the letting of contracts for public works provides that such contract shall be let to the lowest responsible bidder, and the advertisement for bids reserves the right to accept or reject all bids as the best interests of the city may demand, all the bids may be rejected and another advertisement made, without in any manner incurring any liability to the lowest responsible bidder under the first advertisement.

American Artificial Stone Pavement Co. v. Wagner, Supreme Court of Pennsylvania, 21 At. Rep. 160. (88—C)

LIEN ON WORK ABANDONED BY OWNER.—Where "material" required for the construction or completion of a building is prepared or manufactured therefor by a contractor, in conformity with the terms of a contract between him and the owner, and

the work of preparation and furnishing proceeds at the yard or shop of the contractor with the express or implied consent of the owner, such work of preparation and manufacture should be deemed a part of the construction or "furnishing" under the contract, and in such case it is immaterial, as between the parties to the contract, in respect to the contractor's right to a lien, subject to the final completion of the contract, that the work was not done on the premises. And where the work of construction is thus in progress, no loss of lien for what has already been done under the contract is occasioned where the work is stopped or abandoned through the fault of the owner. The purchasers or assignees of the owner, who purchase expressly subject to such claims for liens, will be bound thereby, and stand in his shoes; and if they refuse to permit the contractor to complete the work, he will be entitled to a lien to the extent of the loss sustained.

Howes vs. Reliance Wire-Works Co., Supreme Court of Minnesota, 48 N. W. Rep. 448. (203—C)

BUSINESS MOSAICS.

When thou art the only purchaser then buy; when other buyers are present be thou nobody.

Hardwood lumber for furniture and natural wood finish can be obtained in any quantity to suit, from the E. D. Albro Co., Cincinnati, Ohio. This firm has a world wide reputation in that line.

The Pullman Sash Balance is a great improvement over any other spring balance, and is rapidly gaining on the weight and cord system.

The J. L. Mott Iron Works of New York and Chicago, so long known for the excellent quality and finish of any article manufactured by them, have established an office in San Francisco, in the Flood Building on Market street, Room 44.

Gas Fixtures and hardwood mantels in all the latest styles, and in great variety can be seen at the elegant show rooms of the California Gas Fixture Co. 123 Geary street.

We invite the attention of Architects and other interested parties to the *Bostwick Patent* steel lath which is made in a manner to form a firm key for the plastering and without unnecessary waste of material. See advertisement.

The Sidney Norris Co. are making special sash pulleys for all requirements. These pulleys have grooves for ropes, chains, ribbons, or for any other purpose. The quality and finish of these pulleys have given universal satisfaction wherever used, and have therefore become the standard pulley.

Belts and Dressings. Belts should be cleaned regularly, and after cleaning, a good belt-dressing should be applied to keep the belt soft and elastic, and cause it to hug the pulley and transmit its greatest power. The use of a good belt-dressing is superior in economy to any other method for correcting a slipping or slightly loose belt. The custom of tightening a belt whenever it slips is not a good one. The belt is liable to be made too tight, which heats the bearings and strains the belt. Great care, however, should be taken in selecting a belt-dressing. Castor oil is an article in very general use, but experts have found that it contains an active acid principle, and is drying in its nature. The use of soap, rosin, tar, etc., cannot too strongly be condemned. They are only temporary stimulants and eventually destroy the belt. A belt-dressing that is guaranteed to prevent slipping, and at the same time to keep the leather soft and elastic, is certainly worthy of careful consideration. Such is Dixon's Belt-Dressing, made and sold by the Jos. Dixon Crucible Co., Jersey City, N. J. There is no trouble in applying it, and all who have used it commend it in the highest terms.

The weakness of thy walls invites the burglar.

TENDERS TO BE RECEIVED.

TREASURY DEPARTMENT.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 23rd day of July 1891, for the labor and materials required for sidewalks, street curbs and gutters, of the approaches to the U. S. Court House, Post Office &c., building at Carson City, Nevada, in accordance with specification and drawing, copies of which may be had on application at this office or the office of the Custodian at Carson City, Nevada.

Each bid must be accompanied by a certified check for \$100. The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for work on the Approaches to the U. S. Court House, Post Office &c., Building at Carson City, Nevada," and addressed to

W. J. Edbrooke,
June 29, 1891. Supervising Architect.

TREASURY DEPARTMENT.

Sealed proposals will be received at the Office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 28th day of July, 1891, for all the labor and materials required for the iron stairs, iron work, &c., of elevator shaft, for the U. S. Court House, Post Office, &c., building at Denver, Colo., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Denver, Colorado.

Each bid must be accompanied by a certified check for \$200.00.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for iron stairs, &c., for the U. S. Court House, Post Office &c., building at Denver, Colorado," and addressed to

W. J. Edbrooke,
July 3, 1891. Supervising Architect.

CITY BUILDING NEWS.

Baker and Grove. To build; owner, Mary J. Raymond; architect, W. H. Little; contractor, Geo. R. Lang; cost, \$17,000; signed, June 22; filed, June 24; payments, 1st and 15th of each month, 75 per cent as work progresses; 25 per cent 35 days.

Bryant between 23rd and 24th. To build; owner, Eliza Wideman; architect, Geo. Houston; contractor, Geo. Houston; cost, \$2,015; signed, June 18; filed, June 17; payments, \$733, shingles on; \$728, brown mortared; \$728, white plastered; \$731, 35 days.

Bowie avenue near 11th St. Additions; owner, Mich'l Henly; architect, M. J. Welsh; contractors, Cuneo & Casaretto; cost, \$1800; signed, June 23; filed, June 21; payments, \$600, brown mortared; \$600, completed; \$600 35 days.

Buchanan near California. Carpenter work; owner, Katie E. Pelton; architect, John C. Pelton Jr.; contractor, Wm. Little; cost, \$1675; signed, June 17; filed, June 22; payments, 1st and 15th day of each month, 75 per cent as work progresses; 25 per cent 35 days.

Bush near Lyon. To build; owner, W. I. Morgan; architect, W. H. Little; contractor, Arthur C. Soule; cost, \$2050; signed, June 9; filed, June 9; payments, \$384, frame up; \$384, brown mortared; \$384, standing finish on; \$384, completed; \$384, 35 days.

Bush near Steiner. Alterations; owner, Henry Freitag; architects, Gellfuss Z. & Co.; contractor, Henry Rohling; cost, \$2363; signed, June 16; filed, June 19; payments, 1st and 15th day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

California near Van Ness av. Alterations; owner, Bertha Wolfe; contractor, John J. O'Brien; surety, \$600; cost, \$1,050; signed, June 17; filed, June 19; payments, \$35, brown mortared; \$350, completed; \$290, 35 days.

Castro, near 21th. To build; owner, Mrs. F. S. Downing; architect, A. Klahn; contractor, H. Klahn; cost, \$1,150; signed, June 16; filed, June 18; payments, \$1,100, 35 days after completion.

Clay near Buchanan. Carpenter work, etc.; owner, Chas. L. Watson; architects, Percy & Hamilton; contractors, Simile Bros.; cost, \$1,732; signed, June 22; filed, June 25; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Clay near Buchanan. Concrete work, etc.; owner, Chas. L. Watson; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, \$8,100; signed, June 18; filed, June 25; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Clay and Larkin. Alterations; owner, H. Prohl; architect, J. J. Clark; contractor, John T. Hayes; surety, \$970; cost, \$3,850; signed, June 25; filed, June 29; payments, \$80, foundation in; \$1,000, brown mortared; \$1,000, painting completed.

Devisadero near Pine. Carpenter work; owner, George M. Davis; architect, W. O. Banks; contractor, Herman Hansen; cost, \$8,407; signed, June 17; filed, June 17; payments, \$4,827, brown mortared; \$2,000, completed; \$2,110, 35 days.

Devisadero near Sacramento. Carpenter work, etc.; owner, Annie A. Kelly; architect, W. H. Little; contractor, White Bros.; cost, \$5,550; signed, June 9; filed, June 22; payments, \$1,432, entire frame up; \$1,432, enclosed; \$1,432, brown mortared; \$1,432, 50, accepted by architect; \$2,387, 50, 35 days after completion.

Devisadero near Sacramento. Plumbing; owner, Annie A. Kelly; architect, W. H. Little; contractor, W. H. Tobin; cost, \$1,100; signed, June 9; filed, June 22; payments, \$435, pipes laid; \$335, work completed; \$290, 35 days.

Douglas near 24rd. To build; owner, Nathaniel Burpee; contractor, Wm. Belyea; cost, \$2,000; signed, June 23; filed, June 23; payments, \$500, frame up and roof ready for shingling; \$500, brown mortared; \$500, completed; \$500, 35 days.

Drumm near Washington. Mason work; owner, F. W. Kerr; architects, Smith & Freeman; contractor, Ferdinand Wagner; cost, \$1,518; signed, June 17; filed, June 25; payments, \$1,261, 2nd story joists on; \$1,000, ceiling joists on; \$1,000, completed; \$1,087, 35 days.

Elm ave near Franklin. Alterations; owner, P. Muldoon; architect, Chas. J. Devlin; contractors, J. Peterson et al; cost, \$1,800; signed, June 22; filed, June 23; payments, \$25, building raised and moved; \$500, brown mortared; \$550, ready to paint; \$100 completed; \$100, 35 days.

Fell and Baker. Painting; owner, Monroe Greenwood; architect, F. B. Wood; contractor, Geo. V. Daniels; cost, \$1,173; signed, May 25; filed, June 30; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Filbert between Octavia and Laguna. To build; owner, Geo. Werner; architect, H. D. Mitchell; contractor, M. S. Yerxa; cost, \$8000; signed, June 10; filed, June 11; payments, \$750, foundation joists laid; \$1500, frame up and chimneys up; \$1200, enclosed and roof on; \$1500, rough plumbing and brown mortar on; \$1050, completed; \$2000, 35 days.

First near Mission. Carpenter work; owner, C. F. Marwedel; architect, J. E. Kraft; contractors, Fletcher & Smith; surety, \$8000; cost, \$3542; signed, June 27; filed, June 30; payments, \$1000, roof sheathed and tinned; \$1500, plastering finished; \$1043, accepted; \$1400, 35 days.

First near Mission. Brickwork, etc.; owner, C. F. Marwedel; architect, J. E. Kraft; contractor, D. J. Brennan; surety, \$4000; cost, \$6851; signed, June 16; filed, June 19; payments, \$1500, basement walls and piers for 1st floor are up and joists and sidewalk arches built; \$1000, walls to 3rd floor, joists built; \$1000, entire walls built; \$1500, finished; \$1754, 35 days.

Folsom Street, No. 1209. Additions; owner, James S. Coleman; architect, Oliver Everett; contractor, Jno. J. O'Brien; cost, \$2334; signed, July 1, filed July 1; payments, \$1617, brown mortared; \$805.50, completed; \$808.50, 35 days.

Folsom and Fifth. To build; owner, R. P. Hind; architect, H. T. Bestor; contractor, W. H. Wickersham; cost, \$15670; signed, June 18; filed, June 19; payments, \$1200, 2nd floor joists on; \$1800, frame up; \$2200, roof on and floors laid; \$2500, brown mortared; \$2200, white mortared; \$2500, completed; \$3970, 35 days.

Folsom and Sixth. Brickwork, etc.; owner, Geo. H. C. Beckerdorf; architect, J. E. Kraft; contractor, Oscar Lewis et al; surety, \$3000; cost, \$600; signed, June 25; filed, June 24; payments, \$275, excavation done and basement walls built; \$800, brickwork done and chimneys built; \$1000, work finished; \$1525, completed.

Folsom and Sixth. Brickwork, etc.; owner, Oscar Lewis et al; architect, J. E. Kraft; contractors, Martin Fennell & Son; surety, \$3000; cost, \$6100; signed, June 23; filed, June 24; payments, \$275, excavation done and basement walls built; \$800, brickwork and chimneys built; \$1000, work finished; \$1525, completed.

Folsom near Eleventh. To build; owner, Verzin Eintracht; architect, Bernard Dreyer; contractor, Bernard Dreyer; surety, \$10,000; cost, \$20,963; signed, June 6; filed, June 9; payments, \$3900, frame up; \$3900, rough mortared; \$3900, white plastered; \$3900, finished; \$5863, 35 days.

Folsom between Eleventh and Twelfth. Plumbing; owner, J. Platz; contractor, Bernard Dreyer; cost, \$2080; signed, June 27; filed, June 30.

Francisco and Dupont. To build; owner, Frederico Lavotti; architect, E. Depierre; contractors, W. L. Nelson & Co.; surety, \$1000; cost, \$3240; signed, June 23; filed, June 25; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Franklin and O'Farrell. Brickwork; owner, W. B. Anderson; architect, T. J. Welsh; contractor, R. Ringrose; cost, \$2340; signed, June 6; filed, June 8; payments, \$877.50, when one 1/2 of contract is completed; \$877.50, completed; \$585, balance, 35 days after completion.

Franklin near Washington. Painting; owner, Sophie Wieland; architect, W. Winterhalter; contractor, Wm. G. Koch; cost, \$1012; signed, June 18; filed, June 26; payments, \$550, outside finish and work is painted two coats and ready for graining; \$100, accepted; \$250, 35 days.

Franklin near Washington. Plumbing; owner, Mrs. Sophie Wieland; architect, W. Winterhalter; contractor, Duffey Bros.; cost, \$1440; signed, June 9; filed, June 10; payments, \$390, sewerage done and gas and water pipes in; \$580, completed; \$300, 25 days.

Front near Pacific. Sidewalk elevators; owner, Jas. G. Fair; architect, H. A. Schultze; contractors, Cabill and Hall; cost, \$1140; signed, May 28; filed, June 6; payments, first day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Front near Pacific. Sidewalk elevators; owner, Jas. G. Fair; architect, H. A. Schultze; contractors, Cabill and Hall; cost, \$1860; signed, May 26; filed, June 6; payments, first day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Geary near Octavia. Alterations; owner, G. Kordmeyer; architect, P. L. Schmidt; contractor, J. J. O'Brien; cost, \$2,763; signed, June 23; filed, June 24; payments, 75 per cent as the work progresses; 25 per cent, 35 days.

Geary and Polk. Mason Work etc.; owner, Cora A. Wallace; contractor, D. T. Pierce; surety, \$1,000; cost, \$3753; signed, June 23; filed, June 25; payments, \$2,400, basement finished; \$413, brick chimneys finished; \$940, 35 days.

Gibbs Place 110 East Kearney. Tinwork etc.; owner, Magdalena Iis; contractor, Wm. Schreiner; cost, \$1,255; signed, June 15; filed, June 19; payments, \$632.50; tinwork and galvanized skylights; \$316.25, completed; \$316.25, 35 days.

Golden Gate Ave. near Webster. To build; owner, Anton Lematre; architects, John and Balczynski; contractor, Louis M. Weissmann; cost, \$3674; signed, June 6; filed, June 6; payments, \$1100, frame up; \$1100, enclosed and partitions set; \$1100, white plastered; \$1,100, finished and accepted; \$1,174, 35 days.

Golden Gate Ave. near Webster. To build; owner, Geo. Schafer; architects, John & Balczynski; contractor, Louis M. Weissmann; cost, \$3674; signed, June 6; filed, June 6; payments, \$1100, frame up; \$1100, enclosed and partitions set; \$1100, white plastered; \$1100, finished and accepted; \$1474, 35 days.

Green near Kearny. To build; owner, Chas. Lagrane; architect, C. M. Rousseau; contractor, W. J. Kearns; surety, \$2000; cost, \$4966; signed, June 11; filed, June 24; payments, \$741.20, concrete work done; \$741.20, frame up; \$741.20, brown mortared; \$741.20, white coated; \$741.20, completed; \$1250, 35 days.

Green near Leavenworth. Mill work etc.; owner, Geo. Simmerton; architect, S. Hatfield; contractor, Chas. Seranton; surety, \$4000; cost, \$8318; signed, June 10; filed, June 15; payments, \$1000, frame up; \$1000, roof boards on; \$1200, ready for lathing; \$1438, roof tinned and outside stairs on; \$1500, completed; \$2080, 35 days.

Green and Leavenworth. Plumbing; owner, Geo. Summerton; architect, S. Hatfield; contractor, F. Kraus; cost, \$1100; signed, June 25; filed, June 30; payments \$450, sewers laid; \$750, finished; balance, 35 days after completion.

Hayes between Devisadero and Broderick. Carpenter work etc.; owner, Pauline M. Steiger; architect, J. R. Miller; contractor, J. F. Logan; cost, \$5325; signed, June 23; filed, July 1; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Hill and Sanchez. To build; owner, Albert Bolz; architect, Albert Bolz; contractors, G. Patterson et al; cost, \$2240; signed, May 28, filed, June 5; payments, \$625, frame up; \$625, brown mortared and outside finished; \$625, completed; \$625, 35 days.

Howard St. No. 2132. Carpenter work; owner, Elizabeth Weindorf; architects, Martens & Coffey; contractors, Droge & Munster; cost, \$4400; signed, June 13; filed, June 18; payments, \$825, 1st story studding set; \$825, brown mortared; \$827, white mortared; \$825, completed; \$1100, 35 days.

Howard near 2nd. Brickwork etc.; owners, D. L. Bliss et al; architect, H. A. Schultze; contractors, Shain & Hoffman; cost, \$3947; signed, May 23; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Cast iron work; owner, D. L. Bliss et al; architect, H. A. Schultze; contractors, O'Connell & Lewis; cost, \$1900; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Mill work etc.; owner, D. L. Bliss et al; architect, H. A. Schultze; contractor, John T. Grant; cost, \$7666; signed, May 28; filed, June 9; payments, 1st day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Plumbing; owners, D. L. Bliss et al; architect, H. A. Schultze; contractors, Duffey Bros.; cost, \$1150; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Skylights etc.; owners, D. L. Bliss et al; architect, H. A. Schultze; contractors, Conlin & Roberts; cost, \$1650; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Wrought iron work; owner, D. L. Bliss et al; architect, H. A. Schultze; contractor, Calvin Nutting; cost, \$1,330; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 6th. Alterations; owner, Sophie Koester; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, \$4,450; signed, June 24; filed, June 24; payments, \$2,112.50, partly raised and cellar dug out; \$2,112.50, ready for plastering; \$2,112.50, completed; \$2,112.50, 35 days.

Howard near Sixth. Concrete work, etc.; owner, Jas. Cochran; architect, O. Everett; contractors, Ransome and Cushing; cost, \$4,327; signed, May 30; filed, June 16; payments, \$1000, basement and walls in; \$1,000, side walk arches in; \$1,000, completed; \$1,327, 35 days.

Howard and Sixth. Mill work etc.; owner, Jas. Cochran; architect, O. Everett; contractor, Henry Keltner; cost, \$2,550; signed, May 23; filed, June 16; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Howard and Sixth. Painting; owner, Jas. Cochran; architect, O. Everett; contractor, L. Paint; cost, \$1,600; signed, May 30; filed, June 16; payments, \$400, 2nd coat paint on; \$800, completed; \$400, 35 days.

Howard and Sixth. Plastering; owner, Jas. Cochran; architect, O. Everett; contractor, G. C. Sweeney; cost, \$2,150; signed, May 23; filed, June 16; payments, \$1,275, brown mortared; \$875, 50, white coated; \$875, 50, 35 days.

Howard and Sixth. Plumbing; owner, Jas. Cochran; architect, O. Everett; contractor, G. C. Sweeney; cost, \$2,150; signed, May 23; filed, June 16; payments, \$1,075, rough work in and tested; \$837.50, completed; \$337.50, 35 days.

Howard and Sixth. Wrought iron work; owner, Jas. Cochran; architect, O. Everett; contractor, Henry Keltner; cost, \$1,330; signed, May 23; filed, June 16; payments, \$450, sidewalk beams laid; \$450, 2nd payment; \$450, completed; \$450, 35 days.

Howard near Sixteenth. Plastering etc.; owner, Jas. W. Smith; contractors, Houlihan & Smith; cost, \$4,080; signed, June 22; filed, June 22; payments, \$500, brown mortar on 6 2-story buildings; \$1,000, brown mortar on 4 3-story buildings; \$350, white coat on 6 2-story buildings; \$750, white coat on 4 3-story buildings; \$1,336, 35 days.

Howard near Sixteenth. Plumbing; owner, Jas. W. Smith; contractor, G. C. Sweeney; cost, \$4,241; signed, June 11; filed, June 11; payments, \$2,000, rough work on; \$1,200, completed; \$1,041, 35 days.

Hyde near Vallejo. Carpenter work; owner, Lizzie R. Bush; architect, Gus. Hult; contractor, C. N. Smith; surety, \$750; cost, \$2,980; signed, June 4; filed, June 8; payments, \$550, frame work up; \$1,000, enclosed and partitions set; \$550, brown mortared; \$580, 35 days.

Hyde near Vallejo. Carpenter work; owner, Jos. Bush; architect, Gus. Hult; contractor, C. N. Smith; surety, \$1,400; cost, \$5,493; signed, June 4; filed, June 8; payments, \$1,000, frame work up; \$1,000, enclosed and partitions set; \$1,000, brown mortared; \$1,000, completed; balance, 35 days.

Jersey near Douglas. To build; owner, Caspar Dietrich; architect, Ernest Nagel; contractor, Ernest Nagel; surety, \$600; cost, \$1,660; signed, June 9; filed, June 12; payments, \$415, frame up; \$415, brown mortared; \$415, completed; \$415, 35 days.

Jones near Sutter. Carpenter work; owner, Moses Hopkins; architect, J. H. Littlefield; contractor, J. F. Logan; cost, \$7,763; signed, July 1; filed, July 1; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Jones near Sutter. Plumbing; owner, Moses Hopkins; architect, J. H. Littlefield; contractor, R. A. Vance; cost, \$1,075; signed, July 1; filed, July 1; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Larkin near Ellis. To build; owner, Caroline Breese; architect, H. A. Schultze; contractor, John F. Grant; cost, \$5,919; signed, June 9; filed, June 13; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Larkin near Ellis. Plumbing; owner, Caroline Breese; architect, H. A. Schultze; contractor, G. C. Sweeney; cost, \$659; signed, June 9; filed, June 13; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Leavenworth and California. To build; owner, F. Denninger; architect, P. A. Stoll; contractor, Henry Rohling; surety, \$675; cost, \$2,700; signed, June 16; filed, June 16; payments, \$675, ready for lathing; \$675, plastering completed; \$675, completed; \$675, 35 days.

Lot 351, Gift Map. To build; owner, P. C. Francis; architect, William Campbell; contractor, Wm. Campbell; cost, \$1,030; signed, June 10; filed, June 13; payments, \$200, house roofed and shingled; \$300, plastering finished; \$530, 35 days.

Lyon St. No. 1910 and 1912. Alterations; owner, L. P. Rixford and wife; contractors, Eaton and Hickman; cost \$4,000; signed, June 20; filed, June 24; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Market near 9th. Elevators; owners, Allyn and White; architect, Chas. Geddes; contractors, W. H. Birch & Co.; cost, \$1919; signed, June 25; filed, June 30; payments, \$710, joists are set and sidewalk elevator completed; \$700, completed; \$479, 35 days.

Market near Jones. Brickwork; owner, H. L. Please; architects, Salfeld & Kohlberg; contractor, Wm. Wolf; cost, \$1350; signed, June 25; filed, June 26; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Market St. and New Montgomery. Additions; owner, Sharon Estate; architect, A. Page Brown; contractor, Wm. Black; cost, \$1765; signed, June 25; filed, June 30; payments, every 2 weeks, 75 per cent of value of work done; 25 per cent, 35 days.

Market and New Montgomery. Alterations; owners, Sharon Estate; architect, A. Page Brown; contractor, R. Herring; cost, \$2300; signed, June 20; filed, June 24; payments, \$500, when screen and wainscoting for baggage and serving room are completed and ready for painting; \$2000, when colonnade and balustrade are set and ready for painting; balance, 35 days.

Market near Taylor. Brick work etc.; owners, Peixotto & Silvermann; contractor, Crawford Perrie; cost, \$12,800; signed, June 23; filed, June 26; payments, \$4000, walls ready and 1st floor joists on; \$2500, ready for 3rd floor joists; \$3000, completed; \$3200, 35 days.

Mary and Hattie Sts. To build; owner, August Pelzold; architect, C. D. Mitchell; contractor, Frederick Raabe; cost, \$3100; signed, June 24; filed, June 29; payments, \$775, frame up; \$775, brown coat on; \$775, accepted; \$775, 35 days.

Minnesota and Napa. Carpenter work etc.; owner, John O. Reis; architects, Henriksen & Mahoney; contractor, R. O. Davis; cost, \$12,090; signed, June 29; filed, June 30; payments, \$2266, rustic and roofing completed; \$2266, brown mortared and outside finish on; \$2266, white plastered; \$2266, completed; \$3025, 35 days.

Mission and 9th. Painting etc.; owner, Peter J. McGovern; architect, Julius E. Kraft; contractors, C. C. Sweeney; surety, \$2000; cost, \$2197; signed, June 23; filed, June 30; payments, \$47, entire sewerage and rough work in; \$1000, finish; \$550, 35 days.

Mission and 9th. Plumbing; owner, Peter J. McGovern; architect, J. E. Kraft; contractor, C. C. Sweeney; surety, \$2000; cost, \$2197; signed, June 23; filed, June 30; payments, \$47, entire sewerage and rough work in; \$1000, finish; \$550, 35 days.

Mission near 15th. Carpenter work; owner, Jas. Stanton; architect, Julius E. Kraft; contractor, Albert Washburn; surety, \$10,000; cost, \$18,288; signed, June 4; filed, June 5; payments, \$2716, frames up; \$3000, enclosed; \$1500, ready for lathing; \$1500, finished; \$4572, 35 days.

Nineteenth near Jessie. Alterations etc.; owner, Otto Fausz; architects, Gellfuss Zimmerman & Co.; contractor, F. W. Kern; cost, \$4025; signed, June 5; filed, June 12; payments, 1st and 15th day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Oak near Franklin. To build; owner, Anna Cordes; architect, S. Hatfield; contractor, Jas. Campbell; surety, \$1185; cost, \$1740; signed, May 29; filed, June 8; payments, \$888, frame up; \$888, main roof tinned; \$888, outside furnished; \$891, completed; \$1185, 35 days.

O'Farrell and Stockton. Carpenter work; owner, Henry W. Hyman; architect, Chas. Geddes; contractor, F. L. Hansen; cost, \$2950; signed, June 16; filed, June 30; payments, \$1107, ready to receive laths; \$1106, completed; \$737, 35 days.

Page between Buchanan and Webster. Mill work etc.; owner, W. W. Ackerson; architects, Martens & Coffey; contractors, N. Parrish & Co.; cost, \$1250; signed, June 16; filed, June 16; payments, \$312.50, ready for plaster; \$312.50, inside finished; \$312.50, accepted; \$312.50, 35 days.

Sansome near Pine. Plastering; owner, Jas. Otis; architects, Smith & Freeman; contractor, C. C. Morehouse; cost, \$7,100; signed, June 19; filed, June 23; payments, \$2,000, lathed and completed, \$1,500, 2nd coat of mortar, \$1,500, 3rd coat on; \$325, plastering done; \$1,775, 35 days.

Sansome near Pine. Plumbing; owner, Jas. Otis; architects, Smith & Freeman; contractor, Duffly Bros.; cost, \$1,750; signed, June 15; filed, June 23; payments, \$1,000, rough work completed; \$1,650, 20, completed; balance, 35 days.

Sholwell between 14th and 20th. To build; owner, Mary E. Leslie; architect, Wm. Hebling; contractor, Wm. Hebling; cost, \$5,000; signed, June 4; filed, June 5; payments, \$1,250, enclosed; \$1,250, brown mortared; \$1,250, white plastered; \$1,250, completed.

Sutter between Mason and Taylor. To build; owner, A. L. Bowhay; architect, H. D. Mitchell; contractors, W. J. Field et al.; cost, \$1,175; signed, June 15; filed, June 16; payments, \$300, brown mortared and brickwork completed; \$300, accepted; \$300, 30 days; \$275, 30 days after foregoing.

Twentieth st near Treat ave. To build; owner, Minnie Harris; architect, H. A. Schultze; contractor, Wm. Belyea; cost, \$2,385; signed, June 22; filed, June 22; payments, 1st and 15th day of each month; 75 per cent. as work progresses; 25 per cent. 35 days.

Twenty-fourth and Potrero ave. To build; owner, John Ribby; architect, T. F. Mitchell; contractor, Thos. F. Mitchell; cost, \$6,555; signed, June 15; filed, June 15; payments, paid in installments as directed by owner; balance, 35 days.

Twenty-fourth near Sanchez. To build; owners, Thos. Nannery and wife; architect, M. J. Welsh; contractor, J. A. Shepley; surety, \$500; cost, \$2,400; signed, June 12; filed, June 12; payments, \$500, frame up; \$500, brown mortared; \$500, completed; \$500, 35 days.

Twenty-fifth near Castro. To build; owner, Wm. Harris; architect, H. R. Schmuckert; contractor, H. R. Schmuckert; surety, \$1,500; cost, \$2,250; signed, June 30; filed, June 30; payments, \$489, closed in with rustic; \$100, brown mortared; \$400, white plastered; \$400, completed; \$561, 35 days.

Union Street. To build; owner, Wm. Fruhling; architect, W. D. Van Siglen; contractor, A. J. Melvaine; cost, \$11,140; signed, May 26; filed, June 11; payments, \$275, frame up; \$275, brown mortared; \$275, accepted; \$275, 35 days.

Valencia near Twenty-second. To build; owner, H. W. Stevens; architect, A. J. Barnett; contractor, W. N. Briggs; surety, \$500; cost, \$11,375; signed, June 4; filed, June 8; payments, \$1,000, second floor joists on; \$1,500, rustic and roof boards on; \$1,500, ready for lathing; \$1,000, brown mortared; \$1,000, white plastered; \$1,000, ready for painting; \$1,500, completed; \$2,845, 35 days.

Van Ness between Pine and California. Plastering; owner, C. Chisholm; architect, Clinton Day; contractor, Moschouze & Wood; cost, \$2,750; signed, June 10; filed, June 11; payments, \$743.25, brown mortared, \$743.25, signed, June 10; \$743.25, stairs up and standing finish on; \$743.25, 35 days.

Vermont near Santa Clara. To build; owner, J. W. Panington; architect, John Gash; contractor, W. E. Cummings; cost, \$2,880; signed, June 25; filed, June 25; payments, \$357, building shingled; \$357, brown coated; \$357, white on and first coat paint on; \$357, doors and windows hung; \$355, 35 days.

Washington and Laguna. Ornamental work; owner, Henry J. Crocker; architect, H. A. Schultze; contractor, C. F. Schiller; cost, \$1,965; signed, May 28; filed, June 24; payments, first day of each month, 75 per cent. as work progresses, 25 per cent. 35 days.

Washington and Laguna. Plastering; owner, Henry J. Crocker; architect, H. A. Schultze; contractor, T. Tucker; cost, \$3,301; signed, June 18; filed, June 24; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Washington near Lyon. To build; owner, Thos. J. Harris; architects, J. J. & T. D. Newsum; contractor, Thos. R. Barrett; cost, \$4,800; signed, June 4; filed, June 4; payments, \$755.75, brickwork and frame up; \$755.75, rough plumbing and gas work done; \$755.75, plastering finished; \$755.75, completed; \$1,022, 35 days.

Washington Ave near Howard. Carpenter work, etc; owner, P. McLeure; architects, Pissis & Moore; contractor, O. E. White; cost, \$3,947; signed, May 6; filed, June 5; payments, \$1,200, frame up; \$1,000, first coat plaster on; \$1,000, interior plastering finished; \$1,000, ready for painting; \$347, completed; \$1,500, 35 days.

Alameda County.

Alama Ave. near Lafayette. Repairs; owners, Son Lane Insurance Co.; architect, Thos. I. Pyne; contractor, John J. Bowie; cost, \$1,000; signed, June 1; filed, June 5; payments, \$350, roof shingled; \$400, completed; \$250, 35 days.

Arbor near Pacific Ave. Frame Dwelling; owner, C. H. Wall; architect, J. E. Henderlong; contractor, J. E. Henderlong; cost, \$1,400; signed, July 1; filed, July 1; payments, \$350, frame up; \$350, brown mortared; \$350, completed; \$350, 35 days.

Block 34 of the B. L. T. I. Two story house; owners, John Haberlin and wife; contractors, Thompson, et al; cost, \$2,400; signed, April 16; filed, June 19; payments, \$500, frame up; \$500, enclosed; \$500, brown mortared; \$500, completed.

Buena Vista Ave; near Oak, Alameda. Two story frame; owner, Capt. J. Jensen; architect, Chas. S. Schaner; contractor, P. Christensen; cost, \$2,185; signed, June 5; filed, June 5; payments, \$546.25, rough frame up and sheathing on; \$546.25, brown mortared; \$546.25, woodwork done; \$546.25, completed.

Central Ave; near Sherman, Alameda. Two-story frame; owner, Henry Mohms; architect, A. Stenbitt; contractor, J. R. Richter; cost, \$1,700; signed, May 20; filed, June 12; payments, \$425, frame up and roof on; \$425, brown mortared; \$425, completed; \$425, 35 days.

Chester and Center St., Oakland. One-story frame; owner, A. Komsteoff; architect, C. A. Wedgwood; contractor, Heydey Scholz; cost, \$1,725; signed, June 3; filed, June 11; payments, \$700, lumber and brick work; \$500, plastering done; \$525, 35 days.

Daley's Scenic Park, Berkeley. Frame dwelling; owner, H. N. Loyd; architects, Pissis & Moore; contractors, Gardner & Byden; cost, \$2,632; signed, April 23; filed, June 10; payments, \$500, frame up; \$500, 1st coat plaster; \$500, interior plastered; \$400, ready for painting; \$72, completed; \$600, 35 days.

Dayton near Grand st, Alameda. Two-story frame; owner, Mrs. Mary E. Holt; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$2,302; signed, June 11; filed, June 15; payments, \$650, rustic and roof shingles on and chimney built; \$500, window frames set, brown mortared and exterior primed; \$512, completed; \$600, 35 days.

Dimond ave, Fruit Vale. Two cottages; owner, W. H. Robinson; architect, D. Cleland; contractor, D. Cleland; cost, \$5,300; signed, May 20; filed, June 20; payments, \$1,200, frame up; \$1,200, building enclosed; \$1,200, brown mortared; \$1,700, 35 days.

Eagle ave. near Bay St. Alameda. 8 frame buildings; owner, E. A. S. Page; architects, Cary & Johnson; contractors, Marcuse & nelson; cost, \$5,000; signed, June 1; filed, June 6; payments, \$200, frames up and roof on, \$200, enclosed and 1st coat plaster on; \$200, completed; \$200, 35 days.

Eighteenth bet. Market and West Oak. 2 one-story cottages; owner, C. H. Cole; architect, B. McManus; contractors, Smith & Lake; cost, \$3,100; signed, June 23; filed, June 24; payments, \$750, brick work done, roof boarded; \$750, brown mortared; \$750, completed; \$500, 35 days.

Ellsworth near Allston, Berkeley. Two 2-story frames; owner, Lizzie K. Hume; architects, Esty, Gilbert, Jewett; contractors, Esty, Gilbert, Jewett; cost, \$4,900; signed, June 24; filed, June 24; payments, \$1,225, frames up; \$1,225, brown mortared; \$1,225, completed; \$1,225, 35 days.

Enc. ave. near Chestnut St. Ala. To build; owner, P. W. Bellingall; architect, Walter J. Mathews; contractors, McDonald & Eggleston; cost, \$3,775; signed, June 8; filed, June 8; payments, \$707 50, 1/4 work completed; \$707 50, 1/4; \$707 50, 1/4; \$945, 35 days.

Fourth near Brush, Oak. To build; owner, Pat Kelly; Architect, Pat Kelly; contractor, R. M. Murray; cost, \$2,150; signed, June 23; filed, June 23; payments, \$25, frame up; \$825, brown mortared; \$462 50, completed; \$337 50, 35 days.

Grove and 45th Sts., Oakland. Two 1-story frames; owner, Andrew Campbell; architect, Robt. Seidel; contractor, Robt. Seidel; cost, \$2,750; signed, June 13; filed, June 13; payments, \$687 50, brown mortar on 1st house; \$343 75, 1st house completed; \$343 75, 35 days; \$687 50, brown mortar on 2nd house; \$343 75, 2nd house completed; \$343 75, 35 days.

Gunn Tract, Oakland. 2-story dwelling; owner, J. T. Quirk; contractor, J. A. Eastman; cost, \$2,475; signed, June 12; filed, June 13; payments, \$400, frame up; \$300, enclosed and roof on; \$400, brown mortared; \$750, completed; \$625, 35 days.

Hobart and Grove St., Oakland. Concrete work; owner, Rev. Thomas McSweeney; architect, Chas. J. Devlin; contractors, Gray Bros.; cost, \$4,734; signed, June 6; filed, June 8; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Huntton Tract, Oakland. Cottage; owners, E. Donnelly and wife, architect, J. V. Embury; contractor, J. V. Embury; cost, \$2,800; signed, June 22; filed, June 22; payments, \$700, frame up and brickwork done; \$700, ready for plaster; \$700, completed; \$700, 35 days.

Jackson near 7th, Oakland. Alterations and additions; owners F. W. Stromberg; architect, R. G. Frise; contractor, H. M. Smith; cost, \$1,075; signed, June 27; filed, June 30; payments, \$400, inside finish on; \$406.25, completed; \$268.75, 35 days.

Lafayette and R. R. Ave. One-story frame; owner, Mrs. Margaret Alexander; architect, Oliver Everett; contractors, Brilliant & Diamond; cost, \$1,567; signed, June 20; filed, June 24; payments, \$391, rustic and chimneys built; \$391, brown mortared; \$391, completed; \$394, 35 days.

Lafayette and R. R. Ave. One-story frame; owner, Mrs. Anna M. Smith; architect, Oliver Everett; contractors, Brilliant & Diamond; cost, \$2,340; signed, June 17; filed, June 20; payments, \$585, rustic on, building sheathed and chimneys built; \$585, brown mortared; \$585, completed; \$585, 35 days.

Linden street near Thirty-second, Oakland. Frame; owner, Chas. Crowley and wife; architect, B. McManus; contractor, Thos. McGauley; cost, \$1,450; signed, June 17; filed, June 18; payments, \$300, frame up and enclosed; \$300, brown coat on and first coat paint outside; \$300, completed; \$500, 35 days.

Lot 18, Block 27, Oakland. To build; owners, Mrs. Geary et al; architect, John Conant; contractor, John Conant; cost, \$1,820; signed, June 6; filed, June 6; payments, \$455, frame up; \$455, brown mortared; \$455, plastering done and building ready for finish; \$455, when completed.

Magnolia between Third and First. To build; owner, Mrs. B. Sullivan; contractor, M. Laursen; cost, \$1,925; signed, June 10; filed, June 16; payments, \$500, enclosed and ready for lathing; \$500, brown mortared and windows and doors in; \$525, completed.

McGee Ave. and Addison street, Alameda. To build; owner, Wm. Armstrong; architect, C. Winstanley; contractor, E. E. Armstrong; cost, \$1,675; signed, June 9; filed, June 9; payments, \$500, brown mortared; \$500, completed; \$575, 35 days.

Mill's College Grounds. Concrete work; owner, Mill's College; architect, Geo. A. Bondy; contractors, Ransome & Cushing; cost, \$1,2100; signed, June 4; filed, June 9; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Oak between Ninth and Tenth, Oakland. To build; owners, Land & Loan Co.; architect, Chas. Goddard; contractor, E. C. Worden & Son; cost, \$3,235; signed, June 20; filed, June 24; payments, \$1,000, first coat mortar and chimneys up; \$900, second coat and windows in; \$930, completed; \$900, 35 days.

Pacific Ave. and Stanton St., Alameda. Two-story frame; owner, H. P. Moreau; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, \$2,500; signed, May 27; filed, June 13; payments, \$800, rustic and roof shingles on and chimney built; \$600, brown mortared; \$470, completed; \$630, 35 days.

Park Ave. near San Jose, Alameda. Two-story frame; owner, Ulysses Steadman; architects, Allen and Wrampe; contractors, Allen and Wrampe; cost, \$3,000; signed, June 9; filed, June 10; payments, \$700 frame up; \$700 second coat of plaster; \$700, completed; \$900, on or before June 1st, 1892.

Peralta Park, Berkeley. Elevator; owner, Mrs. M. B. Curtis; contractors, Cahill & Hall; cost, \$1,000; signed, June 18; filed, June 25; payments, \$500, 30 days after completed; \$500, 90 days.

Poplar near 8th, Oakland. Cottage; owner, J. D. Scott; architect, R. G. Frise; contractor, John Langland; cost, \$2,268; signed, June 17; filed, June 24; payments, \$567, frame up and enclosed; \$567, 1st coat plaster on; \$567, 2nd coat on and inside finish on; \$567, 35 days.

Santa Clara ave near Union, Ala. 2-story frame; owner, G. W. Shreve; architect, A. W. Pattiani; contractor, A. W. Pattiani & Co; cost, \$560; signed, June 6; filed, June 10; payments, \$100, rustic and roof shingles on and chimney built; \$500, window frames set and brown mortar on; \$500, completed; \$500, 35 days.

Shattuck ave. Dwight wy. Berkeley. 2-story and basement; owners, Stewart & Trowbridge; architect, W. H. Wellby; contractor, W. H. Wellby; cost, \$20,920; signed, May 25; filed, June 13; payments, \$5230, 1st floor joists on; \$5230, brick work done and roof on; \$5230, plastering done; \$5230, 35 days.

Thirtieth ave near 18th E. Oakland. Cottage; owner, Mrs. C. Schnoor; contractor, D. H. Matheson; cost, \$1,500; signed, June 13; filed, June 18; payments, \$375, frame up; \$375, 1st coat mortar on; \$375, completed; \$375, 35 days.

Tremont Ave. and Channing Way. To build; owner, R. R. Swain; contractor, P. Macony; cost, \$3,370; signed, June 2; filed, June 12; payments, \$300, frame up; \$300, brown mortared; \$300, inside completed; balance, 35 days.

Twelfth near Jefferson, Oakland. To build; owner, Hugh Hamilton; architects, Bar & Frise; contractors, Smilie & Smilie; cost, \$13,570; signed, June 24; filed, June 24; payments, \$3,392.50, brick work done; \$3,392.50, 1st coat plaster on and outside primed; \$3,392.50; 2nd coat painting done; \$3,392.50, 35 days.

Twentieth St. Telegraph Ave., Oakland. Two-story frame; owner, B. K. Allen; architect, Chas. Mau; contractor, Fibrich Bros; cost, \$2,800; signed, June 10; filed, June 11; payments, \$525, 1/4 materials furnished, 1/4 work done; \$525, 1/4 furnished and 1/4 done; \$525, 1/4 furnished and 1/4 done; \$525, completed; \$700, 35 days.

Twenty-third Ave. and 16th St., East Oakland. Additions; owner, J. Belydorn; contractor, John Bauman; cost, \$2,425; signed, June 5; filed, June 6; payments \$600, frame up; \$600, brown mortared; \$600, completed; \$625, 35 days.

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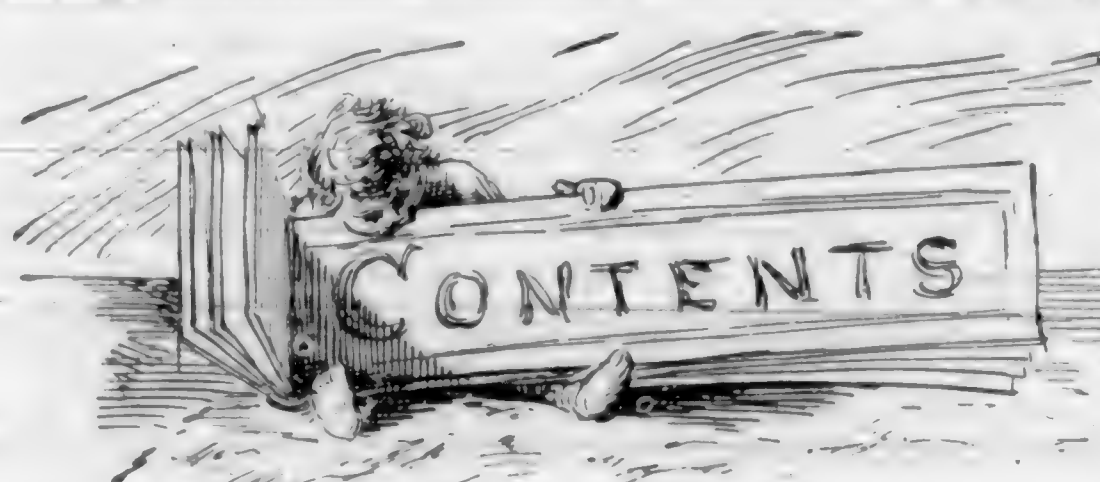
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NOW IN THE TWELFTH YEAR.

W. P. MOORE, PRESIDENT.

OLIVER EVERETT, SECRETARY.

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



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NOTICE.

Correspondents should address their communications to the California Architect and Building News, 408 California Street, San Francisco, Cal.

THE subject of sewerage for San Francisco is one that demands the serious attention of all citizens. During the winter rains the sewers in the low-lying portions become over-charged and in many instances premises are flooded and goods damaged causing a corresponding pecuniary loss to merchants and an increase in the death rate.

During the dry season the sewers become choked with mud and decaying matter, the water in the catch basins and traps becomes exhausted through evaporation, leaving the effluvia, stench, and disease-breeding atmosphere to be wafted through the streets by the wind. However absent-minded the pedestrian may be at intervals an extra strong whiff of noxious vapor becomes a reminder that a catch basin or man-hole has been placed there as a protection to the health of the residents of that vicinity.

Once or twice in several years the authorities have ordered a few gallons of water to be run into the sewers causing a decided decrease in the death rate. At the present time it would require a limited amount only to flush the catch basin traps. The whole system, if system it may be called, is defective. In many cases the present sewers can, with some slight changes, be made more serviceable. All the newer districts should be sewered in accordance with the most advanced knowledge in sanitary science and arranged upon some definite system. It seems to us that some competent person should be commissioned to arrange a system sufficiently comprehensive to include the whole city—old and new. It seems to us that the person best fitted for the position would be our present City and County Surveyor, Chas. H. Tilton, who, through his long connection with the surveyor's office and knowledge of the streets and grades is thoroughly versed in the existing defects as well as the requirements for the future.

MISSION OF SAN MIGUEL, CAL.

LEAVING the valley of the San Antone and going east we pass through a park-like country thickly studded with live oaks, round and solid looking in their dark green covering, and affording a pleasing contrast to the hot barren back-ground of withered grass; but as we journey forward and approach San Miguel the cool shadows of the oaks become fewer and fewer and further between until every green thing has disappeared and nothing save the sun scorched hills are left, the burning sky above and the parched earth beneath and one longs, as the psalmist of old for rivers of water in a dry place and the shadow of a great rock in a weary land. But one may long in vain, for the curse of God has gone forth over the land, the mighty tempest of his wrath and the flaming fire of his tongue has passed over it so that the grass has withered away and the earth has refused to cloth herself with verdure. Thus as we near the center of the furnace, and the Mission of San Miguel, the heat increases and the beauty of the landscape diminishes, until as we stand by its doorway and beneath the shadow of its old walls we can see naught but barren hills; bear from the depths of their hollows to the last boulder on their summits. Even the river has forsaken its course and now instead of journeying along, ministering sweet refreshment to waving willows and bending

of the Salinas these fathers built the Mission of San Miguel. Our sketch as seen from the east shows the Mission to be similar in general arrangement to that of San Antone given in a former number, but poorer in architectural features. The plan also is similar, the principal difference being in the placing of the church so much further in advance of the residence portion of the Mission. Originally the building inclosed a quadrangle but most of those at the rear have now disappeared. The interior of the buildings as usual is plastered and in order to form a good key for the mortar, the adobe is grooved diagonally in squares about two feet wide. The interior of the church is perfectly plain, no projections of any sort breaking the uniformity of its four walls, save at the altar where a monstrosity in wood combines the severity of the classic, the savageness of the Egyptian and the general ignorance of such as fly too high and like Icarus scorch their wings against the sun and fall to earth. The walls are frescoed to represent a colonnade, but the methods of obtaining distance, perspective and depth are so primitive that one cannot get an inch beyond the surface of the adobe wall though far off vistas of fair lands and sunlit slopes are there intended.

Of the San Luis Obispo Mission we give a perspective as it was about 1875. Almost nothing of the original now remains. The veranda and columns which are the principal features of



MISSION OF SAN MIGUEL

flags, in far off space it has become so etherealized that from day to day the eye may look in vain for the faintest sign of its heavenward flight on snowy wings, or coming back again to earth. Not, however, with such trifles as a reed shaken by the wind, nor with the vanities of such as cloth themselves in fine linen and purple vestures, nor even with the seductive influences of a sylvan scene did these men of old concern themselves, but rather that they might raise a cry, uplift a cross and sound in these desert places of the earth a song of joy a note of harmony amidst the desolation and discord of men's minds. Stern characters no doubt were these old friars, and they choose not to remain beneath the vine and fig tree of heredity, tilling where their fathers had tilled before and living in quiet ease and happy luxury, the world unknowing to the world unknown, but rather in the desert where no sower yet had sown nor happy reaper drawn his sickle through, their task was set, to make the wilderness blossom as the rose, and trees to spread their branches out as cedars in far Lebanon. And so as for their heavenward road they choose the narrow way; the rock encumbered path; on earth the mountain gorge and sandy desert track. If not "what sought they thus afar." We are told that in the early days of this Mission there were about 5,000 Indians in the neighborhood and it was for these that in this sun dried valley

the building have been torn down and now a wall of rustic with modern doors and windows form the elevation to the street. The church also has been so renovated as to be out of all resemblance to the old structure. For this reason we do not give a plan, but simply show the east front as it was originally. San Luis is about 12 miles from the coast 30 miles from San Miguel and is separated from the latter by a mountain range at the southern foot of which it is situated. Towards the south the country is flat, but is broken by cone-like mountains rising abruptly steep and rugged to a height of several thousand feet above the plain.

But it is no longer the Mission that claims attention here, for the town has grown around and nearly engulfed it and now the stranger may wander half a day before he will discover the old ruin hid away and disguised in its new vesture; and all around the clatter of horsemen and the sound of traffic, the grinding of cart-wheels and the sweet silvery tone of the shining dollar, tell us that the god of our fathers has fallen from his throne and some other ideal has been set thereon. The angelus now peels in vain at eventide for no grateful laborer bends his weary head, to thank the Giver for the sun shine past and ask sweet blessings for the coming night and still repose beneath the twinkling stars.

TRES.

PLUTARCH AND PHIDIAS.

There is a passage in Plutarch's life of Pericles which has never, I think, been fully understood, and has therefore given rise to, or affected in one way or another, the various theories on the ornamental architecture of the Greeks.

The biographer sums up his eulogy on the talents and success of Phidias in embellishing Athens under the direction of Pericles in the following manner. After alluding to the short space of time which, beautiful and perfect as they were, was consumed in the erection of the Parthenon and the Propylæa, he says, "Hence we have the more reason to wonder that the structures raised by Pericles should be built so quickly, and yet built for ages; for as each of them, when finished, had the venerable air of antiquity, so even now they retain the strength and freshness of a modern building. A bloom is diffused over them, which preserves their aspect untarnished by time, as if they were animated with a spirit of perpetual youth and unfading elegance."

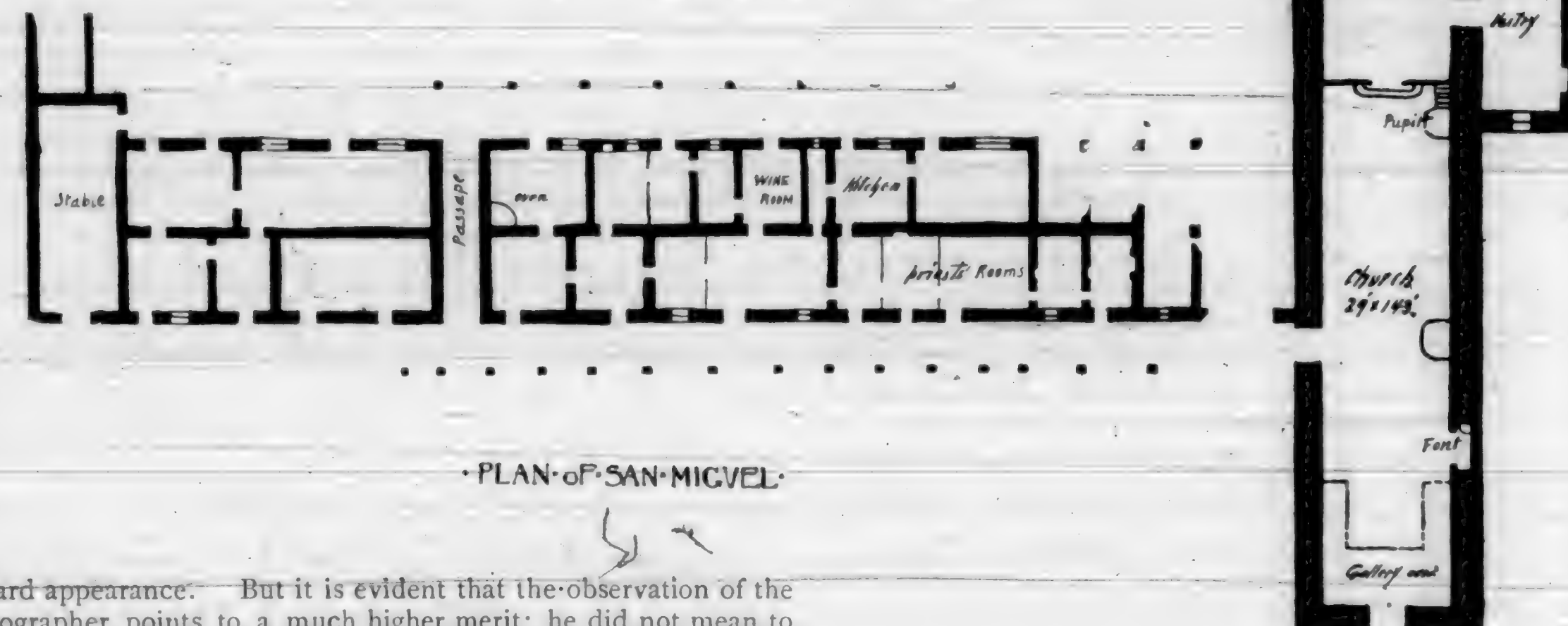
This expression has been quoted as a proof that the marble of which these edifices were constructed was capable of resisting the effects of time more than any other material; others, again, make use of it in reply to the assertions which have been made that they were covered more or less with a coating of color, and the several mouldings picked out with various hues of red, blue, yellow and gold; for if this, they say, had been the case, we cannot suppose that such colors could have remained uninjured for six centuries, which must have materially affected the out-

IMPROVEMENTS IN THE NEW YORK QUARANTINE.

We are indebted to the *Sanitarian* of July for the following description of the improvements in the New York quarantine as reported by Dr. William M. Smith, Health Officer of the Port, to be so far advanced as, seemingly, to render the service more facile and more effectual than at any previous period in the history of the establishment.

"The value of this improvement cannot be appreciated except by those who had charge of Hoffman Island while the cholera-infected immigrants were detained there in 1887. The pine floors of the dormitories, embracing an area of 66,856 square feet, on which more than 2000 gallons of a solution of mercuric chloride were used in 1887 to destroy the contagion of cholera, which the floors might otherwise have retained by absorption, have been rendered impervious and non-absorbing by a covering of asphalt.

"The four sections of the south building have been so arranged that the occupants of each section may be isolated from every other section and yet have access to fresh air, dining-tables, and closets.



PLAN OF SAN MIGUEL

ward appearance. But it is evident that the observation of the biographer points to a much higher merit; he did not mean to praise the material used by Phidias, which, in truth, was the common produce of the neighboring hills; nor its superficial brilliancy; nor the skill of the painter, if this additional decoration had really been employed; nor the mechanical expertness of the artisans; but he gave his willing testimony as a philosopher and as a man of taste who was well acquainted with all the rival edifices of the same nature, which abounded at that time throughout the Roman world, that the buildings of Athens shone pre-eminently above them all by their inimitable beauty and perfection, by the magnificence with which they were designed, as well as by the elegance of their execution; that these eternal monuments of her glory were founded upon the true, universal, and eternal principles of science, order and beauty; that, therefore, as from the first they had no especial character of novelty or extravagance, so to the last would they preserve the *purpureum* of perpetual youth. The conceptions of genius had discovered the true point where massiveness, harmony and tasteful ornament were happily combined; where every part of the architecture could readily be accounted for on principles of reason and the demands of science; and where the minutest examination contributed only to increase the admiration produced by the first impression.

Plutarch judged of a work of art as Cicero and Quintilian judged of eloquence, that that degree of ornament only was allowable "quod non plus minusve est, quam decet"—that nothing improper or out of place was ornamental, and that true beauty could never be separated from utility.

W. R. HAMILTON.

"The sixty-eight metallic bath tubs which are located on one side of the vestibule at each end of the dormitories, are connected with water tanks in the upper part of the buildings. They afford a refreshing contrast to the fifty or more half barrels used for bath tubs on former occasions. The 720 canvas-covered-double-tired-galvanized-iron-folding bunks, which are triced up against the walls and supporting pillars when not in use, will be a great improvement on steerage mattresses laid upon the floors, as they have been in time past. Canvas bottoms laced upon the rails take the place of the vermin-filled mattresses. After use the latter were generally destroyed, on account of the difficulty of cleansing them. The canvas bunks now in use, like the hammock of the sailor, can be quickly removed, folded, cleansed in the disinfecting-room, and when replaced be as good for further use as when new.

"The emergency hospital, consisting of several rooms and twenty beds, which have been arranged above the boiler-room in the old administration building, will supply a much-needed convenience for immigrants who are suddenly taken ill while detained for observation. The rooms are isolated from the superintendent's rooms, although in the same building with them. This hospital affords an agreeable contrast to those improvised in the wash-rooms of the dormitories for the cholera-stricken immigrants of 1887.

"The new two-story administration building, each floor of which has an area of 5559 square feet, has several times during

the past year been tested in respect to its usefulness for which it was intended, and has fully answered the expectations of those who designed it.

"The 1538 steerage passengers that have been under observation at Quarantine during the past year, for fifty-five days in the aggregate, have afforded the occasion of testing to a considerable extent the serviceableness of the improvements made in connection with that building.

"The dining-rooms of this building will seat several hundred passengers; an extensive kitchen is adjacent to the dining-rooms, with range, steam-heated kettles and boilers sufficient to cook for a thousand people. The store-rooms in connection with the kitchen are ample to contain supplies for the same number.

"A large laundry on the same floor, with stationary tubs, each furnished with hot and cold water faucets, cloths racks and steam drying coils supply every needed facility for securing cleanliness. Formerly the sea constituted the immigrants' wash tub and supplied the water, the sea-bathed rocks around the island their wash boards, and the rip-rap walls their drying racks.

"Along the east side of the old, and on the north side of the new administration building, thirty-two wash basins have been provided, each supplied with a cold and hot water faucet, and are supported over wash troughs, that connect with waste pipes; the lids are closed and locked when not in use.

"The annex closets, forty-eight in number, are set over porcelain-lined troughs, which have an incline of one-fourth inch to a foot to the sewer end; when it is necessary to disinfect the dejecta, as it would be if cholera-infected immigrants were under observation, a valve is arranged which will close the opening into the sewer until that object has been effected.

"Experience in the detention of passengers for observation, who have been exposed to some contagious diseases, particularly cholera, shows the necessity for dividing them into groups, having reference to the greater or less extent of their exposure or liability to the disease. This division is of little use if the isolation of the group is not complete under all circumstances. The annex closets in each dormitory accommodate four groups, or the occupants of four sections, each of which is isolated from the others by galvanized iron partitions. Iron reservoirs in the upper part of the dormitory afford an ample supply of sea water for flushing the closets.

"The portable iron partition across the island, from the head of the slip to the rip-rap wall on the east side, is erected midway between the north and south dormitories, which, when necessary, prevents any communication between the occupants of the dormitories. At other times intercourse is uninterrupted between the buildings, by doors at the east and west ends of the partition.

"The need of such an arrangement in 1887, when two steamers were in Quarantine, each with several hundred infected immigrants, compelled the detention of the last arrived steamer for some time, for want of a Quarantine of Observation, to the great discomfort and danger of the passengers, who had already been nineteen days in a crowded steamer. The necessity for the agents of the detained steamer to fulfill their charter obligations finally compelled them to charter a ship and fit it up for the reception of the immigrants on board the steamer, at several thousand dollars expense to the company.

"The disinfecting plant is composed wholly of iron and is located in the second story of the new administration building above the boilers and pumps.

"The disinfecting-rooms are made as nearly air-tight as possible. The ceilings and partitions are made of three-sixteenths iron, well lapped and riveted, caulked and thoroughly fitted. The ceiling, floors, and partitions are lined with iron, and with doors of the same in partitions and for shutters to windows. The doors and room are calculated to withstand the pressure of seven and one-half pounds per square inch. The partitions are secured in place by four-inch beams and angle irons, held in place by bolts and rivets bolted to the beams. Each door dividing the sections are hung and set in such a manner as to be perfectly air-tight when closed. The window shutters are made and hung the same as the doors; all have rubber stops.

"One hundred and eight galvanized iron baskets of No. 14 wire and one-inch mesh are in a position for use. Each with sufficient capacity for the baggage of one person or one family; or, more exactly, each basket is six and one-half to four and one-half feet long, frame in wire with stiffening bands. Each series or set of three baskets is suspended and run on the same

overhead tracks, so arranged as to slide out their full length.

"Gauges and thermometers are so placed as to indicate the pressures and temperatures of the disinfecting-rooms. For this purpose are used three high ranged thermometers, three vacuum gauges, and three pressure gauges, each having necessary valve and pipe connections with dial boards and fixtures complete.

"A drying-room 109 by 51 feet for baggage and clothing after it is disinfected is connected with the disinfecting chamber by a short hall, in which a small railway and car is to be constructed, to carry the basket from the disinfecting-room to the drying-room.

"First test of the Steam Disinfecting Plant—September 19th, 1890—Anthrax bacilli and anthrax spores were used; four gelatine culture tubes of the former and two of the latter were placed in the interior of steerage mattresses; these were rolled up, tied together and put in the baskets of the sections. The vacuum pump was started at 1.24 P. M., the pump exhausting all three sections at the same time. At thirty-five minutes past 1 o'clock the vacuum gauge indicated five pounds pressure. The vacuum pump was then stopped and moist steam introduced into all sections at a steam pressure of 87 pounds. At 2 P. M. the boiler gauge indicated 100 pounds steam. At 1.45 the pyrometer reached 232° Fahr. Moist steam was then shut off, and dry heat maintained for thirty minutes longer.

"The steam pressure within the sections showed that the doors of the middle section were defective in their fastenings.

"A thermometer placed in a mattress and rolled together indicated 228° Fahr.

"Four tubes with live anthrax in gelatine, and two with anthrax spores in the same culture, placed inside of mattresses, rolled and firmly tied together, were entirely sterilized.

"Second Test—March 7th, 1891.—The doors that were insufficiently secured on trial September 19th, 1890, having been improved, the disinfecting plant was again tested with boiler pressure at 100 pounds. The three sections were closed and tested at the same time. Anthrax bacilli and spores, each in glass tubes, closed with sterilized cotton, were placed inside of ordinary steerage mattresses, and the mattress rolled up and firmly tied. The same class of germs, anthrax and spores, one culture tube for each, were put in several blankets, such as are commonly used by immigrants in the steerage, and folded so that each tube was wrapped in six or eight thicknesses of blankets. These were placed in the centre of the sections, midway between the heating coils at the end of the sections. A thermometer was hung in the centre of the middle section. Six minutes after the vacuum pump was started the vacuum gauge indicated the desired exhaustion of air from the sections. The vacuum was maintained fifteen minutes, when live steam was introduced at 100 pounds. In one hour and thirty minutes the index hand of the pyrometer gauge of the middle section made connection with the indicator, set at 230° Fahr., and rang the bell in the engineer's room. The steam gauge on the sections indicated two pounds pressure at this time. The low temperature of the iron walls of the sections, and of the brick walls which were in immediate connection with them externally, when steam was introduced, increased the time in reaching 230° of heat fully one-half. Each of the sections have an interior superficial area of 1511 square feet and an aggregate area of 5535 square feet. The iron which encloses this area constitutes a considerable mass of metal to warm up before the heat of the interior can be raised to a disinfecting point. Sections 1 and 3 are end sections; they did not reach a disinfecting heat until one and one-half hours after the middle sections reached 230° Fahr.

"These sections are enclosed on three sides by brick walls and are in close connection with them. For this reason the heat was considerably longer in reaching 220° Fahr. than the middle section was in reaching 230° Fahr.

"The thermometer which hung in the middle of the second section indicated a heat of 230° Fahr. The effect of the brick wall, through which the arm of the pyrometer passes to reach the section, and into which it projects four inches, in lowering the temperature by conduction of heat from that portion of the section in contact with the wall, is shown by the difference in the heat as indicated by the pyrometer (230°) and the thermometer (253°). When the first tests were made and the thermometers were hung by the side of the pyrometer, there was a variation of but one degree in the instruments.

"To secure a disinfecting heat quickly when the sections are

cold this trial indicates the necessity of heating the disinfecting chambers by dry heat, long enough before moist steam is admitted for disinfecting, to raise the temperature somewhat of the great mass of iron enclosing the sections and thus to some extent warm the walls adjacent to the sections.

"The following note from the bacteriologist shows that the tests made March 7th were successful in destroying the most resisting disease germs known:

HOAGLAND LABORATORY, BROOKLYN N. Y., March 26, 1891.
"Dr. William M. Smith, Health Officer, Port of New York, Quarantine, Staten Island.

"DEAR SIR: As the result of the bacteriological tests of the disinfection plant on Hoffman Island, made September 19th, 1890, and March 7th, 1891, respectively, it gives me pleasure to state that the disinfection was thoroughly effective in each instance, totally destroying the vitality of anthrax, both in dried blood and in old dried-out agar cultures containing an abundance of spores. The control cultures grew in every instance, while those subject to the process were, without exception, killed.

"Yours very truly,

"GEORGE T. KEMP, M. D. PH. D.

"Associate Director."

BLEACHING OF PHOTOGRAPHS FOR THE USE OF PHOTO-ENGRAVERS.

In the preparation of drawings for reproduction by a number of the photo-engraving processes in vogue at the present time, it is a great saving of time to the draughtsman to be able to draw the lines directly upon a photographic picture, the photographic portion being then bleached out leaving the black line of the drawing clearly defined against a white background and which may be used by the photo-engraver the same as an original drawing for that purpose. Many formulas and directions have been published, each and all of which are deficient in some particular. We present the following method by Prof. Charles Ehrmann, Chautauqua School of Photography, as given in the latest issue of the *International Annual of Anthony's Photographic Bulletin*:

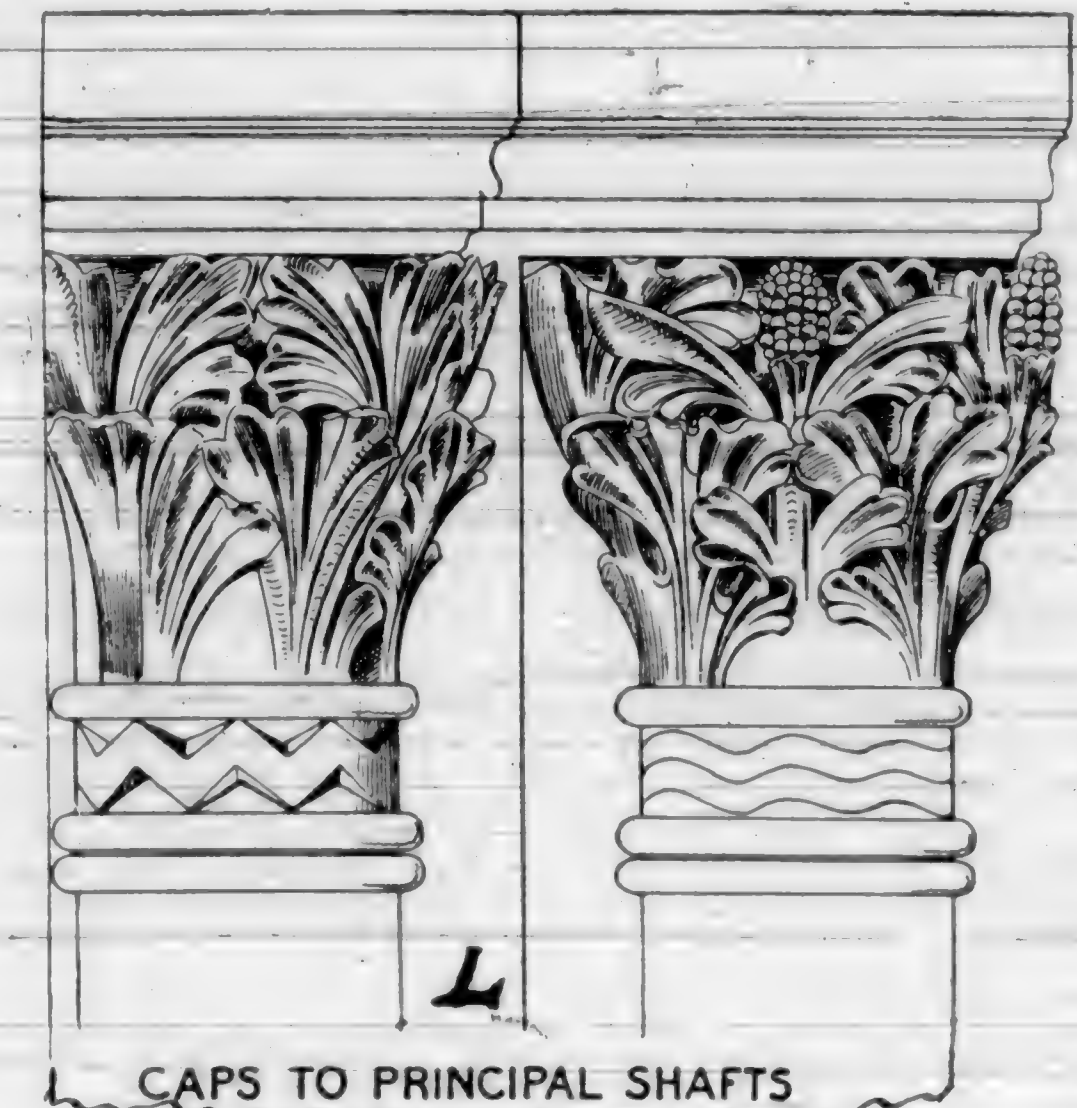
"The silver deposit of photographic prints rendered into line or stipple with pen and ink is preparatory to photo-mechanical reproduction, bleached out with an alcoholic solution of bi-chloride of mercury, to which the silver yields readily, provided the proof has been fixed in a solution of good hyposulphite of sodium. A mere trace of gold prevents bleaching and the ground will retain a tone of more or less intensity.

Recently I was called upon to bleach a number of very elaborate and costly pictures of that kind, which inadvertently had been subjected to a hypo-solution used previously for the fixing of a whole day's work of gold-tinted proofs. The mercury solution preformed its usual work but partially, not sufficient, however, to produce that clear and absolute whiteness necessary to make a sharp and distinct black and white negative.

These prints (twenty or more, probably) had all been subjected to a variety of treatment, and presented, in every instance, a muddy ground. After several unsuccessful experiments to produce the desired effect, I resorted at last to an old and well known remedy to remove silver—that with sodium and potassium cyanide. The latter being but sparingly soluble in alcohol of 95 per cent., made me think first a sufficient amount of it would not be taken up. But I proceeded in the following way to prepare an alcoholic solution carrying the utmost possible amount of cyanide. I made first a saturated aqueous solution, and of it dropped as much into the alcohol as it would bear without forming a deposit. Cyanide being soluble in water in the proportion of 1.5 and the alcohol being of 95 per cent., the alcoholic solution was then one of 1 per cent. After soaking the print first in a weak alcoholic solution of sodium of about the color of sherry wine, it was flooded repeatedly with the cyanide solution. The effect was astonishing, the result perfectly clear and white grounds, without the least deterioration of the draughtsman's work or injury to the sharpness of lines.

Were I to do such work regularly or frequently, I would certainly discard the old mercury method and substitute for it the one above described. Sodium and cyanide destroys the photographic deposit completely, and if the bleached print is washed in several changes of alcohol, it remains white permanently. Chloride and, as has been recently proposed, bromides, change color on exposure to light and if the bleached print is not reproduced immediately, it becomes useless after a time.

The method with sodium may be more costly, on account of the alcohol used for washing the print, but it is safer.



STREET PAVING IN SAN FRANCISCO.

THE DEFECTS, AND METHODS SUGGESTED FOR THEIR REMEDY.
By S. HARRISON SMITH, MEM. TECH. SOC. P. C. (Read April 10, 1891.)
Republished by permission from the *Journal of Transactions of the Technical Society of the Pacific Coast*, San Francisco, California.

INTRODUCTION.

Perhaps there is at this time no subject (with the exception of sewerage) which calls for more interest and attention from our public generally than that of street paving. For many years back we have been struggling with this problem, under what seems to me to be very unfavorable conditions, and experiment after experiment has been tried with but doubtful success. In fact, in nearly every case such experiments have proved absolute and expensive failures. But the time appears to have arrived when the municipal authorities have concluded to alter these conditions, and careful investigations have been instituted by them in order to obtain the opinion of experts and men of science upon this complex question, so that hereafter such pavements as may be laid shall be of the most lasting material and of the best construction.

It is not intended by the author of this paper to embody therein any scientific or theoretical questions, but to draw out a discussion on purely practical grounds.

In order to consider this subject in the manner proposed by me, it is only necessary to give a short description of what has been done, of what is being done and of what it is proposed to do in this connection, and to make such suggestions as may seem proper.

EXPERIMENTS TRIED IN SAN FRANCISCO DURING THE PAST DECADE.

In 1870 there was a special committee of the Board of Supervisors appointed to examine street pavements, and recommend some class of the same for general adoption. The report of this

committee has been read by me with much interest, and extracts therefrom may be quoted from time to time in this paper. The following named pavements are known to have been tried in San Francisco: Nicholson wood, Stow foundation, ordinary plank, Williams' composite, cobble, basalt block, composite limestone and asphaltum, and bituminous rock. There are many other classes of pavements whose merits have been advocated by their respective inventors or other parties in interest; but one of the objects of this paper being brevity, it has been deemed unnecessary to take notice of any classes of pavements other than those which have been actually experimented with in San Francisco.

NICHOLSON PAVEMENT.

The method of laying this pavement is as follows (the ground upon which it is to be laid having been brought to an even surface of the proper shape): The floor, which consists of pine planks of uniform thickness—generally two inches—is laid lengthwise of the street, covering the entire ground. These planks are covered with tar by means of a broom; they are then turned and tarred on the other side. Then blocks of the same wood six inches long, three inches thick, and eight or ten inches in width, are set lengthwise across the street in rows, each block being well coated with tar before being placed. As each row of blocks is laid, a pine strip six or eight feet long, three inches wide and three-quarters of an inch thick is placed against and nailed to the blocks; then another row of blocks is laid, and so on. This leaves a groove between each row of blocks which is filled with a mixture of heated asphaltum or tar and clean gravel, which while hot is rammed with an iron of suitable thickness to fill the groove. The whole surface is then covered with coal tar, over which is spread a coating of coarse sand or fine gravel.

The special committee appointed by the Board of Supervisors when speaking of this pavement in its report, says: "The Nicholson has proved a failure, principally from the rapid dry rotting of the fir blocks used." "On Bush street, between Powell and Mason, the Nicholson was laid in 1867, and long since it became evident that it must prove an unsatisfactory and expensive pavement. It has been several times repaired, and now," (in 1870), "requires a liberal outlay of the people's money, with the prospect of abandonment ere long." They also found that this pavement swelled during the rainy season to such an extent, as to cause great damage to surrounding improvements. They allowed four years as the limit of its life.

STOW FOUNDATION PAVEMENT.

This pavement when laid is, in appearance, almost identical with the Nicholson, but in fact differs considerably therefrom. The main differences consist in this pavement having no foundation beyond the preparation of the earth into a regular and smooth surface; the blocks being laid directly thereon with the fibers of the wood vertical, and that between each row of blocks, wedges made of boards, about six inches in length and nearly the width of the blocks, are driven some inches below them (the blocks). The remainder of the construction is similar to that of the Nicholson; the space between the blocks being filled with gravel and asphaltum or tar, and the whole surface covered in the same manner as the previously described pavement.

The committee, before referred to, preferred this pavement to the Nicholson, but only estimated its life at from five to six years. The following, taken from its report, may be of interest: "The Stow on Battery, between Vallejo and Green streets, was laid in January, 1869, and has been subjected to the excessively heavy transportation incident to Battery street and the North Point Docks and Warehouses. Your committee has closely watched for evidences of weakness in this pavement at this point, and has failed to discover any under the heaviest loaded trucks." But in spite of this account the pavement has passed into disuse, and we can only judge that a more extended experience showed similar or as great defects as were found in the Nicholson.

ORDINARY PLANK PAVEMENT.

It is hardly necessary to give a detailed description of this class of pavement, as it is familiar to all, having been but recently in general use in our city and in many localities still appearing. It consists of a framework of scantling, upon which redwood planks are nailed. There is little or no pretense at any previous preparation of the surface, or any exact method of construction. The troubles with this pavement are too well known, and its abandonment of too recent date to need further remarks.

WILLIAMS COMPOSITE PAVEMENT.

This pavement is one with a foundation of concrete (Williams called it stone) and a wearing surface of wood, combined by a mixture of asphaltum, and covered by a coating of the same mixed with sand. It was claimed by the inventor that wood pavements perished more from decay at base than from the wear on the surface, and that as the reverse was the case with stone pavements, he had succeeded in solving this great problem. This pavement was only tried in one or two localities, notably New Montgomery street, in front of the Palace Hotel, and on McAllister street. The failure can only be supposed from the abandonment.

COMPOSITE LIMESTONE AND ASPHALT PAVEMENT.

This is a patent pavement just being brought before the notice of the public. It consists of blocks (or bricks) compressed by machinery, composed of an admixture of limestone and Trinidad asphalt; these blocks are laid in rows upon the ground prepared for them; they are then compressed, bringing them to an even and compact surface. A specimen of this pavement can be seen on O'Farrell, at its intersection with Grant Ave. and Market street, which seems to have stood its few years' use tolerably well. It is claimed by the inventors of this pavement, that it can be laid as cheaply as the ordinary bituminous rock.

The remaining pavements are those that are at present being used throughout the city, viz: Cobble, basalt block and bituminous rock. Description of the methods of laying these is unnecessary at the present stage of this paper, as the reference (which is proposed) to the specifications in use by the city, will clearly bring out all points connected therewith.

PAVING SPECIFICATIONS, ETC.

Up to January, 1890, the cobble was about the only class of pavement having any permanent specifications or regulations governing its construction. These regulations simply provided that the stones should be selected, that they should not exceed nine inches, or be less than seven inches in length; that they should be set upright, smaller end down, close together in a bed of good, clean sand, not less than twelve inches deep; that they should be well rammed three times, well watered before the last ramming; then after being swept, the surface should be covered two inches deep with beach gravel or finely broken rock. For the other classes of pavement specifications were made as required.

In June, 1890, the then Board of Supervisors passed an order adopting specifications for all classes of street work, excepting sewers. In these specifications are included among other classes of work, macadamizing, cobble, basalt blocks and bituminous rock pavements.

The first mentioned (macadamizing) it is not thought advisable to notice, as it has never been considered by the author as a pavement. The specifications for cobble are identical with those previously mentioned, thus leaving only the basalt block and bituminous rock specifications to be noticed.

BASALT BLOCK PAVEMENT.

The specifications for this class of work adopted in January, 1890, provide that the roadway shall be excavated fourteen inches below the grade. A bed of concrete is then to be laid six inches in depth, and in the proportions of 1, 2 and 7 of Portland cement, sand and broken stone. Upon this foundation, and bedded in sand, the basalt blocks are set; the regulation size being, depth from seven to eight inches, thickness from three and three-quarters to four and one-half inches, length not less than eight inches. A light coat of beach gravel or finely broken rock is then to be spread over the entire surface, and lightly rammed; the work is then to be inspected by the superintendent, after which more gravel or finely broken rock is spread over the surface and broomed in, after which it is to be thoroughly rammed, and gravel or finely broken rock spread an inch deep over the entire area.

BITUMINOUS ROCK PAVEMENT.

The specifications adopted in 1890 for this class of pavement provide that the roadway shall be excavated eight inches below the grade. Then a concrete foundation of six inches in depth shall be laid, said concrete to be composed of 1, 2 and 7 parts respectively of Portland cement, clean sand and hard rock. On this foundation shall be laid a covering of bituminous rock two inches in depth. They also provide that this rock shall contain

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FOR

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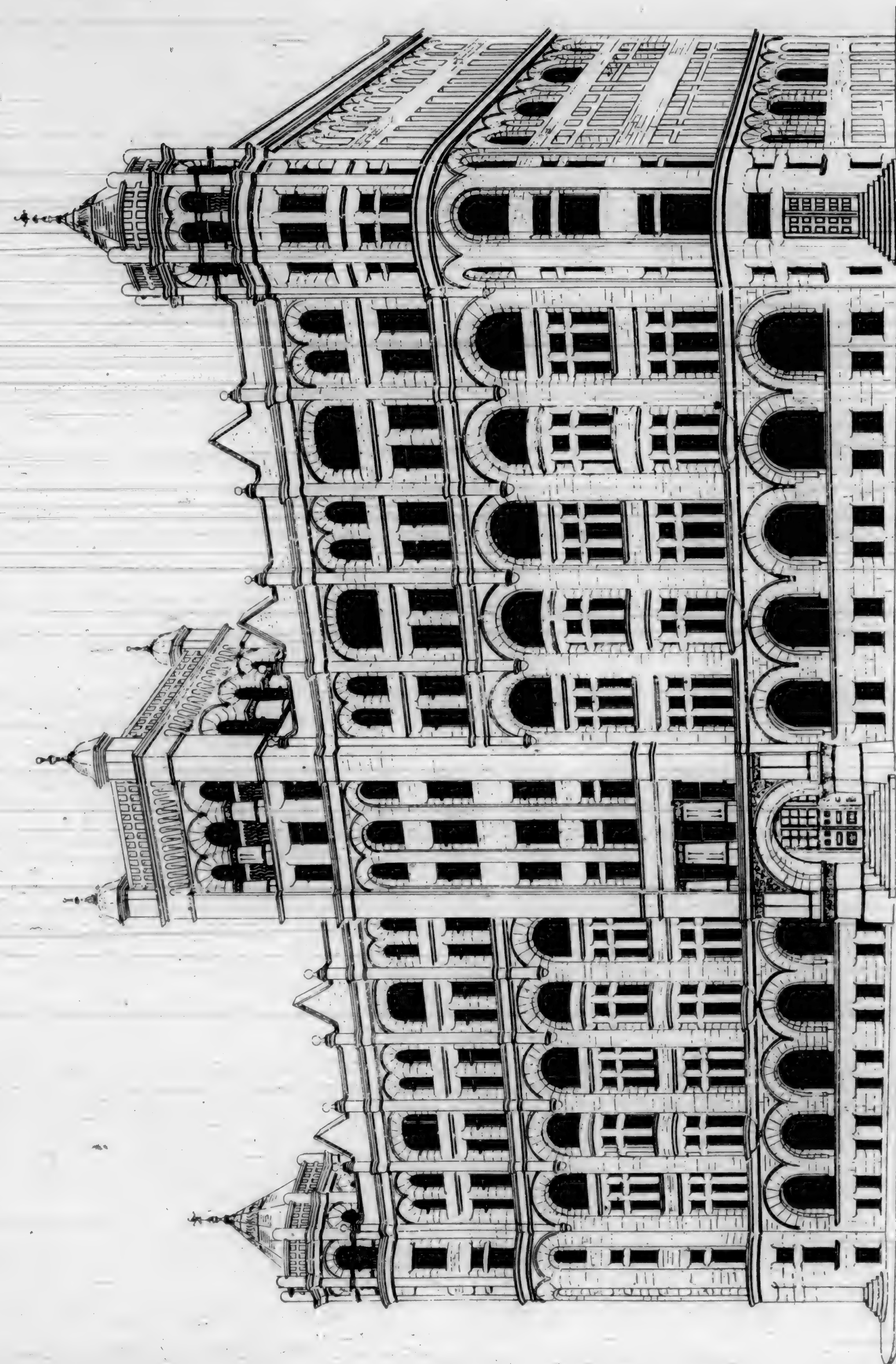
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