



SIDE ELEVATION OF \$5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

Various and Sundry Conundrums.

To the Editor of the Builder: One of our Chinese students, after visiting a young ladies' seminary in New England, expressed his opinion of the institution by the remark, "Too much plenty girls." My sister house-keepers may not believe it, but I have too much plenty of another good thing—to wit, closets. To tell the truth, I don't so much object to the closets themselves as to the doors. What can I do with all the doors? A. B.

Richfield, Conn.

A very good way to manage obtrusive closet doors is to take them off and send them to the auction room or give them to the poor, substituting portieres. These will not give so much protection against burglars, moths, dust, inquisitive servants, and other troublesome insects as a good, stout door, well padlocked; but if you have several closets, one or two can doubtless be treated in this way to hold those things which are least valuable or tempting. Another can be disposed of by fitting the lower part with drawers, the face of the drawers forming a neat finish, with open shelves above for books or bottles. When two closets for one room stand adjacent to each other, it is sometimes practicable to make a small lobby between the two, with a door opening to the closet at either side, thus keeping the two separate closets, but having but one direct opening into the chamber.

Sliding doors are usually convenient for closets, because, as few, it is greatly to be feared, make a practice of entering their closets and shutting the door, there is not the ordinary objection to them in closing after passing through, and they are not half so troublesome or dangerous as the ordinary swinging sort.

Dear Sir: How can we manage the outside blinds on our wide, very wide, windows? The blinds sag when they are open so they will

scarcely shut. The fastenings are so far around outside that I am in fear of breaking my neck when I try to reach them, and if a gust of wind happens to catch them, it would take a sailor to bring them into place. We must have outside blinds, and we can't give up the wide windows. MRS. E. K.

Manchester, N. H.

So far as crawling out the window to reach the fastenings is concerned, this is unnecessary, for there are fastenings that can be operated close by the hinge, and even inside the house, without opening the window at all. Of course they will sag, all things earthly sag unless well supported, and wide blinds should have something firm to rest upon, to keep them in a strong, upright position, both when open and shut.

The sail they carry is inevitable, and in a country of furious winds there is no protection against disaster from this cause but caution. There are outside rolling shutters, which would not be exposed to this peril, but they may have other serious defects, and are always expensive. We have seen outside blinds contrived to slide sidewise on a slender track, and this arrangement obviates the essential difficulties referred to. They can neither sag nor slam, and can be reached without leaning around the corner of the window sill to a dangerous extent. Of course, the tracks and guards will show, but that is not an unpardonable sin in a thing which is really useful.

WE are in a quandary about the front door. The houses in our village are "all in a row" along the one street that runs east and west. We live on the north side, consequently the house faces south; the lot is not very wide, and we hate to give up any part of the south side for a front door and hall. What can we do? H. M. G.

South Windham.

Whatever else you do, don't give up the sunny south side to the formal entrance hall—

always uncomfortable and rarely used. Either make the front entrance at one side, leaving the whole of the south front for rooms for daily use, or else make a hall in one corner large enough to be used as a sitting-room. There is no law requiring your main entrance to face the sidewalk squarely except the law of fashion, and the more frequently and courageously you break this law, the greater will be your reward. Whether the entrance shall be on the east or the west side, the sitting-room hall in the southwest or the southeast corner, will depend, of course, upon the approaches and surroundings.

OUR chamber has three large windows, which is all right, only they are so placed that if there happens to be a breeze and the windows are open, the bed is directly in a draft. Perhaps this doesn't concern building, but I think if the house had been properly planned in the first place, it might have been avoided. Can anything be done to remedy the evil and still leave us the open windows? A. R.

Lowell.

Doubtless it is a question of house-keeping rather than house-building; still, as the fault is ascribed to the house, it is not amiss to ask for suggestions. People have been known to turn their beds around during the summer months, so that the high head-boards would turn aside the currents of air; but we think the simplest, prettiest plan is to have one or two light folding screens, say five feet high and five or six wide when fully open, that can easily be placed where they will do the most good—that is, where they will intercept the

"Blasts of evening air
That take our health away."

And, what is more agreeable to some of us, ward off the too bright rays of the early morning sun when we desire a little more folding of the hands to sleep.

OUR dining-room would be quite satisfactory if it were not for a very ugly notch which is taken out of it by the back stairs. We want precisely the space they occupy for a sideboard. Without seeing the house, can you suggest any way of disposing of them? Lennox.

M. C. D.

No we can't, and should not attempt any reply whatever, but for the opportunity afforded of saying in a general way that housekeepers, as a class, suffer untold martyrdom by means of their back stairs. They (the stairs, not the housekeepers) are very apt to be, as evidently in the present case, just where they ought not to be, and just what they ought not to be—steep, dark, narrow, crooked, dangerous, and, withal, used continually, both by the servants and the mistress. In some cases it would be wise to destroy them, root and branch, compelling the household to use the revered front stairs, which are, presumably at least, safe. Another expedient, not often adopted but nearly always practicable, is to make an addition outside the main walls, in cold blood, boldly, in defiance of Mrs. Grundy and all the builders, that shall contain a good, strong, easy, and well lighted staircase—that, and nothing more. This will not only be found more convenient, but very likely more economical than the making over or readjusting a flight entirely within the house.—The Builder.

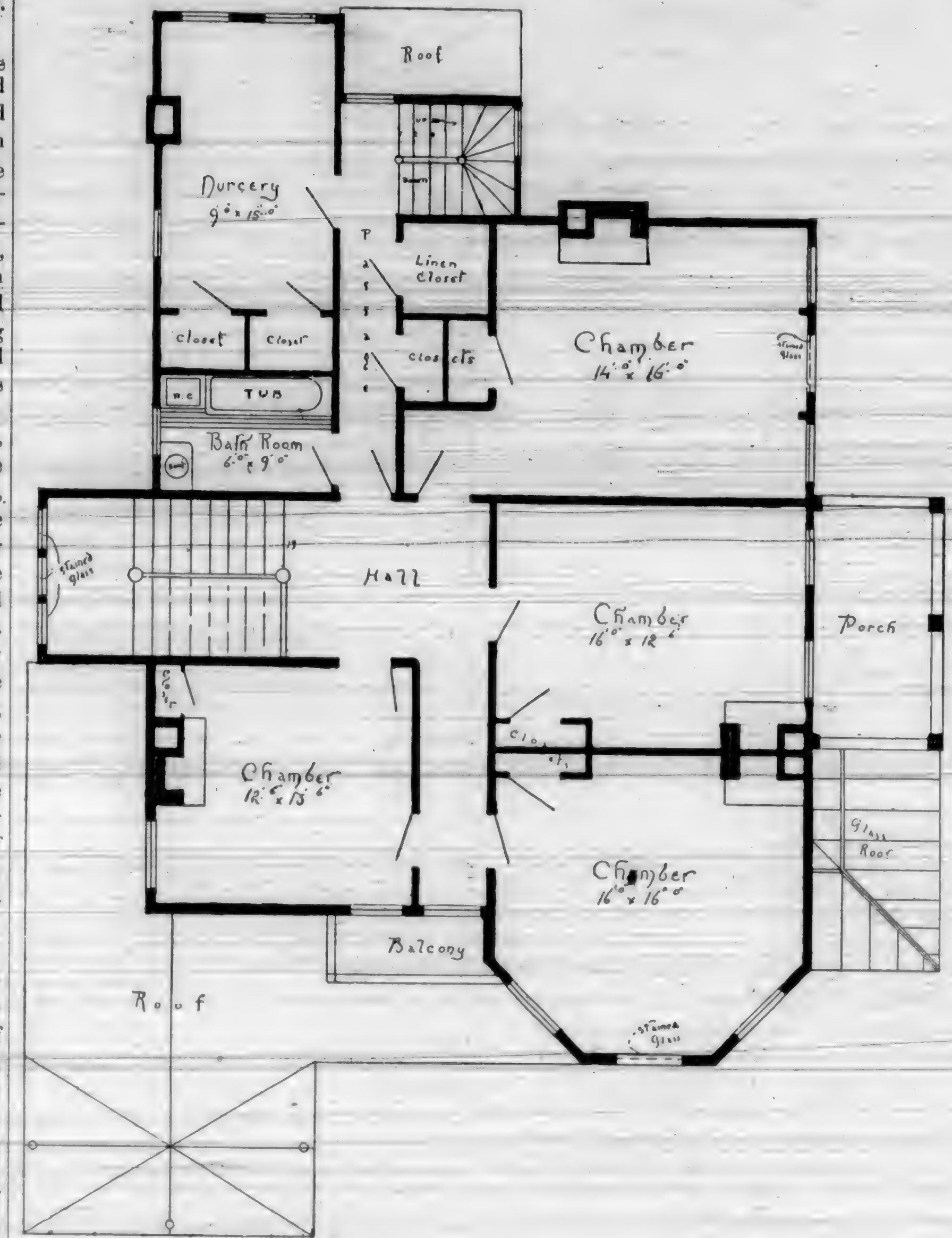
The Enriched Grained Varieties of Redwood.

It was not until many millions of feet of the more richly grained redwood of California had been recklessly and thoughtlessly consumed for general purposes, that special attention was attracted to the fact that a considerable percentage of redwood lumber possessed characteristics of great beauty and inherent qualities as to shrinkage and in other particulars, which entitle it to favorable consideration among the ornamental wood of the United States, for manufacturing and house finishing purposes. During the earlier periods, and until more recent years, the rich, curly "bird's eye," and other peculiarly marked species were cut for "rough lumber." The softer, straight grained kinds being so much more "easy to work," less liable to shrink endwise, and not so liable to split in nailing, became the favorite material for building and other purposes for which redwood was used, to the exclusion of the wavy and peculiarly grained varieties from the list of first-class redwood. Consequently, trees, or logs indicating the very features, which of late has given prominence to California redwood, were cut into plank, scantling, and dimension lumber, where size and strength were specially required; and millions of feet of choice grained wood have been split into railroad ties, and cut up for firewood, and otherwise destroyed, which, if to-day was available in board lumber, and on the market, would command a largely advanced price over and above present merchantable, first-class redwood.

The redwood forests of California have yielded some most beautiful specimens of tree growth, which, for richness and peculiarity of grain, is excelled only by the finest of costly hard wood. The peculiarity of shrinkage endwise is, perhaps, special to this wood, but does not extend beyond thorough seasoning, which perfects itself much more rapidly than in California sugar, or Eastern States pine. The value of the one discarded kind of redwood for manufacturing and finishing purposes has greatly increased during the past few years, and the present demand is greater than the supply of the "handsome variety," even for home consumption. Consequently, manufacturers of redwood lumber are paying attention to this fact, and will in the future regard with special interest such trees as will produce the rich grained article.

Something for Nothing.

THE desire to get something for nothing seems to be inborn in human nature. In general, people count themselves fortunate if they get an entirely satisfactory equivalent for an expenditure of time, labor, or money. Few, however, are averse to receiving benefits without rendering an equivalent. Newspaper publishers long since discovered this tendency of human nature, and are reminded of it often enough to keep it from passing out of memory. These gentle reminders seldom come in requests



SECOND STORY PLAN OF \$5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

for gratuitous space in the regular advertising columns, although such instances are not unknown. The editorial columns are good enough for people who are willing to accept gratuitous advertising. This class of people always have something which they feel sure the public and ourselves must be interested in, and as a matter of news, you know, etc. Now, no persons in the world are so eager to get hold of news, something good, which they can appropriately use, as newspaper men. None have so keen an appreciation of what "the public" will be interested in as they. But there is a very wide margin between what would interest the party concerned and what would command the attention of the public, which has no personal interest in the matter. The obligation of the newspaper publisher is honestly discharged when he has given a certain amount of space in his advertising columns in return for a stipulated

consideration. But, as a matter of fact, publishers are exceedingly liberal in their notices, reports, news items, etc., which call the attention of readers to persons or products. These notices, while they are of value to the business of the persons or firms mentioned, are gratuitously published because they are of interest to the public, and are a part of the history or record of the progress of trade. No class of business men in the world render so much service to business interests without asking or expecting direct return as newspaper publishers. Such being the fact, it is not strange that they should sometimes feel that good nature is trespassed upon when people who rarely or never do legitimate advertising go too far in their efforts to secure something for nothing.—Amer. Artisan.

Steel Square and Its Uses. \$1.00.

Urban Architecture.

BY G. H. SANDERS.*

SAN FRANCISCO, whether viewed from a distance, or seen from within, cannot be called, by even its most ardent admirer, an attractive city. Covering the lower ground and creeping over the hill-tops like a lichenous growth, it presents to the eye of the observer no single feature of beauty or of grace; nothing to excite the imagination or please the taste. Surrounded on all sides by lovely stretches of flashing blue water, the undulating lines of still bluer mountains, and overspread by the canopy of our glorious blue sky—beauty everywhere, by night and by day—the city itself presents to the disappointed spectator the barren desolation of a dry, verdureless waste! A closer inspection only adds to the dissatisfaction of the beholder. The general condition of the roads and sidewalks and other necessary evidences of a prosperous community may be truly said to be indescribable! While the city is not wanting in many structures of real architectural merit, they are so handicapped and disgraced by their immediate surroundings as to leave upon the mind only a general impression of dilapidation and disrepair!

Not a single street in the city can be said to afford to the pedestrian a continuously agreeable walk. Scarcely a street in the city possesses a paving of one uniform material of approved quality. Stone blocks moldering, tarred brick, cobbles, rotten planks, ill-conditioned macadam, or the picturesquely varied surface of Mother Earth in her roughest aspect, succeed each other in bewildering succession, and dispute possession of the streets, even down into the very midst of our busiest business centers. One of the causes for this state of things is doubtless found in the fact that no block in the city can be improved without the consent of the majority of the property owners, accompanied with a deposit of the estimated cost—a necessary and useful arrangement in some respects, truly, and an admirable provision for the protection of unwary citizens against the wiles of the knavish contractors of a few years ago; but one, nevertheless, which seems to work a serious discredit to the appearance of our city.

But one of the principal reasons for the desolate aspect of our streets intimated above, is the conspicuous absence of trees. Wheresoever they are planted and *allowed to grow*, they lend a grace, even to dilapidation, while they never fail to afford a beautiful and necessary foil to the most perfect architecture.

And here I wish to interpose a vigorous protest against the *gardener* fiend, who goes about with shears and saw, leaving bald deformity and relentless destruction in his wake! The finest and most promising trees go down before him, and the small moticum of umbrageous beauty we possess is either converted into some form of unnatural monstros-

* Paper read before the San Francisco Chapter of Architects, October 5, 1884.

ity, or is subjected to such mutilation as, alas! too often results in total destruction to arboreal life. Times and seasons never come amiss to the gardener fiend, and the more trees he destroys the better chance for him to sell others to replace them; and to aid him in his nefarious schemes he raises the nearly always false alarm of *dampness*! Go to the beautiful because leafy towns of Oakland, Alameda, San Jose, Santa Rosa, or Sacramento, and ask the inhabitants thereof if the lovely and verdant sentinels, which, in double ranks, guard each shady street and wave high in air their graceful, leafy plumes—ask, I say, if they find *dampness* a consequence of which to complain? Give me tall trees, branching trees, with abundant foliage, and plenty of them, and hail, all hail! to the noble and beautiful blue gum, to whose fresh, verdant leaves no speck of dust ever adheres, and from whose fragrant foliage exhales the very breath of health and sanitation!

What would this world be without the blessings of vegetation? Neither better nor worse than the hideous barrenness of lunar desolation! And yet the average man, in his blindness and folly, never ceases to make havoc of the perennial bounty of prolific nature. But even while she showers her abundant gifts upon her ungrateful children, they fell her forests year by year to gratify their boundless rapacity and selfishness, never even planting a sapling to replace the centuries' monarchs, which they so ruthlessly destroy!

The average farmer only regards the trees on his land as something to burn, and, heedless of consequences, cuts down the finest of them all, to satisfy a passing need! The average townsman is also an enemy to trees, and avoids them whenever he can. The man of intelligence alone regards trees as they really are,—agents of mercy in the hand of God, and endeavors to renew, by planting, the verdure destroyed by his ignorant neighbor. The benefit of trees in the streets of a town, and especially of San Francisco, should not need to be explained. We are every summer swept by comparatively cold trade winds from the west. Every tree planted acts as a wind guard, and serves to modify the blast in its passage across the peninsula.

Rows of trees planted in our streets would greatly temper the harshness of our climate, and would render the town a much more agreeable place of residence, especially to people in delicate health, outside of any considerations of beauty.

But attention has been drawn to the general condition of San Francisco only to furnish a reason for the observations which follow. It seems wholly unnecessary to enlarge on the themes above briefly touched, which one would suppose must be so apparent to those who allow themselves to be interested in such matters, as to sound somewhat trite.

Nor must it be supposed that the city possesses no natural beauty whatever, for even while I write, on the upper levels of California Street Hill, over-looking the city, the fog has swept

across the lower portions, revealing only the larger buildings, and the City Hall, the Synagogue, Trinity, St. Ignatius and other churches, and the great hotels lift their domes, towers, spires, and roofs, through its soft and swathing mantle, and the rising sun gilds them with a glory of soft, matutinal beauty which must be seen to be appreciated, while the Mission Hills beyond, with their lovely waving lines of delicately shaded gray, with the blue mountains of San Mateo County towering beyond, all together present to the admiring gaze as pleasing a picture of quiet beauty as any often seen.

And here I would add a word concerning towers. These appendages to buildings, ancient or modern, notwithstanding their often apparent inutilty, never fail to lend a grace and dignity to a structure, or group of structures, to which they may be attached, unattainable without their aid,—a lofty line leading upwards; a tapering spire reaching heavenward; a square, bold mass rising abruptly against the sky; a graceful pinnacle, whose delicate outline is a perpetual protest against the coarseness and ruggedness of every day life—all, all, are types, of things mental, intellectual, and even spiritual, which in their silent way may act upon the soul, and do their humble, patient, but, nevertheless, noble work of elevating, refining, and spiritualizing to some extent, more or less, the base materialism to which we are all inclined. And by purifying the perception, and educating the taste for the pure, the sublime, and the beautiful, may in some measure prepare the popular mind for the reception of some things that are not popular, namely, the *true*, the *noble*, and the *good*.

To return to our subject. All that San Francisco, that any city needs to become beautiful, not only as seen from the hill-tops, or at a distance, but even in every nook and corner of it, is *supervision*—and improvement. Supervision by people of taste, observation, and experience on the artistic side of practical, every-day life. Such men as *architects* are or ought to be. Who so well fitted as they (constantly engaged as they are in the construction, improvement, and adornment of buildings), to see and suggest the aesthetic needs, necessities, and possibilities of the various localities in which they reside.

Some years ago, in a New England village, it matters not which, there lived a man who saw—well, first of all he only *began* to see—certain disagreeable and desecratable things in the neighborhood in which he lived.

The village was an ordinary village,—white-painted clapboard houses, with green shutters, here and there a brick. In the principal street there was some sort of attempt at paving; in places, fragments of sidewalks stretching away into the borders of the town, and ending in foot-paths beside dusty roads in summer, and muddy roads in winter. Irregular dilapidated fences inclosed ill-kept front yards or gardens, lined by treeless, desolate streets, or perhaps having a chance tree here and there apparently by accident. Each householder

plodding on in his own fashion, altogether regardless of his own or his neighbors' surroundings.

These matters began to interest him, and he felt convinced that by some sort of concerted action a better state of things could be brought about. He gathered together some of the most intelligent of his neighbors, and after meeting with the usual amount of opposition, persuaded a few of them to join him in effecting a few improvements in their own immediate neighborhood. Their street was nicely paved; sidewalks were put in order; front yards improved; fences repaired, and houses painted some other color than white. Trees were planted, and gardens laid out; and they were surprised to find that their property had sensibly appreciated in value. That settled the question with the opposition. The dollar was eloquent, if the man was not, and improvement spread. Trees grew, roses blossomed, beauty began to be developed out of ugliness, and passing travelers began to say, "What a pretty village." Soon dwellers from the neighboring city began to look in, and one or two came to make a summer resort of the place; then others came; better houses began to be built; trade improved; and still improvement went on. The original "improvers" became a permanent society, called a "Village Improvement Society," which found an echo in other dilapidated villages. All sorts of expedients began to be adopted to make country towns and villages more attractive to city dwellers, so that at the present time there are few places in New England, in the neighborhood of large cities at least, which have not felt the impulse of improvement. But it may be asked, What has that to do with San Francisco? It may be answered that what is possible in a village, is equally possible in a large city, and with still greater possible results. The difficulties may also be greater, but one thing is certain, improvement pays, and that is an argument, appealing as it does to the innate selfish interests of the average American home, which seldom fails to attract his attention. The next question in order is, of course, What do you want us to do? I answer, in the first place, Simply to convert the San Francisco Chapter of the American Institute of Architects into a Committee of the Whole on "Local Improvements," and to let each member of the Chapter consider himself appointed as a standing Committee of Investigation and Suggestion, whose duty it will be to report at any meeting of the Chapter on all the various and sundry needs, necessities and possibilities of his own particular neighborhood. In the second place, to endeavor on every available occasion, to interest his neighbors by every available means in joining in the "Improvement Mania." On fit occasions the whole Chapter might interest itself in drawing the attention of the citizens of some particular locality to the desirability of effecting some special object—such as the planting of a street for instance, the improvement of some one of the many unimproved squares in the city, the uniform pavement of some leading street, the plac-

ing of a fountain or a "toilet Kiosque" in some public place. It is a noticeable fact that San Francisco possesses as yet not one public latrine! Where is there a city of like size in which such a state of things can be found to prevail, in any really civilized country? As to fountains, there should be one in every park and in every prominent place in the city, especially in the neighborhood of the principal saloons. Local societies of property owners together with such members of the Chapter as happened to reside in the vicinity, would be very desirable and doubtless possible in certain quarters. Some adequate efforts might be made towards converting Van Ness Avenue into a "Boulevard" with park lots, and grass-margined sidewalks. It would soon become one of the most attractive features of the town, and would be a good beginning. It is said to have been the original intention in regard to that thoroughfare. All that is needed is to get the popular ear, capture the popular eye, and arouse popular attention in the interest of the popular pocket, and the thing is done! For I hold that any improvement in the appearance or convenience of a neighborhood will at once be found to affect the commercial pulse, the pulse which controls the golden current, which circulates like life-blood throughout the popular body, and is at once an indication and a test of the state of the public health not only in a sanitary point of view, but mentally and intellectually as well; for prosperity as surely follows, men-



REAR ELEVATION OF \$5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

tal and moral advancement as does health follow sanitation; and both in their way form respectively a basis for the better life, which is the real strength, not only of individuals, but of communities and nations.

Painting Shingled Roofs.

MORE shingle roofs are painted now than ever before in the history of building in this country. It is mostly seen in cities and suburban towns, although in the country it is by no means rare. Considerable inquiry has led to the conclusion that many have their roofs painted to add to their appearance, which in many cases it certainly does, while others labor under the impression that the paint acts as a preservative to the shingles. The latter are probably right, provided the paint is renewed as often as it needs to be. If the roof is allowed to remain with the paint partly worn off, the shingles will retain more moisture, and consequently decay sooner than they would were they not painted at all. On the score of durability, little can be gained in cost by painting. A good shingle roof unpainted will last a great many years, and the expense of painting it a few times would replace it. One painter, who had painted the roof of his own house, when questioned by a representative of the *Lumberman*, used good logic from his stand-point. He thought that painting a roof would add somewhat to its length of life. "You see," he said, "that I have painted mine. I do for myself what I desire to do for others. If I did not, the influence would be bad."

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American Architects.

THE American Institute of Architects will be convened in annual convention on the 24th inst., and continue in session three days.

The aims, objects, and purposes of the institute should enlist the earnest, thoughtful interest of every intelligent and worthy member of the profession in the United States. It should be recognized and treated as the great "camp-fire" of the profession, around which all should gather—if not in person—in fraternal thought and reflection, at least once a year. As the "parent organization," it has exerted a very beneficial influence in numerous cities and towns, in the organization of local chapters, and the bringing together in fraternal fellowship and intercourse, thousands with interests co-equal and alike, who otherwise might have remained estranged in sympathies for all time; and it is to be regretted that there are and always will be some—and some very excellent and competent men in the number—who prefer professional bachelorhood—a pre-eminent selfishness—rather than a liberal and generous, personal, and intellectual intercourse with others as worthy in all respects as themselves.

To such, there is a standing rebuke in the fact that the parent body has had and holds in its list of membership, many of the brightest lights of the profession—men to whom every intelligent architect in the United States is indebted to a greater or less extent, for the very information and knowledge which enables them to handle with greater perfection the numerous intricate principles and problems involved in the practice of correct architecture.

At the time when the institute was first founded—1852—almost co-existent with California as a State, the architecture of the country was still in the tight laces of ancient ideas, but very few attempting in their conceptions to depart from the teachings and examples of Angelo, Wren, and others of those whose names and memories will continue co-eternal with the grand architectural monuments upon which their names are inscribed. But with the coming together, in 1852, of men of common sympathies and interests, and the development of more enlarged views and fraternal sentiments, there was a nucleus formed, which has since opened out into a broader field of thought, and led to innumerable results—in conception and execution—differing widely from those of former ages, yet practical; serving all present purposes well; in harmony with the advancements of the period; suiting and serving existing conditions better, and more pleasing to the tastes and fancies of present generations, who construct and build, not to meet the views of their successors in life, but for their own present pleasure or profit.

The history of the institute from its inception until the present, is interesting and worthy the sincere attention of every well-wisher of the profession. As before stated, the date of its inception was 1852, but as the

result of our country's trying times, when bloody strife, instead of the peaceful pursuit of architecture, prevailed, its meetings were discontinued and its archives consigned to temporary obscurity, until in 1864, when the return of peace had so far removed the gloom of the past, that the members of the institute renewed active operations, and have since continued, each year enlarging and increasing its influence, and pointing to the time when interest in its welfare will be universal, with all good and true men of the profession.

From an address delivered before the institute (Mr. Gilman), we quote: "It is to the position taken by the institute, and to the wise, beneficent measures inaugurated and urged on the general community by our own body, that I look mainly for the future improved position of the profession; and for the gradual education of the public taste in all that relates to our complicated and fascinating art. I may say now, what I have never lost an opportunity of saying, both in private and public life, that I consider it a great privilege—the greatest privilege in fact that can belong to the professional architect—to become a member of this body, and thus be permitted to aid, individually, as well as collectively, in the great work that we have to do."

Although S. F. Chapter was first organized as the "Pacific Coast Association of Architects," as such its success and permanency was doubted, inasmuch as several attempts of similar character had not long survived their organization. With Mr. Augustus Laver as the first—and at that time the only "Fellow" of the institute in San Francisco—a knowledge of its high character, and of the great benefits likely to flow from union with the central head, led to an earnest desire by all the members, that the "Association" should resolve itself into a "Chapter," which was duly accomplished; since when its growth in interest and permanency has been steady and continuous, and is now well established. And if all the reputable brethren of the profession would, with unity of high purpose, and the earnestness of which they are capable, join heart and hand in setting in motion and perfecting all that a united body of well-meaning, honorable architects may and—if they will—can accomplish, S. F. Chapter would equal the best and most prosperous, as it is now in membership, one of the most numerous Chapters in the United States.

St. Peter's and Angelo.

"TO POPE JULIUS, the world is indebted for that wonder of architecture, St. Peter's Church, at Rome. The vanity of Julius had prompted him to order Michael Angelo to give him a design for his tomb, which the great artist made upon so grand a scale that the choir of old St. Peter's Church could not contain it. 'Well, then,' replied the pope, 'enlarge the choir.' 'Ay, holy father, but we must then build a new church, to keep up due proportions between the different parts of the edifice.' 'That we will do,' replied the pope; and im-

mediately gave orders for the sale of indulgences to carry on the erection of the noble fabric.

"Some of the figures intended for the pope's Mausoleum, the famous figure of Moses sitting in St. Pietro da Vincuti at Rome, and two or three of the slaves at the Hotel de Richelieu in Paris, are preserved. The original design of the tomb is engraved in Vasari; it has much of stately gothic grandeur in it, and was to have been decorated with thirty-two whole length figures of prophets and apostles."

"Eastern" Specifications.

WE have before us copies of printed specifications published in Chicago, intended by the author to meet all of the specification requirements for buildings costing from \$500 to \$10,000. However well adapted they may be for the purposes for which they are intended in Eastern cities, they are in many respects inapplicable to the architectural and constructive arts as practiced upon this coast. To fit them to the building customs of California, they would require considerable corrections. The materials named in numerous cases being altogether different from those known and used on this coast for like purposes, and the general idea of construction differing considerably. Reference is made, not to the intrinsic merits of the documents, but more especially to the fact that the architectural and constructive practices established upon this coast are largely in contrast with those of other cities,—to a great extent special and original, and the greater part of the lumber material particularly. Being Pacific Coast production, it is a very difficult matter for any one to arrange specifications suited to materials special to Eastern markets, and to professional and mechanical customs prevailing, and differing greatly from those in common practice in California.

Eastern Architecture.

WE present on page 135 a new phase of Dwelling Architecture now being introduced in Chicago. As shown, the front is intended to be of pressed brick, with brown stone trimmings, and large carved panel of terra cotta on second story. The porch is of wood with iron railings. The roof is of red slate, and the mansard of black slate, both thus making a strong contrast. The finish of the house throughout is first-class.

This design is well adapted to this coast, and is in striking contrast to the bay window system of this city.

We are indebted for the illustration to the kindness of the editors of the *Inland Architect and Builder*. The engraving presented so many new features that we desired the pleasure of placing the same before our readers. The editor of the journal mentioned forwarded the plate to this office, for which thanks are hereby tendered.

Balance of the numbers of this year given free to all new subscribers for 1885.

*Published at Chicago, Ill.—\$1.75 per year.

W. H. Williams.

THE father of Warner Haywood Williams, the late Stephen H. Williams, was well and favorably known in this city as an architect and gentleman of most scrupulous integrity and uprightness of character, both in and out of the profession. Commencing the practice of the profession in the early days of California, his experiences ran with the numerous changes and exciting scenes which characterized the City's history, up to the day of his death.

The son having the advantage of a thorough training under and with so excellent a father and thoroughly competent architect, entered upon his professional life's work well qualified by example and precept to attain an honorable reputation, and work out for himself a name and fame in the practice of his profession and in domestic spheres, which will bring respect and honor to him in life, and when time's work shall have ended, surround his memory with remembrances worthy of imitation by those now most dear to him, and those who may hereafter fill the place now so creditably occupied by him.

Mr. Williams was born in the city of New York, on the 9th day of February, 1844. Attracted by the glowing accounts of the new El Dorado, his father, leaving his family behind him, set sail for California, and arrived here in June, 1850. In July, 1852, the family rejoined the parent, arriving on the 13th of August. After a few years' study in our public schools, Mr. Williams entered his father's office, on January 2, 1860. He continued there first as an apprentice, and afterwards as a partner, until Sept. 6, 1872.

Salt Lake City at that time presented to young, energetic men an unusually favorable opening. Mr. Williams concluded to try his chances there, and in the middle of September, 1872, arrived in that city. He remained until January 16, 1873, when, finding business very slack, he concluded to leave Salt Lake, and try his fortunes in Oregon. He arrived in Portland, January 23, 1873, and immediately opened an office for the practice of his profession.

Mr. Williams has worthily won the esteem of the business men of Portland and vicinity. Some of the largest and finest buildings have been erected under his careful supervision. He is also an active worker in various secret orders, and was one of the delegates to the Conclave recently held in this city. He is

an active member of San Francisco Chapter of Architects.

Professional Perils and Perplexities.

It is a common superstition among those who contemplate building that the employment of an architect, though it may lead to a better appearance of the proposed building and possibly to some other aesthetic and practical advantages, will surely result in a much greater outlay than was originally intended,—that all following of professional advice will lead to an empty treasury or new assessments and appropriations.

With honest architects—and it is a waste of argument to discuss dishonest people of any

for an architect, honestly aiming to carry out as nearly as possible the instructions received both as to quality and cost, to find, when the contractors' estimates are brought in, that his ambitious client is enraged or discouraged because his five gallons of requirement cannot be put into his half-peck measure of appropriation. He, therefore, flatly refuses to pay for what has been done, on the ground that, through the fault of the architect, he cannot use the plans.

If building houses were an exact science, if it were easy or even possible to say how much it would cost to build any given thing, there would be some ground for this excuse; or if the instructions concerning the amount to be expended were as emphatically set forth and

maintained as is the necessity for introducing certain points in the construction of the building,—an extra window or door, two feet more in width for the hall and three feet more in length for the dining-room, hardwood finish, a stained glass window on the stair landing, oak floors and open fires, a few finished rooms in the attic, a deep cellar and absolutely perfect plumbing,—all these and many more necessities arise during the discussion of plans, and the architect, unwisely, perhaps, but very naturally, infers that, as nothing more is said about keeping within the appropriation, it is preferred to exceed it if necessary rather than forego these advantages. In fact, in most cases, it would be wise if he did, for unless a man must cover the whole cost of his house with a mortgage—in which case he has no call to build at all—it is usually the best policy to carry out a satisfactory plan thoroughly rather than spoil it forever by too rigorous economy.

In the majority of cases, when contractors' estimates exceed the desired outlay, it is not primarily or chiefly the fault of the architect. And it should always be borne in mind that a contractor's estimate is not a safe guide as to the actual cost.

But in case it is plainly owing to the carelessness, the ignorance, or faulty judgment of the architect that the necessary cost of carrying out the plans exceeds what the owner is able or willing to spend, what should then be done? Clearly, as it appears to us, the architect should make such modifications in them as would make it possible to bring their execution within the appropriation. Having done this, or signified his willingness to do so, the man who refuses to pay him for his plans is unquestionably unjust.—*The Builder*.



W. H. WILLIAMS.

Another Competition Fraud.

THE Board of Directors of the Victoria (B. C.) Theater Company have placed before architects, through the medium of the press, a proposition to present plans in a public competition for a theater; also, additional brick buildings to cover a space of 36x120. Total area to be covered with buildings, 96x120.

The printed notice is plain in regard to the structure. The theater is to be of brick, and contain parquette and dress stalls, first gallery or dress circle, and second gallery. In addition to the theater, a three-story building, for hotel purposes, is to be erected. The cost of the whole work, complete, is put down at the moderate sum of \$35,000. This sum is to include everything, with seating, lighting, and ventilation for theater, and completion of brick buildings, stores, rooms, etc.

"The architect whose design may be adopted, will be paid the usual commission if the work is carried out under his supervision; otherwise the sum of \$250 will be paid as bonus without superintendence, as ordered by the Directors."

We have received from "Observer" a communication in regard to the above mentioned building. The gentleman with the *nom de plume* given stands high in a professional capacity, and his thoughts are entitled to consideration.

BAIT FOR ARCHITECTS.

VICTORIA, B. C., September 30, 1884.

TO THE EDITOR OF THE CALIFORNIA ARCHITECT—Dear Sir: Knowing your views, and that of the San Francisco Chapter with regard to architectural competitions, I inclose you a copy of the advertisement which, in their liberality (?) or ignorance, the Directors of the new theater here have issued. The amount offered as bonus and the terms proposed, among other things asking for specifications and estimates, are refreshing in their liberality—a little over a fourth of what (\$875) any architect could claim for preparing plans and specifications alone on an order. The Directors offer a little over the fourth for the chance of being paid, competing with perhaps twelve or fifteen others! It is evidently the object of the Directors to get plans and specifications to build from and save half the commission.

Several plans of some merit have already been received from local and foreign architects, who got private information before plans were advertised for. Therefore a choice was not wanting to the Directors, and makes their conduct the more strange. I think I may safely say that no local architect will now send in plans. Very truly yours, OBSERVER.

We notice the same objection in the notice alluded to above that appears in the statements contained in the advertisements or circulars giving particulars of various competitions that have taken place on this coast, viz.:—

The sum stated in the advertisement will be paid to the architect whose plans are accepted, but the directors claim the privilege of electing their own architect to superintend the building, even if the superintendent never presented a plan.

That this is unjust is apparent to all right-

minded people; \$250 will not pay the labor of the draughtsmen employed to work up the architect's plans; and then to be debarred from superintending his own plan—if it be accepted—is an outrage to all professional architects.

We are assured by competent authority that the amount named as the limit for cost of building is totally inadequate to the ideas entertained by the Directors.

A Word to Publishers of Architectural Works.

THERE seems to be a growing tendency among publishers to issue works containing Architectural Designs. Descriptions of buildings are given and an estimate for which they can be erected. This is all well, but care should be taken not to mislead people who buy the books, in regard to the cost of the buildings. A page should be devoted to a table containing the rate of wages, prices of lumber per M., bricks per thousand laid, plastering per yard, painting per square, and all the rest of the items necessary to complete the building. Great care should be exercised in this particular, and all the amounts given be such that absolute dependence may be placed upon them. Of course, this table would contain the amounts for which the building could be erected at the place of publication of the book. If this were done, it would be an easy matter for one in California to estimate the difference in cost it would require to erect and complete a building of any desired plan. We have heard of many complaints from parties to whom we have furnished books; they followed the plans, the cost of which was given at, say \$1,500; and, after spending \$2,000, found that their house was not fully equal to the plan they followed.

We think if publishers would follow the suggestion mentioned, it would remove one great objection to the purchase of books by parties residing in different localities to the place of publication.

New Styles of Hardware.

WE call particular attention of those interested to the new advertisement on back page of cover. Huntington, Hopkins & Co. is one of the most substantial firms on the coast, and carries a stock unsurpassed by none. They invite owners and builders to call and examine the new styles of bronze hardware. These they keep in great variety. Every variety of mechanics' tools known to the trade, from the smallest gimlet to the finest iron planes, will be found in this establishment. They are also agents for many of the prominent patented inventions which have gained such popularity on this coast. Carpenters in the country who desire a first-class "kit" of tools, should address a note first to this firm, as their immense stock will enable them to fill any order. Prices of everything in the hardware line in conformity with the quality of goods sold.

Smoky Chimneys.

FROM a paper read by Mr. J. P. Seddon before the health conference in London last month, the following abstract is made: Chimneys smoke from five causes: 1. Because air is not supplied to houses systematically, like water, but is, rather, excluded. 2. Because fire-places are illy-constructed, being drawn over from the openings of the fire-place to the flues in such a manner as to provide large vacant spaces above the grates, which contain cold, stagnant air, in contact with which the smoke becomes chilled and is prevented from being drawn into the flues. 3. Because flues are usually made too large. They should seldom be more than nine inches square. 4. Because no provision is made for down-draughts of air to expend themselves before reaching the fire-place. 5. Because architectural guards are not constructed at tops of chimneys against wind. Mr. Seddon depreciates the use of cowls.

Hanging a Grindstone.

TO HANG a grindstone on its axle to keep it from wobbling from side to side requires great skill. The hole should be at least three-eighths or one-half inch larger than the axle, and both axle and hole square; then make double wedges for each of the four sides of the square, all alike and thin enough, so that one wedge from each side will reach clear through the hole. Drive the wedges from each side. If the hole through the stone is true, the wedges will tighten the stone true; if the hole is not at right angles to the plane of the stone, it must be made so, or the wedge correspondingly must be altered in the taper to meet the irregularity in the hole.

Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

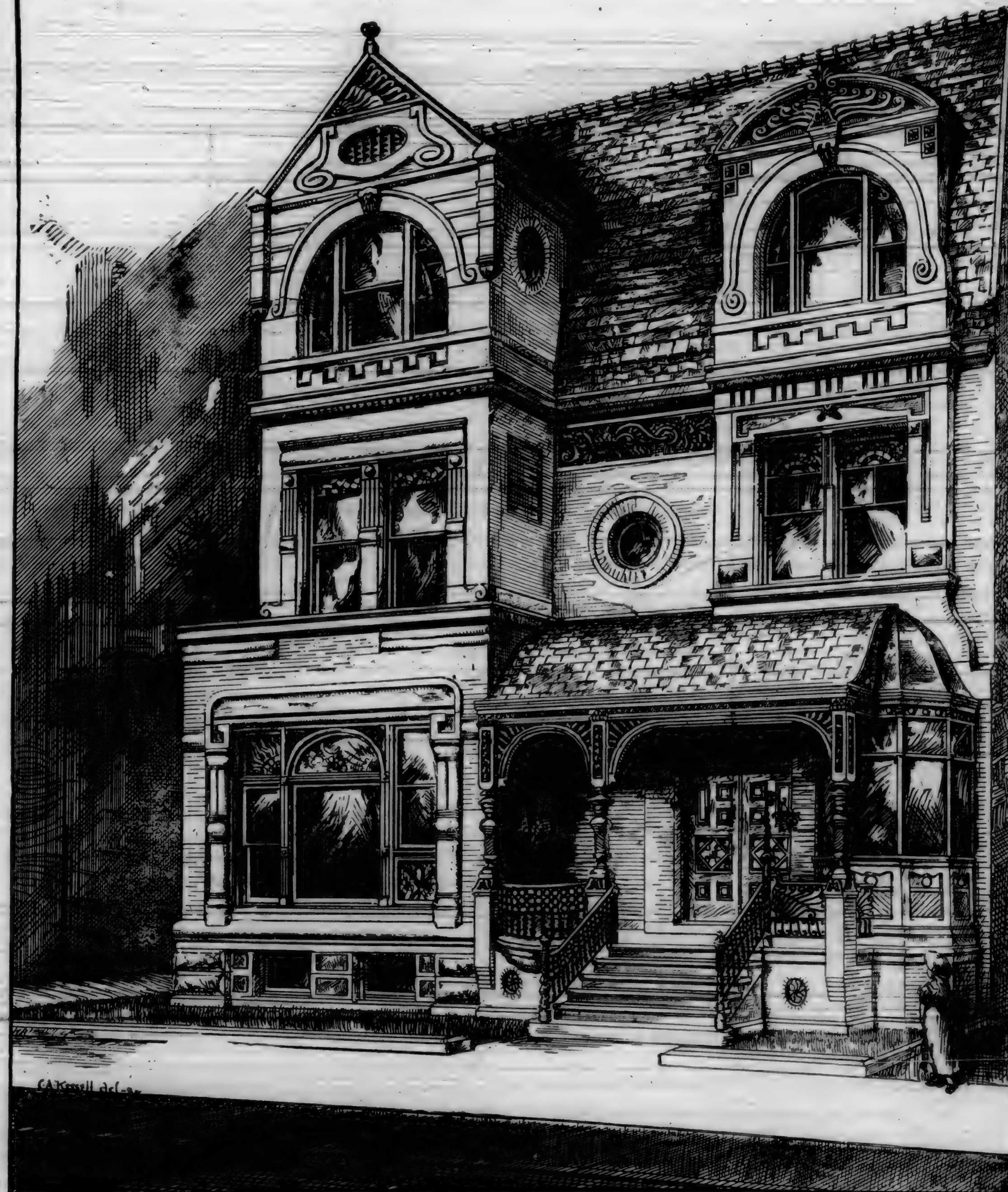
There are to be thirty-nine octavo volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper, neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

PER VOLUME.

Bound in Extra, English Cloth, neat and attractive style.....\$4 50
Bound in fine leather, Library Style.....5 50
Bound in half calf, half Russia, or half Morocco.....8 00
Bound in Russia Leather or Tree Calf.....10 00

Any information in regard to the above will be given by addressing the office of this Journal.

RESIDENCE FOR GAST MILLER ESQ. AM. F. Colton Architect CHICAGO ILL.



A NEW PHASE OF DWELLING ARCHITECTURE. (SEE PAGE 182.)



Sources of Ornamentation.

A. C. BOND.*

NATURE is to be considered merely the germ of ornamental art; art must develop nature's suggestions, combine her forms and, besides pleasing the eye, subserve a purpose. Forms and colors seen in nature excite admiration of a very different kind from that involved in the artistic rendering. This rendering must please the eye, gratify the taste, and exhibit fitness for its special intention. The art of the past, that aggregation of experiences derived from the application of the suggestive hints of nature, is simply a means of study to the ornamentist, an aid to the mastery of principles and rules. The range and variety of illustrations to be found in nature represent every principle on which beauty depends; its study supplies a fertility of resource, even as regards construction, as well as the harmonious arrangement of parts, the ornamentation of those parts, and as to the degree of prominence which decoration should assume. But it is in decoration setting forth the special qualities of the artistic mind, conforming what is material to a designed purpose, expressing the perception and feeling of beauty and truth in the designer, that its great interest lies.

In designing, the decorator has to take into account two kinds of expression, the one definite and certain, the other conventional and capricious, the former dependent on natural principles, the latter upon association. The force of association was illustrated when, in France, archaic severity in ornament, at a period when republicanism had triumphed, was regarded as "the thing," and decoration assumed a funeral aspect. In projecting ornamental designs, as in realizing their effect, mental impressions have to be taken into account in artistic rendering. Thus, in form, angular expresses strength and durability; the curvilinear, softness, delicacy, and fragility.

Definite forms may be classed as the rectilinear and rectangular, the rectilinear but oblique angled, curvilinear forms without contrary flexures, curvilinear forms with geometrical contrary flexure, and curvilinear forms with contrary natural flexure. The discovery of the means by which expression is given to them involves an extensive process of comparison. Often their conjunction has merely the significance that attaches to playfulness and delicacy.

The adoption of ornamental treatment suitable to a material, has a decisive influence on design, as in gold in sheet—beaten, raised in lobes, fluted to give strength and shadow; in wire—in coiled, spiral, and numberless curved forms. Stone has its natural expression in masses, chamfers, etc. This condition does not exclude one material taking designs proper to another. Foliage should perform no office other than ornamental, such as adding richness and variety, filling out forms, and cover-

* Written especially for this Journal.

ing junctions, as in metal work. Hence the impropriety of supporting a canopy on the innate stability of a floral boss.

The Persians, in seeking to produce masses of brilliant and variegated color without offensive gaudiness, betook themselves to mosaics for the adornment of their walls and the exterior of their mosques, showing magnificent incrustations glistening a vitreous glaze. The radiant hues being natural, the colors and tints of real stone could not offend the sight; there was a certain sobriety even in the splendor of surface. Beautifully veined and naturally tinted woods have a charm independent of the design into which they enter, whilst the design, taking them into account, is also enhanced in its effects.

The character of material used for decorative purposes necessarily affects the essential features of ornament. Lustrous or dead surfaces, hues, or intrinsic qualities are themselves constantly suggestive of new devices and effects. Mechanical operations and chemistry, brought to the preparation of materials, wonderfully augment the resources of the ornamentist. Both the art and science are illustrated in enamels, which, having for their base hard, resistive substances that are ground to an impalpable powder, and blended with cohesive elements, are rendered plastic and absorptive of color, finally being fired, so placing an essentially perishable colored design beyond the reach of change.

There are mysterious properties in colors that serve the purpose of the ornamentist, and suggest various departures in design that result in excellent effects without apparent rule. The eye, for instance, possesses the power to supply the complementary color of the hue on which it rests. A celebrated French painter remarked that every bed of violets was surrounded with a halo of purple. Again, whatever the laws that regulate color—and theories and deductions on this point differ—their aesthetic value or influence on the sentiments must be taken into account for satisfactory treatment.

A reed, a flower, a broken stem, what significance may not attach to them when elevated to decoration, as the reed in the flutings of Corinthian columns, the flower in moulded form or beaten metal as a symbol or emblem, like the lotus of Egypt, the broken stem setting off curvilinear lines in a capital or in the mouldings of a cornice, a band or frieze on a vase, or on a panel in simulated carelessness of rendering.

To what are we to ascribe the simply perfect use of color by the Orientals? Whether they use the brightest or most subdued tones, it makes no difference, the patterns are harmonious and gratifying. They value the color only as it assists the purpose of design. As all pleasing effects obtained in decorative art are referable to the conjoined or separate expression of the laws of harmony and contrast, it would seem as though by some latent principle of mind, or passive reception of the subtle teachings of nature, they had unconsciously

acquired their marvelous aptitude to treat color not only appropriately but so as to secure the best results. It is the same with their faience, their enamels, their silk stuffs, and their tapestry and embroideries, executed with surprising manual rapidity, and often without a formal pattern, and not merely in color. Whether by instinct or tradition, they have a marvelous appreciation of true form and proportion.

A man, aided by a child, constructs a gigantic jar as we build a house, and with no other instrument than the hands and a spatula, an amphora of extreme height, and presenting beautiful curves, is produced. On the borders of the Nile, females with their children make alkarazas so elegant in form as not to need the aid of color to command admiration. With Orientals, the sense of the beautiful shows itself in all things.

Flat ornament is the most natural and obvious means of decorating solid surfaces, and this in conventional form. The source of this appropriateness is to be found to resent, so to speak, the moulding or carving of natural forms as something simply imitative, and, therefore, with all the labor and ingenuity exercised, of no high order of art, and therefore not conforming to an imposing position.

In many branches of art the designs are drawn direct from nature. The designers of textile fabrics may be seen with a group of flowers, freshly gathered from a garden, in small vases before them, arranged so as to present some novel or pleasing effects, which are transferred, in modified form, to their patterns. The same colors or precisely the same forms, may not be reproduced, but the flowers and the portion of the pattern dealt with.

Sometimes the flowers that serve as models for decorative metal work are pressed between boards, so as to present an aspect, to some extent conventionalized, for treatment in bas-relief. This method of securing the originals of patterns has for ages been adopted in the East, and serves to account for some of the really exquisite transformations that we witness.

Many forms of the ornamental class are not naturally supplied. Such is the Greek fret series of squares, one within another, interior lines being brought up at intervals, thus getting rid of the mere square. Arabic decoration, though very ornamental at first sight, was in reality based on extremely simple combinations.

It is a curious fact that some of the choicest patterns, apparently of Eastern origin, of the Eastern carpets, have been reproduced from the paintings of old Flemish masters—Van Eyck, Memling, and others, and the Florentine artists, such as Ghirlandajo and Montegna. So also with parterres and table covers. Some of these painters simply give divisions of color and main outline of the patterns, and in place of angles substitute curves; others, like Hans Holbein, delineate even the very stitches.

In a design of varied character the desirability of introducing a few points of resem-

blance between the forms, thus establishing certain affinities, provides a contribution to decoration. The securing appropriateness in the ornamentation is another requirement that has its influence in fashioning ornament. The ox heads and festooned garlands carved on the friezes of Roman temples, had a practical value as betokening sacrifice, whilst in other public buildings they would only have been stupid and vulgar.

Consonance or agreement with the general design is a prime element of good ornament, and it is just because this consonance is not found in ornamentation of a different purpose that the ornamentist finds so much in bygone art that cannot be utilized. The introduction of an opposing tone in colors to impart unity of effect, is a leading element in color design. The upholsterer who brings together two colors—say yellow curtains with green covered chairs—will wisely repeat the green in the curtain in a narrow strip the same as the chairs. Contrast usually involving alternation, some of the most beautiful effects of form are obtained through their connection. To the contrast of form and color decoration owes some of its happiest inspirations. A further source of beauty in ornament is derived from the prevalence of one quality in color, or of a given size of form over another.

It is noticeable that all that is lovely in landscape is produced by contrast of tone, not color—by the bright green of young shoots against the dark, somber green of the older wood; by the gay, light larch against the dark, green fir, and these against the deep, blue sky as a background. The present advance of decorative art is largely due to more attention to contrasts, and to their more skillful manipulation.

The circumstance that the mind never draws the line too close between use and ornament, has led in articles of vertu in the precious metals to the blending of both in structural forms, and with little conventionalism as regards ornament. An instance occurs to us in a silver standard consisting of a stalk with leaves of the alceoplicata regularly folded within the other in alternate directions. The richness of the material justifies the labor and ingenuity expended on elegance of forms. Similarly, on vases of precious metal nature, leaf, foliage, flowers, and stems may be imitated as closely as one pleases in relief, or as undercut work, if only care be taken that it shall fill up a defined and bordered space.

In the arabesque style of foliage and tracery there is a mild freedom which pleases the fancy, partly because no actual natural forms are portrayed, whilst yet they are suggested in the flowing outlines, in the lightness with which the ground is touched and yet transformed in effect, and the way in which the sight is lured to traverse over the whole surface. But as a means of decoration, arabesque is to be used charily; it has indeed the charm of repetition, but where uniformity is equal, the beauty of forms is in proportion to their variety. The harmony established is by

analogy of size, color, and form, but affinities may be carried too far. The true law of harmony is conformation and divergence.

The collected experience of artisans of the past constitutes a leading source of ornament. Carvings and mosaics, figured tissues, stained glass, metal work, even paintings and architectural treatment of decoration, supply a fund of artistic instruction, not for reproduction, but suggestive of new combinations.

The course of ornament, renewing at intervals of time features of previous periods, with new characteristics superadded, has its counterpart in seeds transplanted to new soils and climes, the change resulting in developments that in some respects are wholly new.

Saw Milling in the California Redwood Districts.

ALTHOUGH there may be minor differences, a brief description of the methods employed in logging here will apply to the business generally. The roughness of the ground and size of the timber necessitates an entirely different system from that pursued in the East. Jack-screws take the place of cant-hooks and peaveys, and, instead of a single team, eight or ten oxen with block and fall, or a steam engine is required to move the larger logs. First come the choppers, or rather sawyers, as most of the timber is sawed down now, and it requires much skill and experience to fell these giants without breaking and destroying much valuable lumber. Following these are the barkers with axes and long steel bars to remove the bark. Then fires are set which burn most of the bark, limbs and brush, and if the tree has been broken or split in falling the devouring flames soon find every defect. In due time the sawyers, swamper, jack-screwers and road-builders put in an appearance and perform their respective parts of the work. One man handles a cross-cut saw eight to ten feet in length, and if the applicant for this position does not possess unlimited hope and the muscle of a Sullivan he never gets through the first 10-foot cut. If the logs are up on the side hill, or in some of the side gulches—nearly all redwood grows on rough ground—two men with jack-screws roll and slide them down to where they can be reached by the long, slow-moving 10-ox teams, which take them to the landing on stream or railroad. Where the ground is steep a number of logs are attached to each other by the use of dogs, or steel hooks, driven deep into the logs near the end and connected with chains, and in some places, bridle chains are necessary to retard their progress down the hills. If once the logs get to running their speed is increased by being bumped and pushed by the logs behind until there is danger of running over and ruining the whole team. Such cases require great skill on the part of the driver, but if he understands his business and has sufficient time in which to deliver himself of a volley of oaths, as only a "bull-puncher" can, the oxen are warned of the danger and are seldom caught.

On more level ground the roads are made by imbedding "skids"—logs from 12 to 15 inches in diameter—about half their depth in the ground at right angles with the road, about six feet apart, and the logs are hauled lengthwise across these skids. This would seem as hard work as hauling a cat by the tail, but not so. The friction is removed to quite an extent by the use of oil or grease on the skids and usually 1,000 feet is taken for each yoke of oxen in the team, and in some cases much more. Logs exceeding six feet in diameter are usually split into two, three, or four parts by the use of powder or wedges. This facilitates handling them both in the woods and at the mills, but often at a sacrifice of much fine lumber. As a means of getting the logs to the mills, railroads are taking the place of natural water ways. The size and weight of these logs, the rapidity of the mountain streams, and the uncertainty of floods sufficient for driving purposes, are strong arguments in favor of railroads, and there is no doubt of their superiority over the old way. At first sight an Eastern man accustomed to handling small, light logs, is impressed with the idea that everything moves too slowly here and that little is accomplished, but when we realize that many of these logs are from 50 to 100 inches in diameter, and that the green butts are so heavy that they will sink in the water like a stone, we conclude that these loggers understand their business, and have adopted the best methods.

In the mill there is a mulay, double and single rotary, edgers, butting saws, two planers, which give a capacity of about 50,000 feet per day. The clear lumber passes directly from the saws to the planers, and is dressed green. While it is probable that many of the modern inventions in mill machinery could not be successfully applied in this timber, there is no doubt but the mills here generally can and will be much improved. The few gangs which have been tried are thrown out as impracticable, and steam feed, improved set blocks, live rolls, gang edgers and butters, etc., are the exception rather than the rule. That active competition which has compelled the manufacturers in the Northwest to adopt all new labor-saving appliances would no doubt have a beneficial effect here in reducing the cost of manufacturing, and in due time they will come.—*Northwestern Lumberman.*

Garland Trap.

THIS excellent preventive against sewer gas entering houses, has achieved a reputation in California ahead of all competitors. Some of our largest hotels have lately substituted the Garland for those previously in use, and the result is more than satisfactory to the occupants. Full particulars in regard to the cost, etc., of these traps, can be ascertained by either writing or visiting the manufactory in Oakland.

Modern House Painting. \$ 5.00

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Twenty-first, nr. Valencia. Alterations; one-story and addition.

O.—M. Plover.
A.—H. Warren.
C.—Buckley & Bergman.
\$2,450.

Sutter, nr. Scott. Two-story frame.

O.—P. A. Cook.
A.—W. H. Wharf.
C.—Cummings & Reiman.
\$8,500.

Bush, bet. Steiner and Fillmore. Two-story frame.

O.—Jacob Walcom.
A.—R. Warren.
C.—R. Parker.
\$4,800.

Broderick, nr. Turk. Two-story frame.

O.—O. E. Von Rhein & Co.
A.—G. A. Bordwell.
C.—R. H. Mosbray.
\$3,300.

Mission, nr. Seventeenth. Addition.

O.—G. S. Ball.
A.—Percy & Hamilton.
C.—J. B. Gonyeau.
\$4,840.

Twenty-first, near Fair Oaks. Two-story frame.

O.—E. G. Denniston.
A.—Percy & Hamilton.
C.—J. B. Gonyeau.
\$7,500.

Pacific Avenue, corner Pierce. Two-story and basement frame.

O.—R. H. Pease, Jr.
A.—C. Day.
C.—R. P. Hurlbut.
\$14,000.

Post, nr. Laguna. Two-story frame.

O.—H. H. Herzfelder.
A.—Newsom & Gash.
C.—L. Wagner.
\$4,750.

Mission, nr. Tenth. Four two-story frames.

O.—S. M. McElroy.
A.—H. D. Mitchell.
C.—J. Blake.
\$16,000.

Oak, nr. Laguna. Two-story frame.

O.—P. Swift.
C.—D. F. McGraw.
\$6,000.

Howard, near Fifteenth. One-story frame.

O.—W. C. Thompson.
C.—A. Zilm.
\$1,700.

Ninth, nr. Mission. Alterations.

O.—Miss Kavanagh.
C.—L. W. Russell.
\$800.

Clay, nr. Hyde. Two-story frame.

O.—M. Moffatt.
A.—Schmidt & Havens.
C.—Commary & Beards.
\$8,300.

Seventh, cor. Jessie. Alterations.

O.—J. Nunan.
A.—R. Warren.
C.—T. Sullivan.
\$4,200.

Market corner Valencia. Two-story frame (in rear).

O.—Market Street Cable R. R. Co.
Day's work.
\$6,000.

Howard, nr. Seventeenth. Two-story frame.

O.—W. C. Graves.
A.—G. A. Bordwell.
C.—R. P. Sanches.
\$5,000.

Howard, nr. Twentieth. Addition.

O.—S. Crim.
C.—R. P. Sanches.
\$1,200.

San Jose Avenue, nr. Twenty-fourth. Two two-story frames and stable.

O.—O. F. Von Rhein.
A.—G. A. Bordwell.
C.—R. P. Sanches.
\$8,200.

Twenty-first, near Harrison. One-story frame.

O.—P. McKeon.
\$900.

Hayes, nr. Laguna. Two-story frame.

O.—M. Wigan.
C.—P. Laherty.
\$4,500.

Fillmore, near McAllister. One-story and basement frame.

O.—Mrs. Albrecht.
A.—J. C. Pelton.
C.—A. Klahn.
\$7,500.

Harrison, nr. Twenty-first. Addition.

O.—H. E. Smith.
A.—M. J. Welsh.
C.—P. Loughlin.
\$1,200.

Bryant Avenue, corner Butte. Two-story brick.

O.—T. Hopkins.
C.—P. Fitzsimmons.
\$15,000.

Howard, near Twenty-fourth. Addition.

O.—W. Bloomer.
Day's work.
\$3,000.

Mission, nr. Army. One-story frame.

O.—H. McDermott.
A.—J. T. Kidd.
C.—I. L. Foss.
\$3,000.

Mission, nr. Twenty-ninth. Four two-story frames.

O.—R. Tiffany.
C.—Bamber & Webb.
\$3,000.

Third, nr. Bryant. Two-story frame.

O.—Wickersham.
C.—Bassett Bros. & Co.
\$4,000.

Essex, nr. Folsom. Two-story frame.

O.—H. H. Lusa.
Day's work.
\$6,000.

Greenwich, nr. Kearny. Addition.

O.—Mrs. P. R. Smith.
Day's work.
\$1,000.

Larkin, nr. Geary. Alterations.

O.—J. Green.
A.—F. Leuders.
C.—F. Weinohl.
\$12,000.

Sixth, cor. Bluxome. One-story frame.

O.—W. Noack.
Day's work.
\$1,000.

King, nr. Fifth. One-story brick.

O.—P. Donahue.
A.—W. Patton.
C.—J. Hughes.
\$2,700.

Howard, nr. Tenth. Two-story frame.

O.—W. Deeney.
Day's work.
\$2,500.

Twelfth, nr. Harrison. One-story frame.

O.—J. Schmidt.
A.—Townsend & Wyneken.
C.—C. A. Anderson.
\$1,500.

Twelfth, near Harrison. Two-story frame.

O.—C. Kern.
C.—F. Weinohl.
\$3,000.

Twelfth, near Harrison. One-story frame.

O.—J. Owen.
A.—Townsend & Wyneken.
C.—C. A. Anderson.
\$1,500.

Howard, nr. Tenth. Two-story frame.

O.—J. S. Dyer.
A.—G. A. Miller.
C.—J. Dyer.
\$4,000.

Eddy, cor. Mason. Alterations.

O.—J. K. Prior.
Day's work.
\$18,000.

Birch, nr. Larkin. Three-story frame.

O.—T. J. Crowley.
A.—B. E. Henriksen.
C.—A. G. Fitzpatrick.
\$4,500.

Bush, cor. Broderick. Addition.

O. and B.—H. Petit.
\$1,500.

Union, near Leavenworth. Two two-story frames.

O.—F. Katz.
A.—B. E. Henriksen.
C.—W. Simon.
\$5,400.

Sacramento, nr. Steiner. Two-story frame.

A.—Huerne & Everett.
C.—W. B. Kroger.
\$4,400.

Green, cor. Webster. Two-story frame.

O.—W. A. Barkley.
A.—J. Marquis.
C.—J. Owens.
\$4,500.

Devisadero, nr. Fell. Two two-story frames.

O.—J. Rosenthal.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
\$9,500.

California, nr. Franklin. Two-story frame.

O.—Mr. Talbot.
A.—Wright & Sanders.
C.—Colter.
\$20,000.

Geary, nr. Jones. Two-story frame.

O.—Mrs. E. Woodhead.
A.—Townsend & Wyneken.
C.—P. Flaherty.
\$4,500.

Washington, nr. Fillmore. Two-story frame.

O.—P. A. Alderson.
A.—J. C. Pelton.
C.—A. Klahn.
\$3,000.

California, cor. Franklin. Three-story frame.

O.—M. Heller.
A.—Kenitzer & Raun.
C.—E. Farrell.
\$23,000.

Geary, near Leavenworth. Three-story frame.

O.—J. Hammond.
Day's work.
\$10,000.

Powell, nr. Union. Addition.

O.—C. Boum.
A.—Townsend & Wyneken.
C.—Treadwell & Townsend.
\$1,000.

Howard, nr. Fourteenth. Alterations.

O.—L. Krouse.
A.—Townsend & Wyneken.
C.—B. Bradley.
\$2,000.

Valencia, near Quinn. Three-story frame.

O.—L. E. Wyneken.
A.—Townsend & Wyneken.
C.—J. Geary.
\$4,000.

Eddy, nr. Larkin. Three two-story frames.

O.—L. Kutner.
A.—Curlett & Cuthbertson.
C.—P. Crichton.
\$12,000.

Geary, cor. Polk. Three-story frame.

O.—Dr. H. Gibbons, Jr.
A.—J. Gosling.
C.—Moore Bros.
\$12,000.

Post, nr. Leavenworth. Two-story frame.

O.—Mrs. B. Schoenwasser.
A.—H. C. Mayo.
C.—Anderson Bros.
\$7,500.

Twenty-first, nr. Valencia. Addition.

O.—Miss Plover.
A.—R. Warren.
C.—F. Bergman.
\$2,500.

Church, nr. Twenty-eighth. One-story frame.

O.—J. McGrath.
Day's work.
\$1,000.

Ferry Landing. Slips.

O.—City of S. F.
C.—T. H. Day.
\$1,340.

Duncan, nr. Sanchez. One-story frame.

O.—B. W. Fannill.
A.—B. E. Henriksen.
C.—W. Simon.
\$5,400.

Sanchez, corner Twenty-ninth. Addition.

O.—Anderson & Co.
Day's work.
\$1,500.

Twenty-second, corner Chattanooga. Alterations.

O.—Mrs. Fogarty.
Day's work.
\$3,000.

Fifteenth, near Guerrero. One-story frame.

O.—B. A. McDonald.
\$1,000.

Geary, near Leavenworth. Addition.

O.—J. Donnelly.
C.—G. Bales.
\$1,500.

Scott, near Sutter. Two-story frame.

O.—B. Mr. Wear.
\$5,000.

Pine, nr. Broderick. Addition.

O.—P. Cray.
C.—F. Koettiger.
\$1,500.

Sacramento, nr. Devisadero. Addition.

O.—J. Kelley.
C.—S. T. Green.
\$1,500.

Franklin, corner Austin. Two-story frame.

O.—Mrs. E. Newman.
A.—J. J. Clark.
C.—J. M. Owens.
\$4,100.

Larkin, nr. O'Farrell. One-story frame.

O.—N. P. Wyne.
A.—J. J. Clark.
C.—S. Mills.
\$1,700.

Magdalen Asylum. Alterations.

O.—Sisters of Mercy.
A.—J. J. Clark.
C.—J. Flood.
\$1,100.

St. Mary's Hospital. Remodeling school house.

O.—Sisters of Mercy.
A.—J. J. Clark.
C.—J. Flood.
\$1,100.

Webster, cor. Fillmore. Alterations.

O.—National Brewery.
A.—H. Geilfuss.
C.—W. Huwe.
\$6,000.

Mission, nr. Eleventh. Improvements.

O.—Jackson Brewery.
A.—H. Geilfuss.
C.—J. W. Newbert.
\$12,000.

Laguna, cor. Linden ave. Three-story frame.

O.—C. Seipel.
A.—H. Geilfuss.
C.—H. thom Wohrden.
\$7,000.

Golden Gate Avenue, nr. Baker. Two-story frame.

O.—R. Neubert.
A.—H. Geilfuss.
C.—H. thom Wohrden.
\$4,000.

Ridley, nr. Valencia. Two-story frame.

O.—W. Becker.
A.—H. Geilfuss.
C.—Conrad & Miller.
\$4,500.

Bush, cor. Scott. Two-story frame, brick basement.

O.—J. G. Maas.
A.—H. Geilfuss.
C.—Conrad & Miller.
\$7,000.

San Bruno Road, nr. Twenty-eighth. Addition.

O.—H. Melde.
A.—H. Geilfuss.
C.—Conrad & Miller.
\$650.

Clay, No. 1411. Alterations.

O.—S. Moffatt.
A.—Schmidt & Havens.
C.—Commary & Beards.
\$2,000.

California, nr. Laguna. Two-story and basement frame.

O.—A. Michalitzsch.
A.—Schmidt & Havens.
C.—Commary & Beards.
\$8,500.

Oak, nr. Baker. One-story frame.

O.—J. T. Carroll.
A.—T. J. Welsh.
Day's work.
\$3,000.

Tenth, cor. Howard. Re-pairs.

O.—Scanlon.
A.—T. J. Welsh.
C.—J. Blake.
\$2,000.

Bryant, nr. Second. Three-story frame.

O.—C. Hauchmeister.
A.—T. J. Welsh.
C.—M. Lynch.
\$7,000.

Tenth, cor. Howard. Re-pairs.

O.—Scanlon.
A.—T. J. Welsh.
C.—J. Blake.
\$2,000.

Bryant, nr. Second. Three-story frame.

O.—C. Hauchmeister.
A.—T. J. Welsh.
C.—M. Lynch.
\$7,000.

Tenth, cor. Clementina. One-story frame.

O.—P. Ryrie.
A.—T. J. Welsh.
C.—J. M. Owens.
\$1,800.

MISCELLANEOUS.

Napa—Alterations. O., Mrs. Heron; A., W. H. Wharf; day's work; \$2,500.

Sacramento—Northwest cor. Eighth and J. Addition and second story to building. O., John Q. Brown; A., N. D. Goodell; C., White & Hostrawer; \$6,500. G. bet. Eighth and Ninth. One-story and basement frame. O., Bernard Shick; A., N. D. Goodell; C., B. H. Coyell; \$1,450. J. bet. Eighth and Ninth and Ninth bet. J and K. Reconstructing of brick building. O., Martin Kestler; A., N. D. Goodell; C., Carle & Croly; \$2,800. Three miles east of Elk Grove, Sacramento Co., Cal. Two-story frame dwelling with brick basement. O., Dr. James Caples; A., N. D. Goodell; C., B. F. Bell; \$4,350. O. bet. Twelfth and Thirteenth. Rebuilding. One-story frame and basement. O., Thomas Kenney; A., N. D. Goodell; C., B. F. Bell; \$1,350. J., nr. Sixth. Two-story brick. O., C. P. Nathan; A., J. Seidler; C., Carle & Croly; \$3,000.

Woodland—One-story frame. O., Mrs. A. M. Jackson; C., W. H. Winnie; \$1,500. Second. One-story frame. O., T. M. Prior; A., W. H. Carson; \$3,100. Two-story frame. O., S. Childs; A., W. H. Carson; C., Glenn & White; \$3,100. Westcott. One-story frame. O., H. T. Barnes; day's work; \$1,200. First. One-story frame. O., O. Troop; C., Stamp & Myrick; \$1,500. Main. Woodland Winery; Improvements and machinery. O., Clark & Culver; C., Gilbert & Son; \$1,100. Main. Convent. Addition to first contract. C., brick work, C. C. Scott; C., wood work, S. Caldwell; \$5,050. East Oak Avenue. Extension and improvements. O., M. A. Lee; day's work; \$1,000. Improvements and extensions. O., Thomas Langenour; C., Glenn & White; \$1,340.

Davisville—One-story frame; O., Hex Bros.; C., W. H. Wainie; \$1,310. One-story frame. O., J. E. Hardy; day's work; \$2,150.

San Jose—Second, cor. Reed. Two-story frame and brick basement. O., M. P. O'Connor; A., Theo. Lenzen; C., carpenter, Thos. Livingstone; mason, L. C. W. Otto; \$30,000. Los Gatos Road nr. town. Two-story frame and brick basement. O., T. Burgess; A., Theo. Lenzen; day's work; \$8,000.

Vacaville—Two-story brick. O., Ulatis School District; A., A. A. Cook; C., J. B. McKenzie; \$11,800.

San Mateo—Two-story brick. O., San Mateo Library Association; A., Percy & Hamilton; C., J. Cox; \$10,500.

Oakland—Webster, nr. Twentieth. Two-story frame. O., Convent Sacred Heart; A., B. J. Cline; C., J. Binet; \$3,100. Broadway cor. Prospect Ave. School house. O., City of Oakland; A., S. and J. C. Newsom; C., C. R. Lord; \$7,000. One-story frame. O., J. J. Meehan; A., T. J. Welsh; C., J. Glenn; \$1,500.

Alameda—Central Ave., nr. Willow. Three one-story frames. O., Mr. Wilson; A., S. and J. C. Newsom; C., W. Clark; \$6,500.

Petaluma—Four one-story bricks. O., I. G. Wickersham; A., T. Welsh; \$3,000.

San Rafael—Two-story frame. O., J. Sheehy; A., T. J. Welsh; C., Robertson; \$10,000.

MARKET REPORTS.

Lumber.

PINE lumber may be quoted at almost any price from \$14.00 to \$20.00 for rough, and \$22.00 to \$35.00 for surfaced.

The price of redwood is better maintained, although large concessions may be had on schedule prices ruling a few months ago.

Nails

Are selling at \$2.90 rate for 10s.

Parquet FLOORS

Wood Floors in the European styles. Also

WOOD CARPET

or Ornamental Wood Floors, 2 1/2 inch thick for rooms of all kinds, in new and old houses. We make a specialty of these goods for Floors, Wallpapering, Walls and Ceiling.

Plain and Ornamental. We have the largest variety, largest stock on hand, and the largest factory in the U. S., as well as a large saw mill and factory in a first-class timber country, devoted exclusively to this business, and defy competition in price or quality of goods. Send stamp for book of designs and prices, and the size of your rooms for diagram and estimates.

JOHN W. BOUGHTON, 1118 Market St. Phila. Pa.

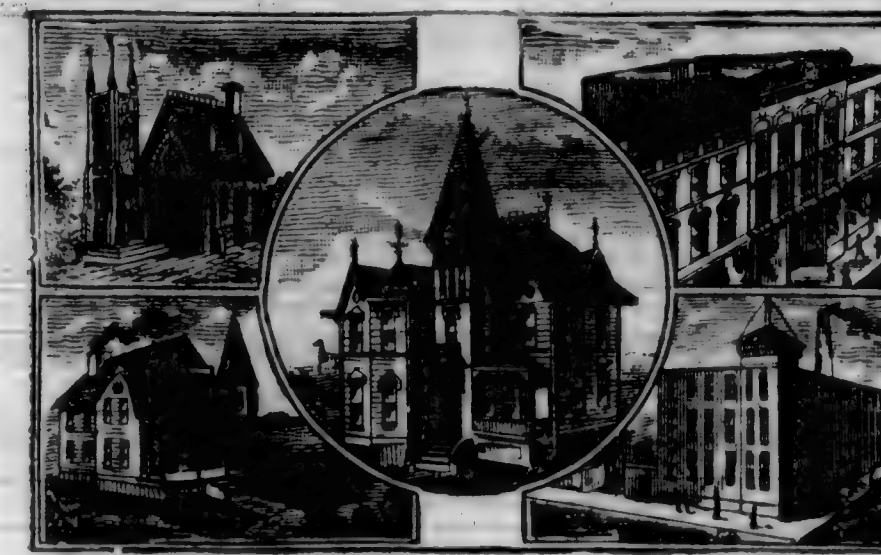
The California Architect and Building News.

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THE California Architect



AND BUILDING NEWS

Published on the 15th of each month

Master Mason's Association.

THE aversion to combinations regulating special interests, and presumably fixing and regulating prices to the disadvantage of purchasers of materials, or the employment of labor, is universal with all classes of owners; consequently, whenever any one class of mechanics or building operatives organize as a body, it matters not how reasonable, right, and proper their action may be—how well sustained by honorable and just principles of self-protection—the suspicion of monopoly and extortion attaches; and those seeking to embark in building ventures, as a rule, scan the condition of the material and labor market, before entering into any definite, progressive arrangements. This is all natural, as no human being, not even the individual participants in the most reckless and soulless extortion ring, is willing to be extorted.

With this as a common rule of practice, among the first inquiries instituted by owners is, "Are there no 'corners' in material or labor?" "Is demand and supply in all directions easy and equal?" And among others the master mason's organization is quoted as suggestive of a "corner" in connection with the mason's work of both brick and frame buildings. This speculative inquiry has been answered in former numbers of this Journal, but as the question continues to be repeated daily, and some people seem anxious to have it believed that the brick masons of this city have combined in society organization for the special cause of advancing the cost of the mason's work, we again repeat, as a fact, that the prime motive, aim, and purpose of the personals of the society, was and is, safety and protection from the uncertainties of the sub-contract system, by which, through the ignorance of values of work and material, or the dishonesty on the part of many original contractors, large amounts have, from time to time, been lost by sub-contractors in all the various branches, and largely so by master brick layers. And while the frequency of failures by original contractors is much less than in former years, there is still a certain degree of risk in sub-contracting, which is sought to be obviated by the master masons demanding their rights as original contractors for all specialties in their line. There is no rule among them regulating prices—that being left with each member of the association to determine according to his own judgment. Nor does the existence of the society preclude those who have not become members from participating in all offered competitions; consequently, owners have the option to confine figuring to society limits, or they may go outside of these, and seek the advantages to be found in those who prefer to take all chances, and catch jobs as best they can.

WHAT has become of the straw lumber which, three or four years ago, we were told would revolutionize the lumber business?

Dwindling Away of Old Customs.

AMERICANS are noted the world over for their ingenious methods and contrivances in adopting machinery sufficient to perform much of the heavy work required in and about buildings; and it is in ill accord with the present plentitude of building novelties for builders and contractors to increase their risks by pertinaciously clinging to a clumsy and inferior kind of scaffolding, and to bungling means for raising materials, instead of adopting contrivances of a scientific and safer character.

Crowds of hodmen continue to excite the pity of the multitude who chance to witness their toilsome climbing, encumbered with the shouldered hod. Apart from the waste of strength involved by a man lifting his own weight with a load of fully one-fourth of that amount in addition thereto, there is no little danger in a fagged, drowsy, or partly tipsy laborer ascending a lofty, upright ladder with a hod seemingly well devised to shoot out a brick or two from its open end. Passers by and workmen on the job are further imperiled when the hodman steps off the ladder on to an already overloaded, slender scaffold, especially when he happens to be quickly followed by a mate making strenuous efforts to poise on his head a badly balanced mortar board.

It is only in country jobs that one sees the almost primeval method of hodmen carrying brick and mortar to the different parts of the building. In the large cities various contrivances have taken the place of manual labor. At first, a block and fall rigged to an overhanging pole were used, by which the various materials were raised to the required place. This innovation, however, at once displeased the hodmen, for with quick perception they saw that the idea, if improved upon, would be the means of displacing a large number of men. In this city, decided steps were taken by them to discountenance the use of any device that would tend to substitute manual labor on buildings.

Some of the objections at that time used by the laborers to the new system seem rather amusing to mechanics in the later days. It was claimed that contractors would use the rope until it was completely worn out and thus the men below would always be at the risk of receiving damages from a rope breaking and the consequent fall of the board. The dust from the brick and mortar would continually be deposited in the strands of the rope and the friction caused by its rapid transit through the block would soon wear the rope out, and aside from the danger mentioned, be a continual expense to the contractor. That the assumption was a false one is shown by subsequent events.

The change from the old way to the new has been a gradual one. It is rarely now that a hodman is seen on our city jobs. The wheelbarrow has taken the place of the hod, and the inclined plane instead of the ladder. Steam power has superseded manual labor, and has to a large extent minimized the danger of accidents.

An inventor called at our office not long since, and showed us working plans of a design through which much of the labor on a building could be dispensed with. It consisted of a long pole firmly secured at the bottom to a carriage, the latter having small wheels to enable one to easily move the pole in any direction. Peculiar sliding extension arms were rigged to the pole, by which it was intended that the load of brick or mortar could be raised to any desired height, and be delivered to any part of a staging within a radius of twenty-five feet, or even if necessary to a much greater distance. We keep our promise to the inventor by simply stating his proposition without giving the details of construction of his "labor revolutionizer."

Put away the old and take on the new is now the motto of mechanics and contractors. Especial study is given to new ways of performing work quickly, and he commands the greatest respect amongst his fellows, who, by dint of hard study and application, can do, with but apparently a slight effort, the most work in the least time, through the methods employed by the knowledge gained in applying the principles gained by such study.

Kitchen Sinks.

AN erroneous idea prevails in the minds of many, that kitchen sinks in daily use requires oft repeated painting in order to prevent them from rusting. It is not necessary to paint them at all. The grease in the dishwasher will keep the iron from rusting. All that is necessary is to keep the sink clean. No paint that we know of will stick to a kitchen sink for any length of time.

WOOD may acquire an oak, walnut or cherry tree color by staining it with ordinary tincture of iodine diluted with spirit until the exact shade is obtained. White shellac must be added to the iodine solution if the stain is to be made permanent, or the wood after the stain is applied may be French polished. The iodine may be laid on with a rag or a brush.

If stove polish is mixed with very strong soap suds, the lustre appears immediately; consequently there is less dust to breathe and blacken.

SPECIAL OFFER.**BOUND VOLUMES OF THIS JOURNAL TO NEW SUBSCRIBERS FOR 1885.**

Upon receipt of \$3.25 we will send a bound volume of this Journal of either 1880, 1881, or 1882 and the full year's numbers of 1885.

We have had an extra number bound of the years mentioned, and make this offer to increase our subscription list. We are bound to increase our list, so that the end of the year 1885 will witness not less than

TEN THOUSAND

Paying subscribers on our books.



FRONT ELEVATION OF \$5,000 COUNTRY DWELLING.—4th PREMIUM DESIGN.

Our Fourth Premium Plan.

ON this and succeeding pages, will be found the full plans and elevations of the design to which was awarded the fourth premium in the competition held under the auspices of the editors of this Journal. Under the *nom de plume* of "Hoosier," credit for the design belongs to J. W. Hammond, Frankfort, Indiana.

The general character of the elevation is more in keeping with architecture as exemplified on this coast, than any of its predecessors. The arrangements of the rooms are shown very specifically by our engravings.

COST OF THE DESIGN SHOWN.

We want our readers to particularly bear in mind that the estimates given for the various competition designs are those for which the houses can be erected at the place where the designs were prepared. None of the premium designs thus far shown, can be built in this city or State for anything like the sum mentioned for each. In the present case the total amount would have to be nearly doubled in order to erect the building as per plans shown.

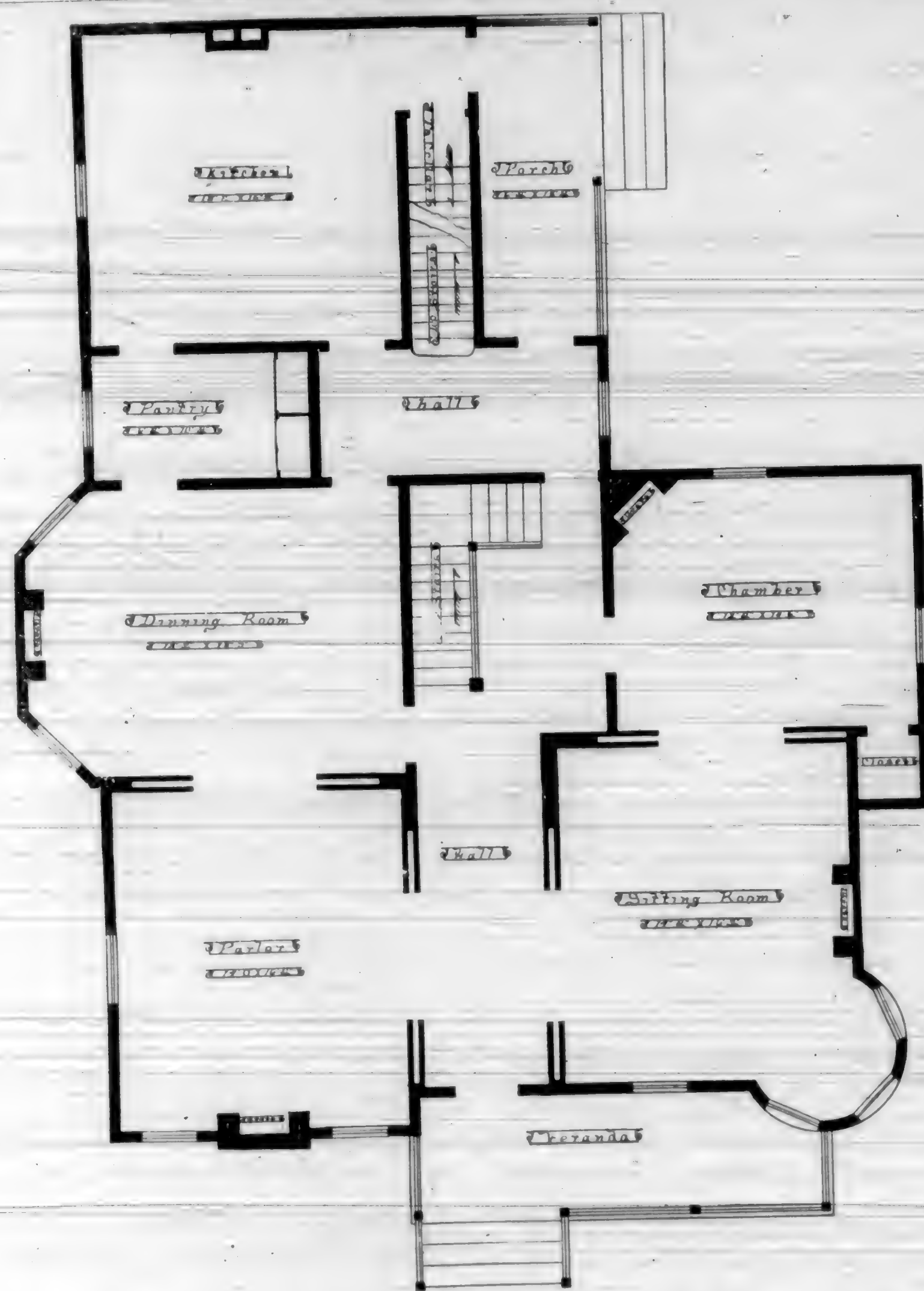
We give below a full estimate as furnished us by the architect. He assures us that it has

been carefully scrutinized by one of the principal contractors of Frankfort, and that reliance can be placed upon the figures given as being correct.

ARCHITECT'S ESTIMATE.

Estimate of material and labor required in the erection and completion of the plan submitted by "Hoosier" (J. W. Hammond).

155 yds. excavating @ 25 cents per yard.	\$ 38 75
2,800 ft. stone foundation @ 15 cents per ft.	420 00
140 ft. cut stone @ 40 cents per ft.	59 00
35,340 brick @ \$9.00 per M.	318 00
1,940 yds. plastering @ 25 cents per yd.	485 00
166 yds. concrete and cementing @ 25 cents per yd.	41 50



FIRST FLOOR PLAN OF \$5,000 COUNTRY DWELLING.—4th PREMIUM DESIGN.

15,188 ft. timber @ \$17.00 per M.	\$258 19
4, 448 ft. sheathing boards @ 20.00 per M.	88 96
5,550 ft. clapboarding @ 22.50	111 00
20,000 shingles @ \$4.00 per M.	80 00
2,500 ft. sheeting @ \$17.50	43 75
220 ft. belt, etc. @ 10 cents	22 00
Cornice	120 00
Tin work	100 00
4,171 ft. flooring (inside) @ \$30.00 per M.	125 13
586 " " (outside) @ \$35 " "	20 51
Stairs complete	150 00
Veranda	125 00
33 windows (box) @ \$12.00 each	396 00
12 " (attic) \$5.00 each	60 00
10 " (cellar) \$5.00 each	50 00
42 doors complete \$12 each	504 00
4 grates and mantles	160 00
Hardware	100 00
Plumbing	200 00
Gas piping	40 00
Painting	400 00
Carpenter work (not included in above)	500 00
	\$4,893 79
Architect fees (complete) 5 per cent.	244 68
Total cost	\$5,138 47

In making an estimate for California, there are several items in the above that must be materially changed. The price given for brick work should be doubled. Add twenty per cent. to the amount set down for plastering. Cornice and stair work are very low. Grates and mantles for the price given, would be too common to suit our ideas. Hardware is much too low. Price for plumbing would have to be multiplied by at least 3, in order to secure a job satisfactory to our "plumbing inspector." Other items are low in comparison with those for which the same work could be performed in this city.

We find the same fault in this plan that we mentioned in our remarks in those already presented in the competition series, viz., a total lack of wash-basins in the bed rooms, one only being shown in the bath-room. No water closet is shown, a fact totally inconsistent with the general character and size of the house.

We make the above remarks simply to call the attention of our readers on this coast to the lack of those things that we regard as

"essentials," the cost given being so much lower than the building will cost here, that no one will be led astray by adopting a plan for a \$5,000 house, when we know that \$8,000 will be required to finish the same satisfactorily to residents of the Pacific slope.

Night Work in Lumber Mills.

ONE of the principal causes of the glut in our lumber market is the greed for gain by our manufacturers; not content with running the mills under their control from 6 A. M. to 6 P. M. they seek to further enlarge their bank account by keeping them running the balance of the twenty-four hours. This is especially noticeable when large contracts have been secured, to carry out which, an extra number of men have been engaged. When the latter have been placed at their respective stations, it is policy in the company hiring them, to keep the men at least a month in their position. And just here is where the trouble commences. One mill running the full day, causes other mills to be run the same time, and, as a natural consequence, in a short time, a vast amount of lumber is manufactured, for which no present use can be found. A slight decline in the building line is met by a similar result in the price of lumber, and thus, those intending to build cannot, with certainty, lay their plans for any length of time ahead, owing to their inability to determine the price of the material most required for their purposes.

Our Exchanges.

WE have made arrangements with the Editors of the following Journals, by which we are enabled to offer quite a reduction to those subscribing for any one of them in connection with this Journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS

Terms, \$2.00 per annum.

With *American Architect* (\$6.00),

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With *The Builder* (\$2.00),

\$3.50 per annum.

With *Hall's Journal of Health* (\$1.00),

\$2.50 per annum.

With *Cincinnati Building Review* (\$1.00),

\$2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.



SIDE ELEVATION \$5,000 COUNTRY DWELLING.—4th PREMIUM DESIGN.

"ALL carpenters know how soon the butt ends of chisel handles split, when daily exposed to the blow of a mallet or hammer. A remedy suggested by a Brooklyn man, consists of simply sawing or cutting off of the round end of the handle so as to make it flat, and attaching, by a few small nails on the top of it, two round disks of sole leather, so that the end becomes similar to a boot heel. The two thicknesses of leather will prevent all further splitting, and if, in the course of time, they expand and overlap the wood of the handle, they are simply trimmed off all round."

The foregoing item has been going the rounds of the press for nearly a year, yet no one seems to have noticed its absurdity. Chisels used by carpenters are of three kinds: Firmer chisels, paring chisels and mortising chisels. Firmer chisels are the ones most generally in use and are employed for trimming off stuff, removing superfluous wood and sometimes making mortises in thin and soft wood, though this latter purpose is not what they are made for. The handles on firmer chisels should always be slightly rounded on the butt end, and in all cases the handle should be turned and have a ferrule on the end next the chisel. These handles are not to be pounded by a mallet; they may be tapped *lightly*, and the rounded end of the handle is sufficient protection to prevent splitting if this rule is kept in

view. To use this class of chisels as mortising chisels, argues one of two things: Either that the user does not know his business, or that he does not possess the proper tools to perform the work he is at. Paring chisels should have flattened handles with the corners worked off, which would make a section of them like an elongated octagon, with four long and four short sides. A paring chisel is much larger than a firmer and is made thin and of a superior quality of steel. The handle should be something larger than the handle of a firmer, and on no account whatever should a mallet be used on it. The paring chisel is used for the finest kind of work and is guided in its movements altogether by the hand. The mortising chisel is a heavier-made chisel, and is generally, though not always, a socket on one end to receive the handle.

Mortising chisels are the only ones on which a mallet is intended to be used, and the butt end of the handle is protected with a heavy iron ferrule. These handles are turned in a lathe and the point entering the socket and the end receiving the ferrule, are fitted nicely to the places they are to occupy.

The idea of a carpenter or joiner using a hammer on the wooden handles of his chisels is something absurd; only a botch would be caught at so unworkmanlike a trick. Putting leather on the tops of handles to prevent them from splitting has been used by carpenters,

cabinet makers and shoemakers for several centuries; by the two former on their brad-awls, and the latter on their "pegging" and "sprig" awls. The cushioning quality of the leather requires a heavier blow for a given effect than when the awls are used without the leather.—*The Builder and Wood-Worker*.

TO MAKE plaster set quickly mix it with water into which a little sulphate of potash has been dissolved. To make plaster set slowly mix it with fine slacked lime. The time of setting may be regulated after a few trials by changing the relative proportions.

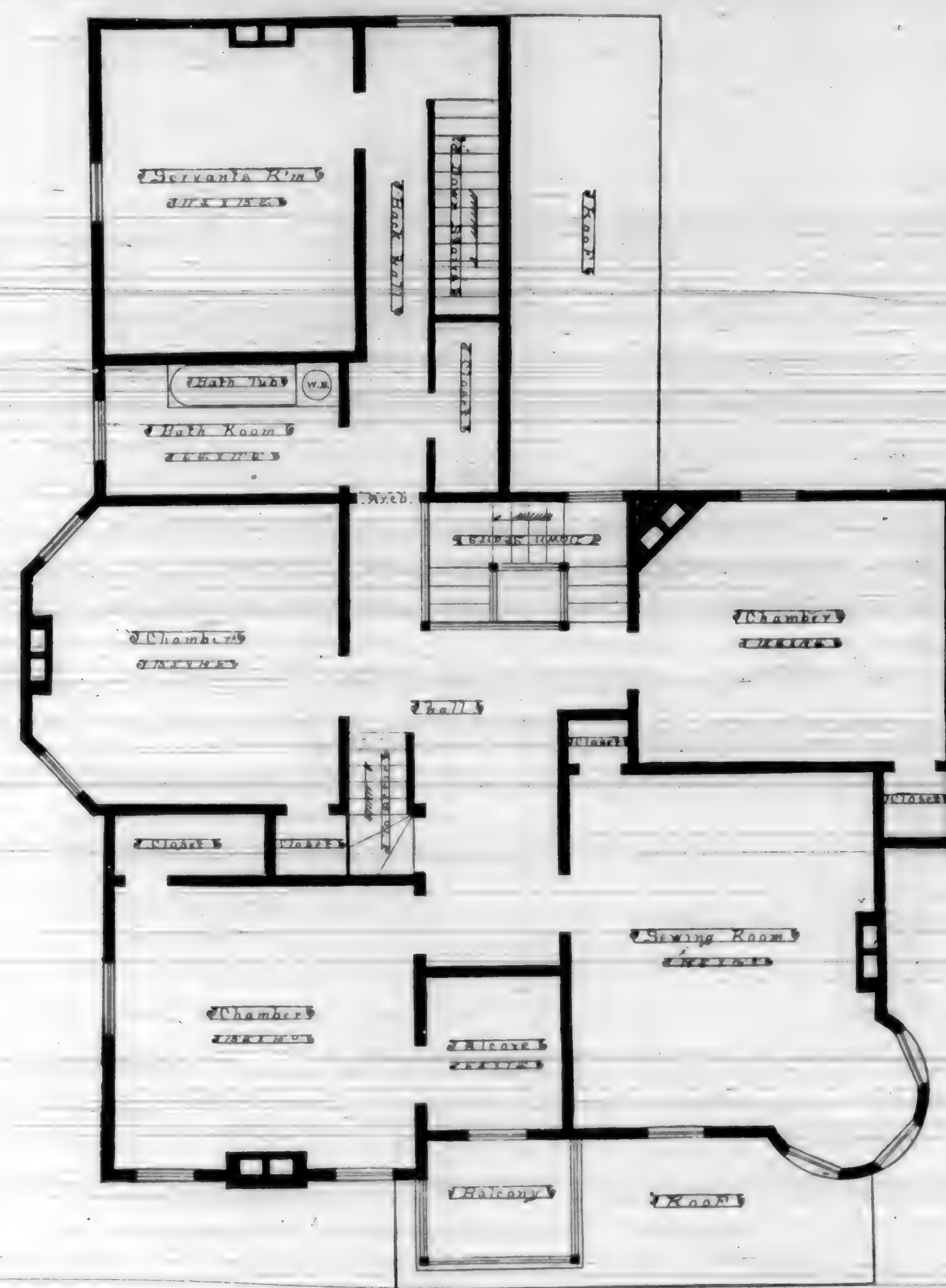
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SECOND FLOOR PLAN OF \$5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

The Locomotive of To-Day.

THE locomotive of to-day is a giant by the side of the production of 1851. The New York Central express engine is a very Anak. Its weight is 84,000 pounds, or nearly two and a half times heavier than its above mentioned prototype. The cylinders are eighteen inches by twenty-four. The average man's head is far below the top of the driving wheels, which are seventy-five inches in diameter. In 1854 a New York express passenger locomotive traveled 25,000 miles in a year; last year the average mileage per engine stood between 70,000 and 80,000 miles. A locomotive for express passenger service costs, taking the experience of the past few years, from \$3,500 to \$10,000 to build. In comparing the locomotives of to-day and a quarter of a century ago, you will notice that while the weight of the whole machine has increased greatly, certain of the dimensions have not altered much. This is because we are limited in various ways in constructing a locomotive. We cannot make the body of the engine over a certain width, because of the gauge of the track; not over a

certain height, because we must keep the center of gravity at about the same position; not over a certain length, because of the wheel centers. So the locomotive must always remain nearly the same in form. It is to increased capacity of boilers that we must look for increase of power. At present an express locomotive boiler is of eighty-horse power, that is, if it were a stationary engine that would be its capacity. But when the locomotive is drawing a train of cars at five miles an hour the boiler supplies the strength of 375 horses, and at forty-five miles an hour the power expended is equal to that of from 700 to 800 horses. That's a curious fact, isn't it? Exchange.

WHEN filing hand-saws there are two objects to be kept in view, namely, cutting off the fiber of the wood, and removing it as fast as it is severed. If the teeth be filed too fleaming, they will cut faster than they will remove the saw-dust. On the contrary, if the faces near the points be not dressed fleaming enough, the saw will tear out the kerf in a rough manner, rather than cut its way through the timber.

The Window of the Ark.

WE were much impressed, at a meeting held a few weeks ago, at various suggestions made in regard to the description of the ark as given in Genesis. The size of that immense structure was settled as being 450 feet long, 75 feet wide and 45 feet high, and was divided into three stories. (Does it not seem strange that our best vessels to-day are modeled in the same proportions as the first great vessel made under the direction of the Almighty?)

In this great leviathan, two of a kind of every living creature were gathered together. The discussion was rather warm on the subject of *how many kinds* there were at that time, and the point was not settled satisfactorily.

The main point, however, was in regard to the *window* of the ark. It was shown that the ark was built on the ground, and as the waters gradually rose, it was lifted from its foundation in a perfect natural way. Of course with the immense weight inside at least one-half of the structure was submerged. Necessarily the animals in the hold or bottom story, lived in absolute darkness. Now how did they get the fresh air which was absolutely necessary for their preservation?

There was but one window in the ark, in size, "in a cubit." A cubit is eighteen inches, so the window was eighteen inches square. We are aware that there is a dispute in regard to the size of the cubit; the size given, however, is that in use by the Hebrews. No matter whether it was smaller or larger than the size given, the other measurements would increase or diminish according to the size given to the cubit.

"Think of one window about eighteen inches square in the roof or near the top of this huge ship, and that remaining closed for 100 days after the flood began. The door was also closed. Moreover the vessel was pitched within and without. It follows that the entire ark was without ventilation. How, according to natural laws, could this multitude of living creatures endure such confinement without ventilation for a day, let alone 100 days, as mentioned?"

Some contended that the eaves of the roof projected over the vessel quite a distance and that under the eaves was an open space that extended around the vessel, giving room for ventilation. Evidently a false assumption, for the space would have afforded egress for numerous small birds, etc.

The window of the ark, and the means by which the latter was ventilated, we will leave to the tender mercies of the scientist, and the cool reasoning of theologians.

SLATE is simply a clay deposit under water, but it is a great resistant of water, and is almost fire-proof—much more so than marble or granite.

"Builders' Guide and Estimators' Price Book." A new edition just received. Will send a copy to any address upon receipt of \$2.00.



SIDE ELEVATION OF \$5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Separating the Branches.

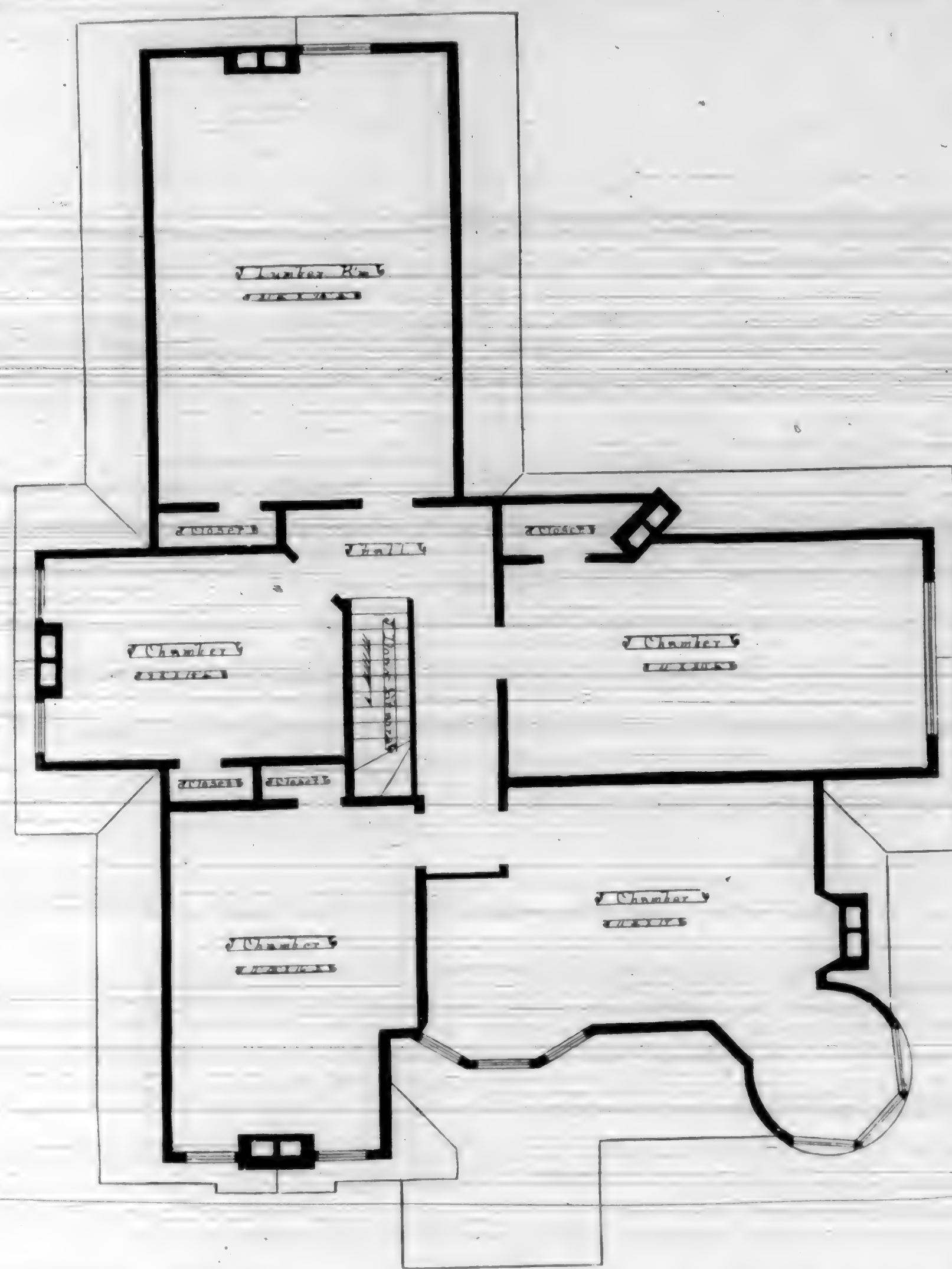
THE rule prevails to a certain extent (and is sought to be made general), in San Francisco, in the erection of buildings, other than the shoddily built, inexpensive class, to separate the various branches of mechanism. There are very many "good and sufficient reasons" why this should be done, and fair and honorable considerations why but few, if any, segregations should be made. There are, and for many years have been, but few instances in which some few of the architects have not practiced the separation of the plumbing, plastering, painting and decorating work, in all ordinary, good, and better buildings. This has been considered a necessity, to avoid the sub-contracting of the branches to incompetent parties, who come not, even if they desired to execute faithful and good work.

But for the purposes of protection against the risks and financial uncertainties attending sub-contracting, and as a matter of right as master mechanics, all the more prominent branches have sought and are seeking to secure to themselves recognition as original contractors. Without, at the present time, presenting any argument *pro* or *con*, we suggest a few thoughts for the reflection of those who are striving to secure a concession from architects and owners, in the separation as asked for. To encourage and justify such a course on the part of architects, the spirit of kindly

co-operation, good will and harmonious intercourse should be made the first principle of action. It is one of the most reasonable and natural things imaginable for men in positions enabling them to control matters to guard against every cause of unpleasantness and annoyance; and if by the segregation of the branches, disagreements, contentions and disputes arise between parties operating, about trivial matters, each pulling his own way, drawing lines over which he will not pass, nor allow others to pass; claiming points, and clamoring for rights, easements, and privileges not consistent with a liberal and unselfish disposition, thereby rendering it necessary for the architect to exercise his persuasive or authoritative prerogative or authority,—a request to make general a rule of action liable to the results suggested would be extremely unreasonable. Consequently, the possession and practice of the right spirit, the spirit of mutual interest, integrity and co-operation, promptness of action, ready acceptance of all legitimate responsibilities, is a first necessity in those seeking to make general a rule by which every man shall be considered and recognized as a *master* in his special line of mechanism; and when this principle of action prevails, and architects become assured that the letting of the branches separately will not impose upon them additional trouble and annoyances, requiring of them patience equal to that of him who refused to "Curse God and

die," then the realization of the result sought will be more likely of accomplishment in its universality.

PAINTING TIN ROOFS.—Tin on a house-top should be well painted once in four years. For roofs light, cool colors are preferable because they reflect the warm rays of light, and thereby lessen the expansion and contraction of the metal and the shrinking of the boards underneath, and so lessen the liability of the tin to crack in the seams. The temperature of attic rooms in summer will be materially lower if the roof be painted with a light rather than with a dark color. The writer has learned from long experience that the finest French ochre is the most economical pigment that can be used for that purpose. If, as is sometimes the case in country houses, where the roof is a conspicuous object in the architecture of the building, a dark color be indispensable, the use of pure Venetian red darkened with lamp-black, is recommended as the most durable and economical. If, by some process the oil used in roof-painting could be prevented from becoming hard and brittle, it would be a great gain. The poorest oil-paint, however, is better than neglect; and the best economy consists in keeping tin entirely and thoroughly protected from the corroding influence of dampness. Old paint, which has become "fatty" from exposure to the atmosphere, is better than new for roof painting. Not a drop of turpentine should be used for such work.



ATTIC PLAN OF \$5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Restoration! vs. Ruins of Carmel Mission Church.

At the regular meeting of San Francisco Chapter, the 7th inst., the "Restoration!" of Carmel Mission Church, Monterey County, furnished a theme of discussion, during which statements were made by members of the Chapter present, who had visited the once universally revered, sacred relic of California antiquity, in the completeness of its ruins, and its solemnly grand desolation under the wear and waste of time; bowing with awe within its once consecrated, but for many years unroofed and broken walls, with reverential feelings akin to that of standing in the spirit presence of the revered and self-sacrificing Padre, who founded the mission, laid the foundations of the church, and dedicated the structure to the service of Almighty God; and whose dust of mortality lies buried beneath where worshipers once knelt in solemn acts of devotion; and, also, since then—since its *transmogrification* into what it is at

present—as much unlike the original as possible—*desecrated*—NOT restored. Its high, steep, Gothic, redwood shingled roof, and its modernized inside finish, wiping out and obliterating all semblance to the original, stone-arched, tiled roof, placed on it by the pioneer Padres of a century ago; the covering up and concealment from view, by plasterers' mortar or cement, the interior stone-work of the walls, which pleasingly illustrated the great care, regularity, and mechanical exactness with which the work was at first done; and many other departures from originality, simply reverses the order of things—the "restoration" being no less than the almost complete ruin of the once venerated ruins, thus exemplifying the entire unfitness of Father Casanova as the managing man, which position he seems to have occupied in the *modernizing* of the ancient edifice. If the reverend superintendent of the work understood the correct meaning of the term restoration, his practical demonstration of that knowledge has certainly produced a something as little like the

original as can well be conceived, short of entire destruction, so far as his judgment and ideas of things have been reduced to practical execution.

The original *façade* of the edifice remains but little altered, as far as bell and stair towers, main entrance, and its peculiar Gothic gable window is concerned, but not so with the front wall itself; the sharp-pointed, Gothic gable rising many feet—perhaps near *y* ten—above its original terminal, so mars and changes general effect that all preconceived ideas of the structure, whether derived from photographs or personal observation, are at fault.

A Lesson in Shop Management.

THE costly results of putting off till to-morrow that which not only can but ought to be done to-day are nowhere more surely felt than in a workshop. The number of failures in business which could be traced to this single cause no statistician will ever be able to compute. How in one instance the evil was pointed out and its consequences checked, is related by the *Cabinetmaker* as follows: We once worked in a shop where a specialty was made of builders' finish, brackets, mouldings, fancy finish, etc. About eight hands were employed in the room we worked in. The machinery consisted of railroad combinations, band and jig saws, panel and buzz planer, a boring machine, and a two-spindle moulder. The two planers and the jig saw had loose pulleys which were so badly worn as to necessitate throwing off the belts from the main shaft to the counter every time each machine was used. In that shop each man took an order from the order book, got out his stock, and finished the job, using whichever machines were needed. When it was necessary to use the panel planer, we had to climb up on the jig saw table and throw on the belt; when the buzz was needed, the planer must be used to stand on, in order to get at the requisite belt. If the planer was running, it must be stopped, thus delaying the man who was running it. One day after getting thoroughly disgusted, we "went for" the boss and asked him if he was going to have those pulleys bushed this year. He said he was going to "just as soon as he got time," but he let them run in this way for two whole months. One day we noted the number of times we had to throw on and off those belts. We used the planer fifteen times, the buzz ten, and the jig saw sixteen times, making forty-one times. It took about a minute to put on, and another one to throw off a belt, thus taking in all eighty-two minutes in one day. There were eight of us who had to do the same thing, so it took 656 minutes, or about eleven hours, to handle those belts—more than one man's time every day. Running this way for nine weeks would amount, at the rate of forty cents per hour, to \$212, and our boss could not find time to have the pulleys fixed. We showed the figures to him one day. He scratched his head, took them into the office, and ten minutes afterwards came out, shut down the shop instantly, and sent those counters and pulleys to the machine shop. A loose pulley that rattles has not been seen or heard in that shop since. You may go into every shop in the land and six out of ten will have one or more of these "hand shippers" in operation. How is it in your shop? If the coat fits, put it on.

The Prompt Return of Plans.

AMONG the many office annoyances to which architects are subjected, that of bidders neglecting to return plans and specifications promptly at the time appointed for their return, is one of the most provoking,—alike to the architect, and the party who by appointment is the next in order to receive and use them. Each party figuring is entitled to the full period of his allotment of time and no more; and the one who by arrangement precedes the other, is in all fairness toward his fellow competitor, and the office which permits him to figure, in duty bound to observe his time privilege, and avoid encroachment upon the time and rights of the "next man," by the prompt return of plans and specifications at the understood or specially appointed hour. In all well regulated offices where business is conducted by rule and system, each bidder is allowed one or more days, according to the magnitude of the work to be figured upon, in which to complete his use of the papers; and when more time is taken by any one of those figuring, than the days or hours appointed to him, he takes—by encroachment upon his successor's time and rights—that which he is not entitled to, and does an unfair thing; for the time of the next bidder in the order of appointment is his own; and his predecessor in figuring is in honor and duty bound to so act his part that the other shall not be subjected to loss of time, nor to any other inconvenience through failure of the first to exercise due diligence in carrying out the understanding which usually in such cases exists. There can be no consistent excuse or palliation in such cases, short of *absolute impossibilities*; and the bidder who is careless and thoughtless in this respect, justifies suspicion on the part of the architect, that the same spirit of carelessness, and lack of promptness may develop, should the not particular one to the successful bidder.

Sometimes plans are delayed and held back for the purpose of shutting out multiplicity of bidders, and lessening competition. This may work in some cases, when circumstances preclude extension of time, but ordinarily such acts simply provoke, and result in the number of parties invited to figure being largely increased, or, as has been the case in some instances, an entire change in procedure, excluding entirely those so manipulating matters.

To the architect it is unfair; involving him in disappointments, and rendering explanations necessary to explain to his client the reason why the number of bids at the hour set for opening is less than had been requested, arranged, and fixed upon; thus rendering it possible for the owner to suspicion complicity somewhere, a result not beyond the bounds of reason when irregularities of the slightest character appear, particularly in cases of "first transactions," and with owners of quick discernment and perceptive minds, qualified by business experiences to take in and apply seeming, if not actual departures from strictly correct and business-like procedures.



REAR ELEVATION OF \$5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

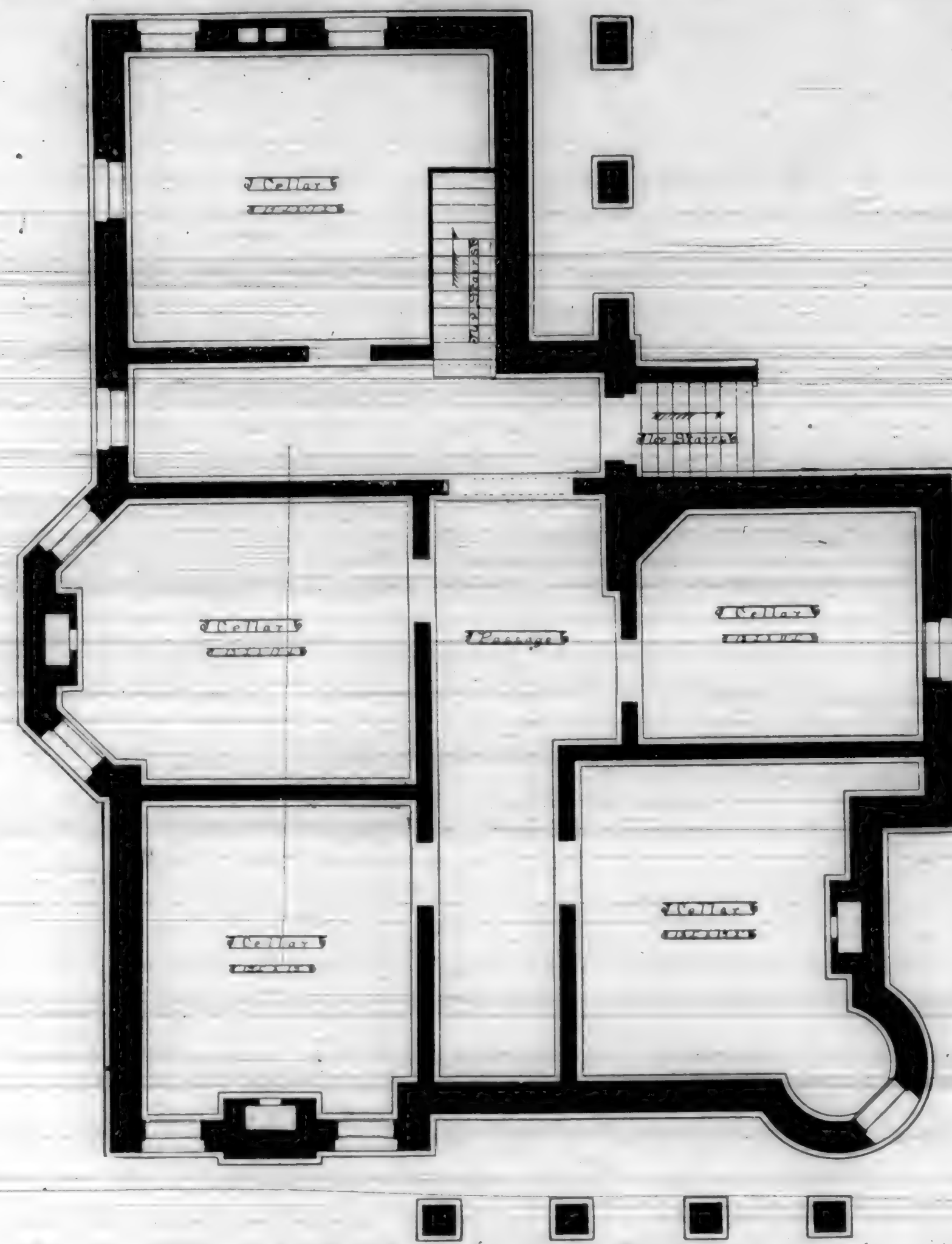
For these and many other reasons, architects have good cause of complaint against such contractors as are negligent in the matter under notice, and all such will do well by correcting their business error in this regard. Promptness in all things, it matters not how trivial, is a good rule to observe, and is one that has characterized the lives of successful men generally.

High Buildings on a New Plan.

A NEW YORK architect has devised a new plan for erecting the high buildings which are coming so much into vogue in large cities. The design is quite novel. The plan is to first erect an iron frame and cover it with a roof as soon as practicable. The walls, of whatever material, may be built at the same time the structure of iron is being built. As the erection of the iron structure will proceed faster than the enclosure, there will be no cause of delay to steady progression while the structure is being built; the interior arrangements, as fire-places, vaults, archings for ceilings and lining for exterior walls, may be put in and ready for plastering by the time the exterior parts are finished. As the iron structure would soon be roofed the work could be carried on independently of the weather. Derricks could be placed on the roof for finishing the

enclosure, and thus do away with unwieldy ones against the sides. The unusually broad piers now seen in buildings could be done away with, thus giving more space for windows on the lower floors, a thing greatly desired. The walls are to be supported by brackets, so that, if desired, any part of the exterior can be removed and repaired. The iron floor girders with the iron floor beams fastened to their sides, are attached to the outer posts at both ends, which will increase the bearing strength nearly one-half. A building built on this principle will combine elegance with security. A building of this description would be fire-proof as far as practicable for the best building constructed. Although they may be proof against catching fire from neighboring buildings, yet, when they are so filled with furniture and other combustibles liable to get on fire, would furnish smoke enough which might prove as fatal to many as flames have been in other cases.—*The Builder*.

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CELLAR PLAN OF \$5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Terra Cotta in Architecture.

ONE of the most marked improvements connected with the building trade in this country during the past decade, is the use of terra cotta, for purposes of architectural decoration. Ten years ago a majority of those engaged in our building trade did not know of its existence, so accustomed were they to simple brick work, painted wood, or decoration in galvanized or cast iron. Fortunately this aspect has changed, and changed for the better in more ways than one. Architects and builders now realize that in terra cotta they have a material at once beautiful, imperishable, and far less costly than a poor quality of stone, when worked into architectural detail. It is also a material that will enable them to utilize and harmonize local materials which, for obvious reasons, are often required to perform a large part in building operations. Terra cotta being composed of clay, is, by the action of fire, changed to a hard and brilliant substance; and by the judicious selection and manipulation of the clays fitted for terra cotta, work of any desired tint and color may be obtained.

It is generally conceded now that the wearing qualities of terra cotta are vastly superior to those of stone of any sort, and builders and those interested in building operations, will serve their best interests by looking into its merits.

The cuts on the opposite pages will serve to show some of the various designs which can be obtained in terra cotta. Any conceivable pattern can be made, thus insuring architects that their conceptions can be carried out in the minutest detail. Architects, as a general rule, can give the fullest information in regard to this beautiful material. Those living far off can only become acquainted with the grand improvements of the city through the agency of trade journals. Owners and others can obtain full particulars of cost, etc., of every description of terra cotta work, by addressing Gladding, McBean & Co., 1358 Market Street, San Francisco.

When a saw has cracked near the teeth, to prevent its continuing, drill a small hole at the end of the crack. This is said to be effectual.

Burning of Barns.

It is noticeable that a larger number of the burnings of barns is mentioned by the periodical press in the summer than at any other time. Some of the fires are undoubtedly caused by lightning, the moist vapor from the uncured hay making a favorable conductor for the electric fluid. But there are barn fires which cannot be attributed to lightning, to lighting of matches, to light from lanterns, nor to the invasions of careless tramps. It may be that the spontaneous combustion of hay is as possible as the spontaneous firing of cotton waste. All fibrous material, when moist, and compressed, and defended from the cooling influences of the outward air, is subjected to a heating similar to that of fermentation; and in some instances the degree of heat is sufficient to cause actual, visible combustion. In the case of recently "cured" hay this danger is as great as, in similar circumstances, other materials may be. Frequently the grass is cut in the early morning, while wet with dew; is turned twice during the day, and gathered and packed in the "mow" or the "bay" before nightfall, with perhaps a sparse sprinkling of salt. Such a compressed mass of fibrous, moist matter will heat. How far the heat will go toward generating a combustion may be inferred from a foolish trick which the writer witnessed several years ago. A large meadow of hay had been cut, cured, and cocked, previous to removal. A shower threatening, the cocks were covered with caps of canvas and left for the night. While getting the hay in, the next day, one of the workmen dropped an unlighted match from his pocket into a cock of hay, and in a few minutes it was ablaze. It afterward was ascertained that he had spoken of the warmth of the hay as he lifted it on his fork, when a companion remarked that it might be hot enough to light a match, on which he put a match into a rick, and before they had passed on five minutes the rick was on fire.

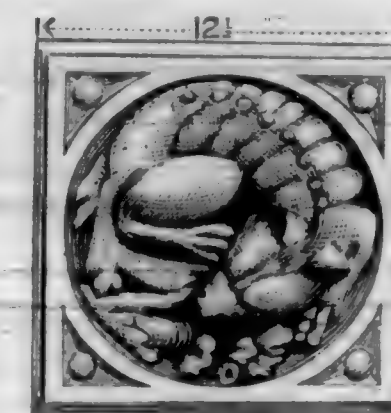
Everybody conversant with farm life, where hay is a permanent and important crop, knows that for weeks after getting in the hay the barn is warm when the doors are opened in the morning. There is an amount of heat that is absolutely unpleasant when the thermometer outside registers 60°, but which is quite welcome with the outside temperature at 40°. This barn heat is undoubtedly from the moist hay, compacted and inclosed. The cure for the possible danger of possible spontaneous barn burning would seem to be the thorough curing—drying—of the hay before it is housed. We dry all our herbs and some of our vegetables without injuring their peculiar and individual qualities. There is no reason why hay or other fodder material stored in large masses should not be rendered equally innoxious to the influences of heat by thorough drying.—*Scientific American.*

"No, sir," said a practical American, "no bric-a-brac on the mantel for me! It's a nuisance. Where's a man to put his feet?"

Architectural Terra Cotta.

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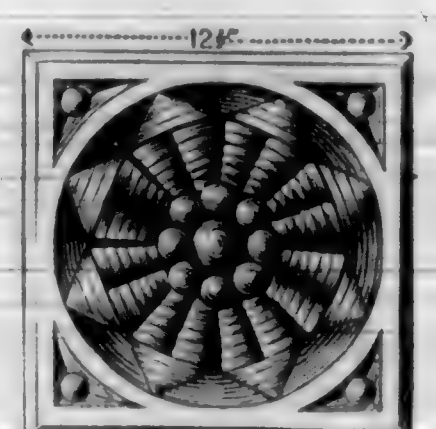
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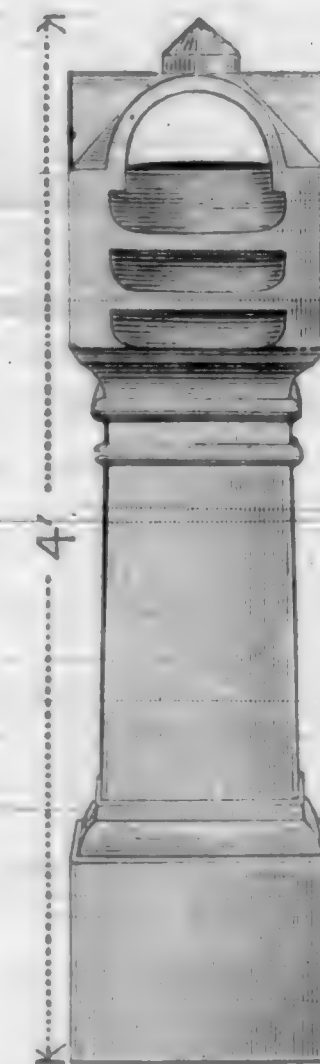


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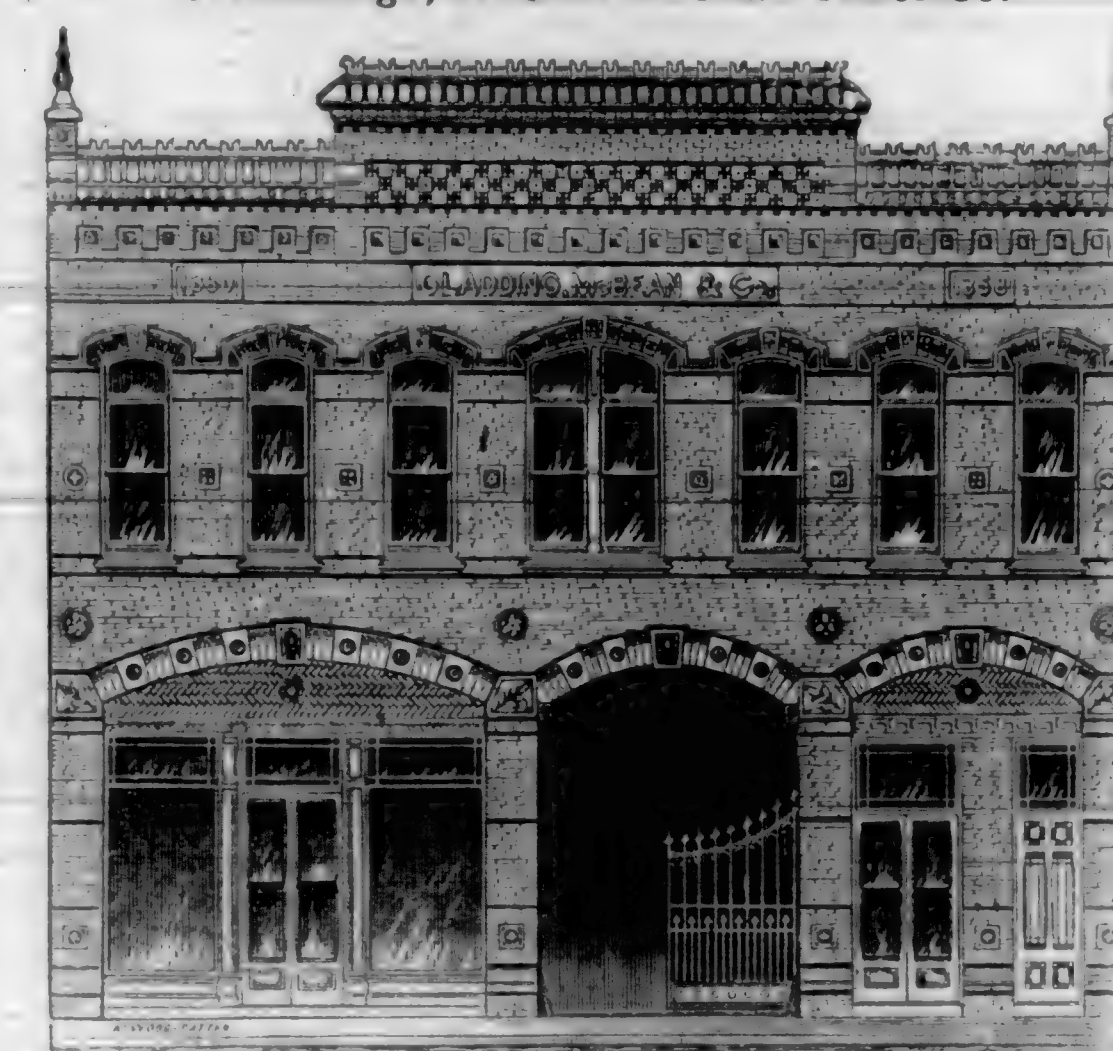


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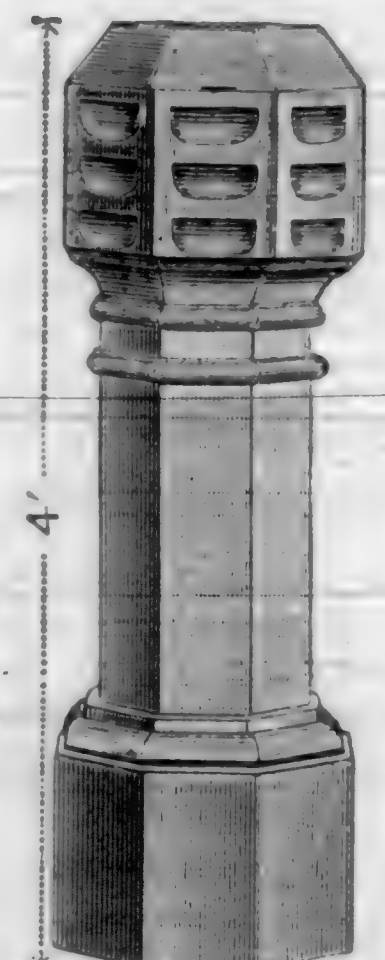
The First Brick Building with TERRA COTTA
Trimnings, erected in San Francisco.



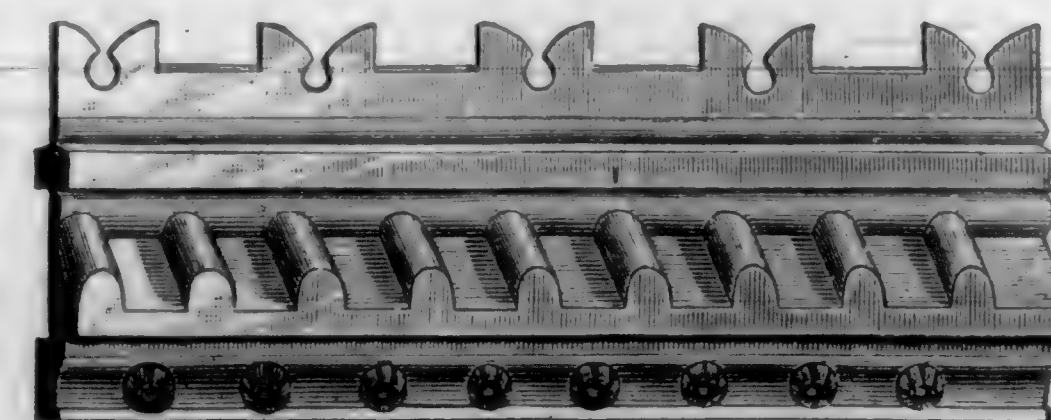
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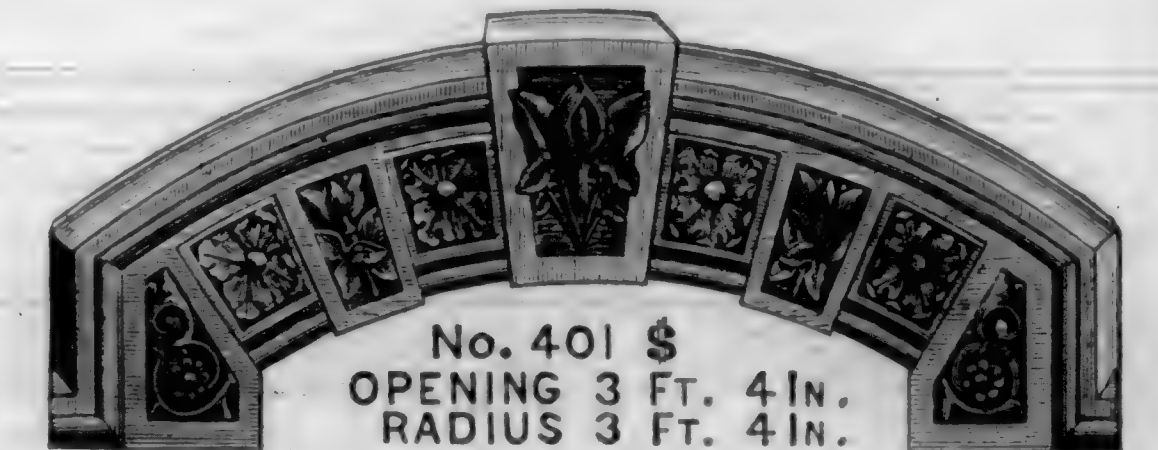
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No. 430. 2 FT. 9 IN. HIGH. 7 IN. PROJECTION. \$ — PER FOOT.

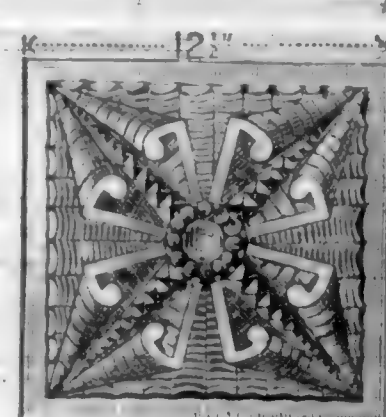
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RADIUS 3 FT. 4 IN.

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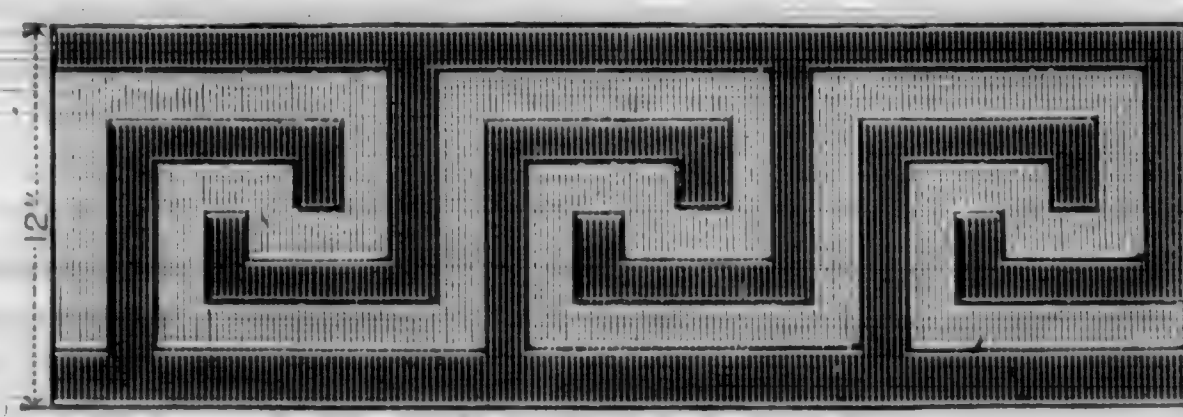
ARCHITECTURAL TERRA COTTA

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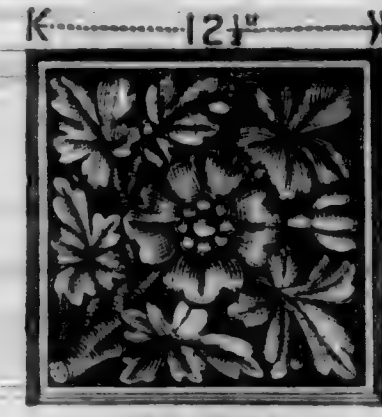
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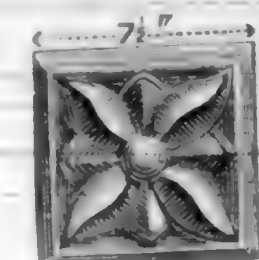
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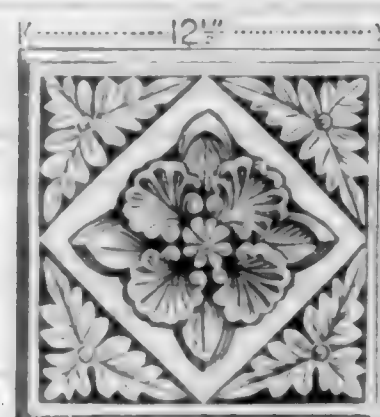
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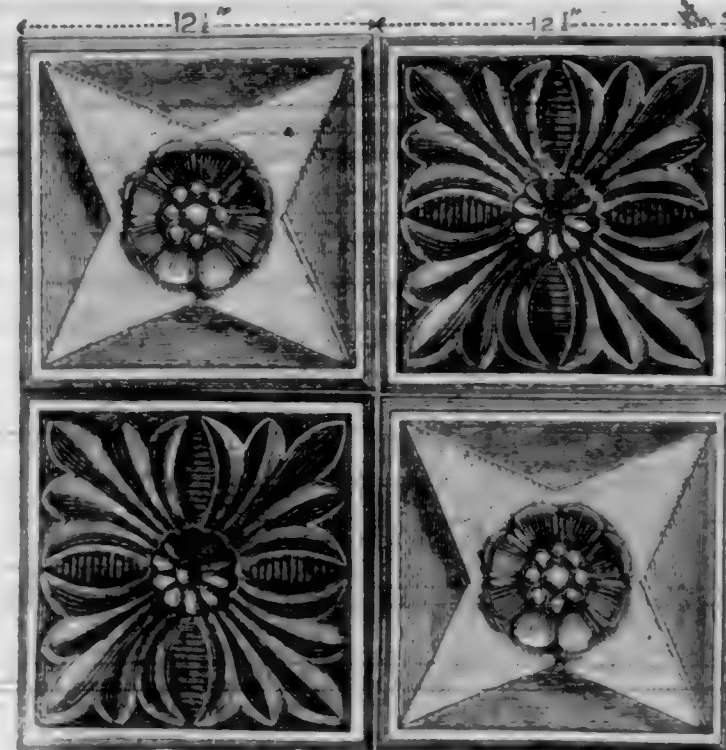
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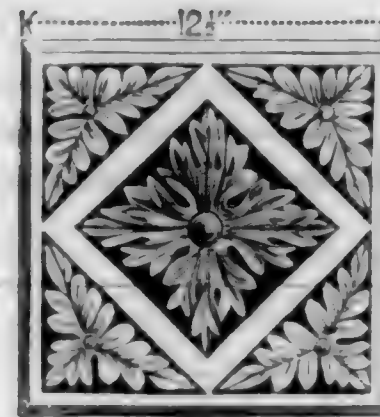


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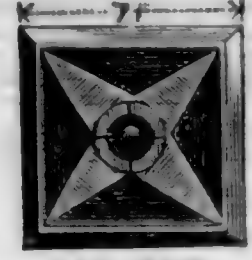


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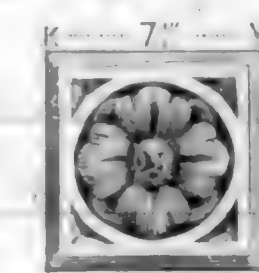
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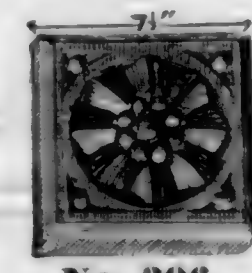
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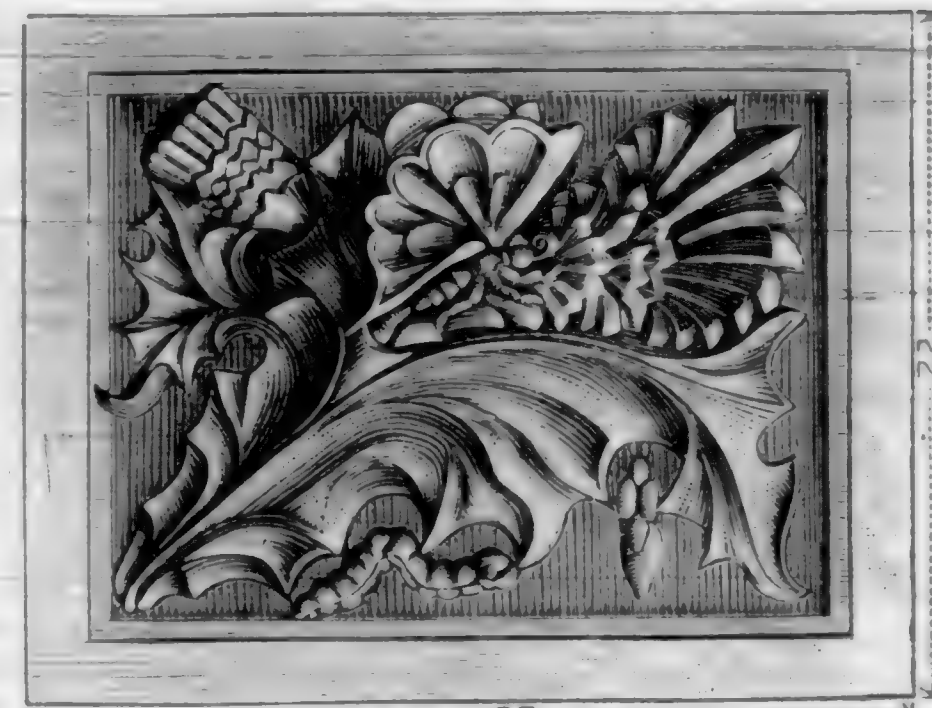
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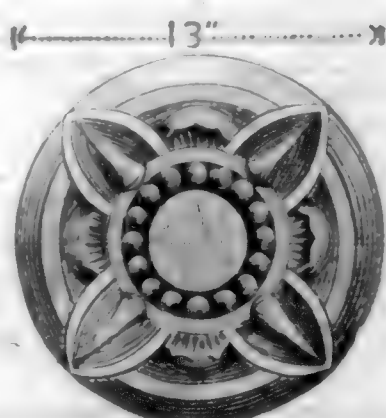
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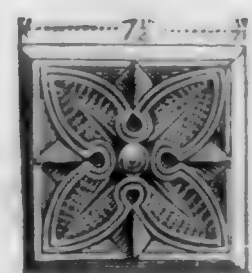
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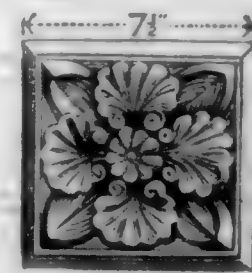
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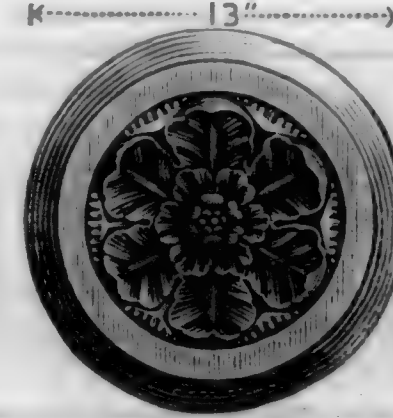
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Designs and Estimates Furnished on Application.

Practical Graining.

IN walnut graining there are many tones given to the finish through the ground-work to meet the various shades found in walnut woods. The red is the most pleasant, and for which a dark copper color ground is used. There is a slight negative to this, in a light reddish purple, made by adding Prussian blue to the previous ground. This tint is seen in some walnut and can be imitated with good effect by stippling with lighter color (water or oil). The color selected for a ground having been placed upon the work to be grained when dry, rub smooth with sand paper, and the work will be ready for stippling. The term stippling means to pounce with a brush endwise, or to flog and whip lengthwise with a flat painter's duster, or a badger hair blender. For distemper or water color use burnt umber for light stippling, and for dark add some vandyke brown. These colors are found in material stores put up in glass bottles. Mix the distemper colors in beer or vinegar to give it adhesiveness. With an ordinary paint brush put on the color over the work, only so much at a time that you can flog it before it dries.

The work when done, should show an even grain of stippling of the color, and uniform in its tone. When this distemper color is dry, it is ready for the oil colors. The amber in oil, thinned with a little turps and oil and with a drop of Japan to set the color; spread this color over your work with sufficient thickness to give a good walnut shade and only so much as you can grain before the setting color gets hard. In graining a door, the panels are done in walnut root, branches or heart growth. The mode prevailing now is to do the panel work in walnut root, the rails in sap growth, with plain wood grain for the styles. The root is worked in short whirling masses of dark color, waving round curling burls, or as seen in French root veneers like rivulets running over and around rocks in a tortuous course, with foam and splurges swaying its way in never ending struggle. It is a difficult wood to imitate, but as every effort to produce it makes a passable imitation it is allowed to pass, while future improvement in succeeding efforts will give more satisfactory results.

To grain in mahogany it is necessary to have a ground of venetian red, tempered with a little white lead. I think this beautiful wood is best imitated in water colors. Provide yourself with the burnt sienna in distemper, and proceed as in walnut to stipple the work, and when dry give it a light coat of varnish. It is now ready to receive the over-graining. For branches of this wood, you need a small piece of flat sponge; cut on one side teeth-like points of one-fourth to one-half inch apart, a stiff business card, a camel or badger blender. For panel branch put on the color, a very dark shade in the middle and light on the sides. Then wet the sponge slightly and commence to form the branch by taking out the lights by an upward movement of the sponge, holding the point toward the center, starting with point lightly, then heavy, forming a semi-circle, then draw

the sponge down with a waving motion to the sides of panel edge. Having done one side of the panel, follow up the opposite side in the same manner. Then take the card, holding it edgewise, press it on the dark parts under the point the sponge has made; open sharp lights right and left from the center to give flashes from which the former lights spring. Follow with the blender and soften the work in an upward course until the harsh lines are all blended softly together. When dry take a bristle top grainer and fill with color so that you can draw it over the work from bottom to top across the panel. The bristles should not be too wet but just enough to make the lines even in the half circle movement from side to side. Blend quickly and give the lines an upward trend, while the dropping ends are joined by the blender to the sides in one whole mass.

The other parts of door where no grain is needed, can be put in waving light and dark lines blended so as to show the transition of light and shadow. The lower and upper rails can be done by laying the blender flat on the work and draw softly across, in waves and blend to finish. The twists and curls of the mahogany when too light add more color to give the necessary effect to the work; keep the blender dry by wiping and drying. Maple and ash woods require lighter grounds; white tinted with yellow serve as a ground for either of these woods. They look well in oil or water. The maple color raw sienna, add a little umber for ash. They are formed in their curls with the over-grainer and blender; the bird's eye is imparted by grouping the finger tips together and tapping the work here and there between the waving lines of the top grainer, after which blend softly to trend the eyes to grain one direction, more in line of the various curves. The following are samples of sap growth of the pine and the Hungarian ash



and French walnut burl work. The pitch-pine requires a light ground similar to oak, and grained as in oak and oil, using raw sienna, and burnt in nearly equal parts. Wipe out the lights as described in a former number of the CALIFORNIA ARCHITECT. The graining is something of the style of oak only a little sharper in the points of the heart growth. The southern pine of Florida has deep lines, and in tone the color is deep in burnt terra de sienna. In graining, the learner should consult the natural woods, to learn from nature her own forms, and imbue the mind with all their varieties, and thus be better prepared to imitate them.

J. E. W. C.

Concrete vs. Brick Floors.

THE designer of a certain warehouse in Germany, unable to find definite data of the resistance of such floors, resolved to make trials for his own information, and incidentally for that of his professional brethren. The warehouse was of immense size, covering nearly an acre of ground, and was intended for the storage, among other things, of heavy pieces of metal, the handling of which often involved considerable shocks to the floors. The whole building was fire-proof, part of the flooring being of brick arches in cement, between iron beams, and part of concrete slabs supported in the same way. Five trial floor arches were built, each 44 inches in span, of which the first consisted of concrete, made with one part Portland cement to five parts of gravel, while the second was of hard bricks in Portland cement mixed with three parts of sand, and was covered with a coat of asphalt three-quarters of an inch thick; the third was of softer brick, in mortar containing one-half as much lime as cement, and four parts sand; the fourth was of the same brick, in equal parts of lime and cement, and five parts sand; and the fifth was of the same brick, in cement alone, mixed with four parts sand. These last floors were finished with a coat of cement, three-quarters of an inch thick or more.

Fifty-four days after their completion, each floor was loaded with pig iron to the amount of 200 pounds to the square foot. This weight had no effect, and two days later the concrete arch was tested by letting fall upon it an iron ball of 60 pounds weight. This, dropped from a height of five feet, did no harm, and another ball, of 135 pounds weight, was let fall from the same height. The first blow produced no effect, but by dropping the ball repeatedly on the same spot a crack was started at the fourth blow, and the eighth broke a hole entirely through the floor, the opening being 4 inches in diameter at the top and 24 inches at the under side.

Thirty days later the same test was applied to another part of the floor, and a hole of the same size and shape was broken through at the ninth blow of the ball. The thickness of the concrete in the middle of the span was 4 inches. Trials were made of the brick floors in the same way. The first, of hard brick in strong cement mortar, stood forty-eight blows of the heavy ball before it was pierced; the second, of softer brick, with lime added to the mortar, gave way at the tenth blow; the third, at the seventh blow; and the last, of soft brick in sandy cement mortar, without lime, at the tenth. In all these cases the hole broken through was much larger at the intrados than at the extrados. A new floor was then built of soft brick, in mortar made with two parts lime to three of cement and ten of sand, and covered with a layer of concrete, of equal parts of cement and sand, 2 inches thick. After this had set, the floor required seventy-one blows of the 135 pound weight to break it through. This protective effect of the thick layer of concrete over bricks is very curious, but aside from this, the result of the tests was decidedly in favor of the brick arching.—Selected.

(Written expressly for this JOURNAL.)

Soil as It Relates to Health.

BY GLENN BROWN, ARCHITECT, A. A. I. A.

IMPORTANCE OF THE SUBJECT.

AS OUR houses and homes rest upon, or have their foundations beneath and surrounded by the soil, it becomes important for us to know the dangers, if any, which may lurk therein. Hippocrates treated on the importance of pure air, pure water, and a pure soil, more than two thousand years ago. He considered the air the most, and the soil the least important of the three. Dr. Pettenkofer thinks their relative importance should be reversed. He concludes from recent observations and experiments, that the soil or ground has, when in a bad condition, greater evil effects than either air or water. He says that malarial and intermittent fevers originate in the soil, is already accepted. I think cholera, plague, typhus and yellow fever's source must be sought in the soil.*

The evils which lurk in the soil are the ground, air, and water, or more properly speaking the injurious germs conveyed by the movements of, or retained in the ground, air, and water.

DAMPNESS AND GROUND WATER.

The soil may be moist, or the interstices between the particles of earth filled with water and air, or the water may stand in the vacant spaces to the exclusion of air. All filth, vegetable or animal matter that may soak or be in such soil, will undergo purification or oxidation but slowly, as the free circulation of air is cut off by the water.

The Romans were evidently aware of the importance of subsoil drainage.

The archaeologist De Tucci called attention to some underground channels in the Roman hills called "*cuniculi*." These channels were examined by Tomassi Crudelli, and found to be exclusively for the purpose of draining the hills. He states in his recent work on the subject, that the ancient Romans suffered much less from fevers than those did who lived in Rome after the drains were destroyed by the invading barbarians, and less than the Romans of the present day suffer.

The above mentioned drains were not described by ancient authors, probably because of their common, every-day use.

By investigation in damp and marshy districts, and in districts either naturally or artificially drained, such physicians as Drs. Buchanan, Haviland, Seaton, and Fenton, of England, came to the conclusion that dampness in the soil is an important cause of pneumonia, phthisis, and like diseases.†

Dr. Bowditch, of Boston, concludes from written statements of resident physicians in 183 towns, that dampness of soil in any township or locality is intimately connected with the prevalence of consumption in that township

or locality.* Dr. Josiah Parkes, of England, in his excellent work on "Practical Hygiene," and Dr. J. H. Ford, of Philadelphia, in his article on "Soil and Water" in Buck's Hygiene, enumerate many instances which tend to prove the important relations between the soil and our health. They conclude that, beside the diseases mentioned, a damp or saturated soil predisposes to rheumatism, catarrh, and neuralgia.

Mr. E. F. Bailey-Denton says: "Wide agricultural districts containing isolated dwellings have been so much benefited by drainage that diseases which in former times constantly prevailed have now ceased to exist."‡

Water lowers the temperature; this in itself has sometimes an injurious effect. Water can only escape from a water logged soil by evaporation from the surface. The amount of heat, or power lost, in evaporating water from a wet soil, is appreciated by but a few. The experiments of Rankine and Josiah Parkes show that thirty inches of rain yearly falling on an acre of land, would take more than 18,590 pounds daily evaporation to exhaust it.‡ To obtain the same results with an ordinary steam boiler, would take 2,400 weight of coal. For every grain of water evaporated, heat is required sufficient to raise 960 grains 1° Fahr. ¶

The experiments of Prof. Schublet, at Tübingen, also proves the effect of ground water on the temperature of the surrounding soil and air.

"Drainage contributes to the dryness of the soil, and improves its temperature, not only by diminishing evaporation and increasing the hygroscopic powers of the soil, but by increasing the power to absorb the heat."—Ford.

The influence of temperature upon the causation of disease is undoubted. Ground water often forms conduits and becomes receptacles for excreta from cess-pools and sewers, and decayed matter from made ground or cemeteries.

In cases of this kind the interstices between the particles of soil become charged with excrement or decayed matter, and the ground air filled with germs. To quote Mr. Simon's words, the earth would be "excrement sodden, and the air excrement reeking."

THE GROUND AIR.

The character, movements, and effects of ground air have been only recently, and in a limited degree, investigated.

Its importance has been shown by the experiments of Prof. Renk and Pettenkofer, with the aid of Ricknagel's differential manometer. Professor Renk found that there was a current of air from the ground into the house for the greater part of the year. This current was found to carry dust, or small particles of matter, organic, mineral, or otherwise, of which the earth was composed. Other observers have shown, according to Pettenkofer, that this

ground air carries germs susceptible of development in suitable solutions.

The effect which the wind has upon the ground air is clearly shown by the following experiment of Pettenkofer:

He takes a long glass tube closed at the bottom and fills it with gravel. Into the axis of this tube he inserts another smaller tube, open at both ends and reaching nearly to the bottom of the large tube. The second tube is attached by a piece of rubber tubing to a glass, V-shaped or trapped tube, which is partially filled with water. (See Fig. 1.) "If a person blow, as represented in the figure, on the surface of the gravel, the liquid in the V-shaped tube will be seen to alter its position, the level side next to the person who is blowing, becoming lowered, and the other proportionately elevated. The depression of the fluid is caused by the air blown through the gravel, because it ascends from the bottom of the



FIG. 1. Pettenkofer's Experiment, (a) small tube, (b) large tube filled with gravel, (c) tube with party blowing through it, (d) rubber tube, (e) bent or V tube with water in it.

gravel through the small tube, passes through the india rubber tube, and thus reaches the water."

If a candle is placed at the mouth of the V-shaped tube, the water having been removed, the flame of the candle will be pressed aside by the current of air. From the experiment it can be easily understood how the ground air is continually moving by the action of the winds on the surface of the ground, or by the state of the atmosphere.

Artificial heat creates a vacuum and draws or sucks the air into the house, unless it is properly protected. In this way air may be brought from some distance through the ground into the house, and impurities which exist near or beneath the house, may be easily conveyed into the house by this means.

(To be Continued.)

WHAT will clean zinc and make it look bright? A.—Whiting or refined chalk in water; finish dry.

A New Idea for Boys.

BY ALLAN FORMAN.

THERE is hardly a boy who does not enjoy working with tools, and "building things," as the expression is. Of course there are some boys who are naturally ingenious and handy in various kinds of mechanical work, and there are others who do not even know how to drive a nail—an operation by no means so simple as it seems—yet they all want to learn.

Occasionally a boy will have the good fortune to find favor in the eyes of some obliging carpenter who is willing to allow him the use of the shop bench and perhaps even some of the tools. But this is always the clever boy who obtains these privileges. The clumsy boy must go on driving his nails sideways, and cutting his fingers with his chisels, until he becomes disgusted with mechanical work.

There have been several schools for mechanics established in different parts of the country, but none quite on the principle of the Gramercy Park Tool-house Association, which will begin operations in New York this autumn. This is really an association of boys in the form of a stock company, governed by mutual agreement, as any similar organization, and joined together for the purpose of maintaining a well-stocked tool-house, and providing suitable instruction in the use of tools.

Carpenter's tools of the best quality and most approved patterns will be provided from the fund, and the boys will not only be taught how to use them, but, what is even more important, how to keep them in order. While the pupils will be allowed to follow their own choice in the kind of work they do, they will be advised by the superintendent, and the products of their industry and genius are to be disposed of at auction at the end of each term, for the benefit of some charitable institution.

The shares in the association are, of course, really paid for by the parents of the boys, but the theory of self-government is carried out as if they were the *bona fide* owners of the stock. This principle of self-government in itself is an excellent thing, for it teaches the idea of individual submission to laws, which are perhaps distasteful, for the public good.

As to the main object of the association, the idea cannot be too highly commended. There is nothing which is so useful to a man in after-years as some knowledge of mechanics, which can be easily acquired in boyhood. How many a man envies his neighbor his ability to tinker a broken lock, or to arrange without apparent trouble those thousand and one little conveniences that a "handy" man enjoys making for the benefit of his household!

The use of tools teaches a boy any number of other things which are useful to him all through life. He learns much of the great principles which underlie the science of mechanics. It teaches him to be accurate in his measurements, to be careful and neat in his work, and it fosters a taste for the higher me-

chanical pursuits; and—an argument which always appeals strongly to parents—it gives the boy a place where he is enjoying himself, yet at the same time he is learning something which will be of advantage to him in future.

But the Tool Association is not confined to carpentry alone. Moulding and casting in plaster and clay, elementary chemistry, geology, and microscopic investigations, will form a part of the interesting work they have laid out for the coming season. The tool-house and laboratory are thoroughly stocked with tools and instruments. Practical mechanics have been engaged to overlook the work of the boys, and the whole will be under the direction of Mr. G. Von Taube, the originator of the scheme, who will advise with the young stockholders, and see that the rules are carried out.

A boy who could not pass many happy hours in the association's pleasant work-room must be hard to suit. The only pity is that such schools are not started in all the large cities. There can be no doubt that they would become popular.

Brass for House Interiors.

BRASS, from its composition, can only be used in the interior of buildings, and should not be exposed to damp. Its natural pale yellow color is very agreeable, and is due to the presence of zinc. It is not highly malleable, but may be cast and treated like bronze, or by a process of annealing rolled into thin rods and sheets, and worked up in the same way as iron. It is difficult to give a decided preference to either method, though they are so totally opposed in principle and practice. The present tendency is in favor of wrought brass, welded, beaten, pierced, hammered and riveted as in iron; for this exhibits the individual skill of the handicraftsman, and possesses a sentimental value that cast work, which can be produced *ad libitum*, cannot possess. The designs should be more severe and precise than if intended for forged iron, and more pierced and embossed work should be introduced. It should be sparingly used, and the redundancy of polished brass in some of the newest restaurants in London, though affecting to be the quiet and unpretending style painted by Hogarth, is vulgar. The works in ormolu, of Louis XV., and Louis XVI., which are of cast and chased brass gilded, are too beautiful to afford any scope for adverse criticism, but objects designed to be cast in brass should either be of great delicacy or great simplicity. Though the arts for working in at least what are called base metals are not yet in the position their importance in the past and in the present entitles them to, the future is full of hope, and we may trust that a time is at hand when men of exceptional power, though engaged in what have been regarded as the humblest industries in which art can enter, will be able to impress the seal of their genius on their work, and hand their names down to posterity.—*Builder and Wood-Worker.*

Make Your Own Gas.

OWNERS of country stores and dwellings should use every precaution against fire, as the non-proximity of fire engines and scarcity of water oftentimes cause a small fire to develop into a disastrous conflagration. Since the first introduction of coal oil as a means of illumination, various contrivances have been placed in the market, by which gas could be manufactured from that substance. For more than twenty years improvements have been made in gas machines, until there has been developed one that is as near perfection as scientific study and investigation can produce.

These machines are guaranteed absolutely safe in their operation, simple in construction, not liable to get out of order, and require no skill to manage. They require less attention than a common kerosene lamp. No fire is used in the process of manufacturing gas by these machines. Cost of gas will be less than one dollar per thousand feet.

The tank, containing the gasoline, is buried in the ground and is delivered in permanent pipes and fixtures to the proper distributing points. Consequently, no danger or trouble is engendered by frequent removals of the fluid. Full particulars in regard to these machines will be given by addressing A. F. Nye & Co., 609 Market Street, San Francisco, who are the sole agents for the best machine manufactured.

Queen Anne Hodge-Podge.

Architect—Well, I declare that is a pretty fair house plan for an amateur, only you have left no space for stairways and closets. Did you make it yourself?

Prospective Builder—Yes, but the only thing that puzzles me is to know what style of cottage it is. It is not Gothic, nor Italian, nor—

"No, it is absolutely nothing. As to style, it is simply a meaningless hodge-podge, to be frank with you."

"Well, what shall I call it, have you no name for hodge-podges?"

"Oh! yes. We call 'em Queen Annes."

A RECIPE for acid compound that will restore worn or blunt files to utility. Clean the files by brushing them clean of dirt and grease as well as any foreign metal sticking in the teeth; then dip in a strong alkali for a few minutes to remove all traces of grease from the bottom of the teeth; rinse in clean water, then dip a solution of 1 part nitric acid, 3 parts sulphuric acid, to 7 parts water. Time 5 seconds to 5 minutes, according to cut and wear. Rinse in warm lime water, dry, and oil slightly. Finally brush with powdered charcoal to take off excess of oil and give them the peculiar look of new files.

POWDERED glass for making glass paper, filtering varnishes, and other purposes, may be made by heating a piece of glass red hot and plunging it into cold water; it will immediately break into powder. This must be sifted and dried.

*An address by Dr. Maxvon Pettenkofer, Popular Science Monthly, Vol. XX.

†Ninth Report of Medical Officer of Privy Council, London, 1866.

*Massachusetts Board of Health Report.

†Handbook of House Sanitation, E. F. Bailey-Denton, London, 1892.

‡Journal of the Royal Agricultural Society of England, Vol. V.

Angelo's High-Spiritedness and Separation from the Pope.

POPE JULIUS II. commissioned Michael Angelo to erect a mausoleum. When he showed it to the pope his holiness inquired the cost of such a splendid piece of work. Michael answered that it would amount to a hundred thousand crowns; and the pope liberally gave him to expend twice that sum. The mausoleum was commenced. Pope Julius was so delighted with it that he had a covered way from his palace erected, that he might visit the artist at his work *incognito*. This was too great a favor not to excite the envy of a court. Ill words and unkind slanders were spoken of Michael. They reached the ears of the pope, as it was intended, and he visited Buonarroti no more. Michael came to the vatican, which had been at all times open to him; but it was not so now. A groom of the chamber stopped his entrance.

"Do you know to whom you speak?" asked the indignant architect.

"Perfectly well," said the man, "and I only do my duty in obeying the orders my master has given me."

"Then tell the pope," replied Michael, "if he wants me he may come and seek me elsewhere himself."

The insulted artist returned immediately to his house, ordered his servants to sell his furniture, and follow him to Florence; and left Rome that very night. Great was the pope's consternation. But it was too late; he had already passed the boundary of the pope's jurisdiction, and force was of no avail. The couriers reached Florence and delivered the pope's letter. Michael's answer was this: "I have been expelled from the antichamber of your holiness without meriting disgrace; therefore I have left Rome to preserve my reputation. I will not return as your holiness commands. If I have been deemed worthless one day, how can I be valued the next, except by a caprice alike discreditable to the one who shows it, and the one to whom it is shown."

Julius next wrote to the Government of Florence, using the conciliatory words: "We know the humor of men like Michael Angelo. If he will return, we promise that none shall offend him or interfere with him, and he shall be reinstated in our apostolic grace." But Michael was inflexible. Again and again the pope wrote, and still this proud and high-spirited man refused to heed him. At last the chief magistrate of Florence became alarmed. He sent for the artist, and said, "You have treated the pope as the king of France himself would not have dared. We cannot bring him to war against the State on your account; therefore you must obey his will." The magistrate promised also, if Michael feared for his personal safety, to send him as ambassador to Rome, in which case his person would be inviolable. At last Michael relented, and met the pope at Bologna. Julius glanced at him with displeasure, and did not for some time deign to speak. At last he said, "Instead of

your coming to us, you seem to have expected that we should wait upon you." Michael answered with a slight apology for his conduct, which, however, was so haughtily expressed, that the prelate who had introduced him, thought it necessary to observe, "One must needs make allowance for such men, who are ignorant of everything except art."

"Wise and generous too," was the pope's indignant reply to this speech. He turned to the prelate: "Foolish man, it is thou who hast vilified Michael Angelo; I have not. He is a man of genius, and thou an ignorant fellow. Depart from my sight this moment." And the contemner of art was forcibly driven from the room.

WHILE the inspirations of the study and practice of the science of architecture should, and in its purity, nobleness, and truthfulness is calculated to, ennoble and elevate the minds, and purify the acts and life principles of those who in these latter days profess to fill the places, as students, disciples, and representatives of the art sublime, the grand master spirits of past periods, who conceived, delineated, and reared those grand structures which have withstood the ravages of time, the elements, and physical forces and conditions through ages, reaching back through decades of centuries, and which may continue to stand until

"The cloud-capt towers, the gorgeous palaces,
The solemn temples—the great globe itself;—
Yea, all which it inherits shall dissolve,"

Yet in these modern times, the elementary and fundamental principles of true architectural science,—order, harmony, truth, and purity,—are not universal rules controlling and regulating the hearts, practices, and purposes of all those who have found or forced their way into architectural paths.

The profession, high and honorable as it is in character and teachings, is encumbered with much of the smallness and sordidness which finds place in avaricious, ignoble, and unmanly minds, with whom professional dignity and fair dealings, are but subservients and incidents to be utilized in pretenses, for the consummation of unjust and concealed designs.

This manifestation of human weakness or positive baseness is more or less distributed all over Christendom, with more prominent outcroppings in some places than in others. And while in San Francisco there are many in the profession who would disdain to do an unprofessional act, there are also many whose career and practice is unsanctified by a single impulse, or principle inspired, controlled, or regulated by any high or exalted sense of right or honor toward others. Extreme selfishness, one of the very meanest dispositions of the human mind, that which, more than any other, perverts and demoralizes the finer impulses of the heart, and holds in subjection and crushes out from the acts and deeds of common life every tendency toward "doing to others as ye would that others should do

unto you," is the impelling force—the pre-eminent rule of action, which blinds the eyes and stultifies the senses against seeing or recognizing wrong or dishonor in any act or deed which hold out the promise of gain and advantage, be the injustice to others, or the baseness of the act what it may.

It is painful to the better men of the profession that this should be, and is true; yet true it is. And so long as men of inferior qualifications—men who possess no practical or professional abilities in any reasonably fair degree, their success being altogether the result of brazen cheeks and tongues, never so well in time as when ringing out false pretenses for themselves and as false insinuations in regard to others, "the latches of whose shoes they are not worthy to unlase"—meet with favor, and are accepted by owners as—as what? Men of ability, worthy of confidence and trust? No; these are but presumptive considerations, entertained only, if at all, as among the possible things; while the controlling and influencing factor is found in the impossible-to-b-honest price, at which "professional" services are offered; which, followed up by the shrewd manipulation of words and expressions—sometimes cunningly devised, and at other times so bunglingly presented that any one of fair intelligence, not blinded by the delusion of cheapness, would be able to discern and penetrate the deception.

It is not an agreeable performance of duty to make these assertions, but it is far less pleasant to be forced almost daily to become acquainted with facts justifying all and more than the language used expresses; relieved only by the other fact, that the profession in its purity of principle, purposes and honest practices is beautiful and to be admired, and that there are many worthy architects in all cities who prefer the enjoyment of profits honestly acquired to the accumulation of greater wealth by means not in harmony with the rules of strict integrity.

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Public Laundries and Baths.

THE establishment of public laundries and baths for the accommodation of the poor is an important means of promoting the public health, and, therefore, deserved to be encouraged, if not supported by the local Government. The housing of the poor is not the serious question here that it is in most European cities. Comfortable homes are provided in great numbers, which have the necessary conveniences for cleanliness and domestic work, but they are not within the reach of large numbers of the population, who have to content themselves with accommodations of the most inferior kind. One or two rooms must suffice for a family. The washing of clothes, cooking, and all other domestic work is performed in the apartments used for living and sleeping. Under these circumstances, home comforts are banished, and health—the main dependence—is jeopardized. For such people, the public laundry and bath would be a great boon. The disagreeable operations of washing and drying clothes could be transferred from the dwelling and sleeping apartments to an establishment fitted up with every convenience to facilitate the work, to which the wife could have access a certain number of hours, upon the payment of a small fee. The moral effect of extending such a privilege to the poor would be very great.

The public bath system admits of a still wider field of application. Wherever a swimming-bath has been established, its extensive patronage proves the need of such accommodations. Swimming-baths should be established not only as promoters of cleanliness, but as excellent means of healthy exercise. It would be well if these aids to health could be continued the entire year, but when this is impracticable they should be substituted by private baths, which should be placed within the reach of the poor by charging only a small fee. The Badeanstalt, established this summer in Cologne, one of the most complete and largest on the continent of Europe, is an illustration in point. It contains a workman's swimming-bath, the charge for a bath being not over three cents. The supply of water is continuous. Men following dirty employment are compelled to perform a preliminary ablution with soap.

The public baths in Germany are probably more elaborate and complete than anywhere else. In all the principal towns these conveniences have been opened or are in course of erection. The same may be said of England. Public baths are now being built in Dublin at a cost of \$25,000. France is not behind her neighbors in providing for the wants of the people in this respect. Swimming-baths are found in towns, large and small, standing on the banks of a river, and their use is in some cases gratuitous, while in others a small charge is made. In our cities the same liberal provision has been made for the wants of the people. It is not needed in the case of persons in comfortable circumstances, as they can af-

ford to have and do have private bath-rooms in their homes. But the poor suffer in their health from being deprived of the advantages of the bath, and for them provision should be liberally made.

The cost of the erection of these establishments need not be great, and that of their maintenance would be trifling compared with the benefits bestowed. The obligation of the municipality to incur such an expense is derived from the duty to use every reasonable means for the promotion of the health of the people. What has already been done in this matter has been very successful, and encourages renewed efforts to extend the system to its widest and most useful application.

What Constitutes Good Mortar.

MACHINISTS and engineers often have occasion to use mortar, and will value the appended information: Good mortar is a solid silicate of lime, that is, the lime unites with silica or sand to form a silicate of lime. In ancient days those who had some conception of the way the two things united superintended their mixing; but now-a-days anybody is supposed to know how to make mortar, while nobody knows much about it. Dry lime and dry sand laid together or mixed and kept dry for a thousand years would not unite to form silicate of lime any more than acetic acid and carbonate of soda dry in a bottle would effervesce. To make silicate of lime just as good as was made by the Romans, all that is necessary is to proceed intelligently. Procure good caustic, i.e., fresh-burned lime, and if you find it all powder, i.e., air-slaked, don't use it; use only clear lumps. Slake this (if possible in a covered vessel), using only enough water to cause the lime to form a powder. To this while hot add clean sand, not dirt and loam called sand, but sand—and with the sand add enough water to form a paste. Then let it lie where it will not become dry by evaporation—in a cellar, so much the better, for as soon as you have mixed the sand and lime as above, they begin to react one on the other, and if not stopped by being deprived of moisture will go on reacting until silicate of lime (as hard as any silicate of lime ever was) is formed. But if you take this so-called mortar as soon as made and lay bricks with it, unless the bricks are thoroughly wet, you stop the formation of silicate of lime and might as well lay your bricks in mud. Lime and sand, after being mixed, might lie two years with advantage, and for certain uses, such as boiler setting, or where the whole structure of brick and mortar is to be dried, the mortar ought to be mixed for one year before use, and two would be better; but for house building, if the bricks are so wetted as not to rob the mortar of its moisture as soon as used, mortar that has been mixed a month will form good solid silicate of lime among the bricks it is laid with in ten years, and will be still harder in a hundred years. The practice of mixing mortar in the streets and using

it at once is as foolish as it is ignorant, and would be no improvement. Silicate of lime is made only by the slow action of caustic lime and sand, one on the other—under the influence of moisture. Dry they will never unite, and mixing mortar as now mixed and using it at once, so as to dry it out and stop the formation that the mixing induced, is wrong.—*The Builder and Wood-Worker.*

In the Style of Queen Anne.

LET me offer a few reflections on the mania for Queen Anne houses that is now rife, and which I venture to pronounce a failure, and which, with more certainty, will be decreed a failure a generation hence. The thing is all wrong and on wrong principles. The Queen Anne architects indulged in no such ridiculous, fantastic freaks as we see now exhibited, and simply because such was entirely opposed to the nature and character of brick. Brick is a simple, honest, plain material, with a good color and hard, smooth surface—that is all. Whatever style can display these qualities best is the Queen Anne style and no other. The result of the modern caprices will be seen ten or twelve years hence, when certainly decay will have disintegrated or destroyed the whole, or when the owner's heart will have sickened of the frequent repairs and restorations. The old Queen Anne houses produced effect by the beautiful color and surface, the bricks being laid almost touching, with the thinnest wash of mortar between. The result is that no rain or damp ever gets between. The modern system of building is opposed to this, thick layers of mortar being interposed with the certain result that all the elaborate gables, etc., soon begin to separate. Bricks put together in elaborate forms have no strength, no more than stones laid on earth, but displayed in surface it becomes as firm and smooth as a billiard-table. Even moldings should be raised in the faintest degree, and the less they are the richer the effect. There is an old house out at Clapton, a "seminary for young ladies," that for design, simplicity, and pure brickwork, mixed with stone and design of outline, puts to shame all the brick phantasmas that are now covering the city. Looking at the pretentious masses that cover the new settlement of Cadogan Square or line the Embankment, one does not feel at all drawn back to the days of Queen Anne. There is a coarse, raw treatment in their embroidery, to which the brick lends itself but reluctantly. The material is too rude for such fine work. There is another fad in house adornment, which, it may be said, has run its course. This was the daubing over houses "liver-red," green, blue, etc. These efforts looked daring enough at first, but presently, as the dirt accumulated, they turned all kinds of horrid tints, and the house looked dirtier and shabbier than ever.—*Tinsley's Magazine.*

OCTOBER, NOVEMBER, and DECEMBER numbers of this year will be given free to all new subscribers for 1885.

Strength and Wear of Building Materials.

THE question of the rapid crumbling and disintegration of mineral building materials, is one that architects and builders throughout the entire country should be interested in.

A sample of material may respond favorably to all the known tests to determine its strength and elasticity, and still show evidence of short life when placed in the walls or foundations of a building. Especially is this true as regards stone. To begin with, when we estimate the value of any variety of stone for any specific purpose, we must keep in mind the circumstances and conditions around and under which it is to rest, and do service:—

1st. In the average climate of America it will have to bear in the direct rays of a July sun, a heat of 120° Fahrenheit on the outside, while inside it may not be more than 70° Fahrenheit.

2d. In winter it may be exposed to an exterior temperature of 20° Fahrenheit below zero, and an interior heat of 70° Fahrenheit above zero, or 90° of difference; and though mathematics are of no aid in enabling us to determine and point out that fine point where these opposite forces of contraction and expansion meet, that we may partially provide for it in the upward and downward pressure, it amounts to the most gigantic force known, which has an effect in destroying the molecular cohesion of the particles constituting the stone. It must give to one side or the other under the enormous force applied on that side, and reversed on the other, besides the great pressure to which it is constantly subjected by the stone above, and the resistance afforded by every stone from the very foundation until it is reached.

3d. The great majority of building-stones show upon analysis, traces of calcium, terrous oxides, etc. The larger number of buildings constructed of stone are located in cities and towns where coal is used for fuel, the fumes of which coming in contact with an atmosphere already impregnated with other elements, form those acids and gases, which uniting with the elements of the stone cause disastrous results.

It is no wonder, then, that immense walls, apparently compact and homogeneous, open in cracks, split off in layers, and burst in pieces.

4th. A stone newly taken from the quarry loses in weight by exposure by the evaporation of its natural moisture; this leaves all these minute interstices or pores invitingly open to rains and atmospheric moisture; hence when the frosts of our northern winters come, it is no wonder so many walls are out of line, and unsafe without repairing or renewal. This force of frost during the past winter, even in the South, puts to shame the power of a Corliss engine or hydraulic press.

The dilapidation produced by alternate freezing and thawing; the changes from protracted droughts to incessant moisture; from excessive heat to cold; the difference of temperature at the same moment between the opposite sides of the same block, the tendency to split off,

and the lamination of unequal densities, and many more, are all grave obstructions to the use of building stone in this climate that would sink into comparative insignificance in other countries.

That many buildings become unsafe, and innocent persons get the blame, there is not the least doubt. A magnificent structure falls with a crash, the builder is berated, the architect censured, when if the truth was known, in many instances the silent, subtle influences mentioned above had been at work, and no one was to blame.

Before proceeding farther with our discussion, we will consider the condition of material under pressure, and subjected to tension.

If we take a piece of wood, and carefully estimate the force required to tear it asunder, we will notice that lengthwise of the grain requires the greatest force. If we subject it to pressure across the grain, for every degree we bend it we find this resistance increased 11.617 per cent. (an average of thirteen varieties of wood tested), increasing in direct ratio until sufficiently bent to displace its molecules, when, of course, its strength decreases rapidly. Timbers, then, subjected to a certain tension in a building will outwear those not subjected to it. Again, a timber bearing a certain number of tons of weight for a certain length of time, will bear a much heavier weight without being unsafe, than if the timber having lain idle, as it were, should afterwards be loaded. This increase of strength is quite striking, as may be proved by the following experiment:—

Three pieces of some brittle wood, carefully made of equal size, are placed side by side, with the ends resting on some firm base, and on one is placed 100 grams, and on another 500 grams, and they are then left for a week or more in a warm, dry situation. The one bearing the greatest weight will have bent the most, and will bear more added weight than the more lightly loaded piece; while the same weight placed on number three will break it. This proves conclusively that a certain weight placed on a timber, renders it capable of bearing one still greater subsequently. A timber with all it will bear without displacement, will actually bear more additional weight subsequently, and keep on increasing in both its wrenching and tensile strength than if it be laden one-half as heavily at the outset.

Viewed with the microscope we find that the instant wood is bent out of the true the fibres become closer at the bend or angle. Now if the pressure is continued just far enough to bring these in actual contact without force sufficient to mar or bruise them, they adapt themselves to the situation, and are absolutely glued together by the gummy substances liberated by the cells ruptured in the bending.

Furthermore, timbers subjected to pressure will decay less rapidly than when not. A stick of lancewood bent double, and the ends made secure, and the same exposed to the influences of decomposition will show the effects much sooner in those portions not bent, than where the sharp angle appears; moreover, a

stick actually broken in bending will not rot so soon at the break as at some distance from it, and fungous growths rarely appear at the point of bending as soon as elsewhere.

At first sight it would appear that, subjected to constant pressure, wood would undergo the same change as iron, but experience has demonstrated the contrary. In some of the ancient ruins of Europe we notice this fact: that those portions which apparently sustained the greatest pressure, such as roof-trusses, gables, etc., were in a much better state of preservation than the joists which were merely supports for nailing, etc. All who have visited "Duckey Hall" in Lincolnshire, will recall, perhaps, in the east wing of those massive ruins, some bits of curved cornice apparently in an excellent state of preservation, while all around has long shown evidence of advanced decay. For a long time it was supposed that this round coping was of metal, but when a few years ago this wing or tower blew down it was found to be a species of deal, which had been forcibly bent and secured while green,—probably, at the time of the building of this castle, little if anything was known of steaming,—and when these boards were released from the pressure to which they had been submitted for centuries, they began to take their original or straight form; of course, but partially; nevertheless, the ends sprang apart nearly an inch when liberated, showing conclusively, that with all the influences which had been at work destroying the adjacent woodwork, these boards subjected to this pressure had not lost their power of attempting to return to their original shape.—*J. F. E., in The American Architect.*

Drilling Holes in Glass.

FOR drilling holes in glass, a common steel drill, well made and well tempered, is the best tool. The steel should be forged at a low temperature, so as to be sure not to burn it, and then tempered as hard as possible in a bath of salt water that has been well boiled. Such a drill will go through glass very rapidly if kept well moistened with turpentine in which some camphor has been dissolved. Diluted sulphuric acid is equally good, if not better. It is stated that, at Berlin, glass castings for pump-barrels, etc., are drilled, planed and bored, like iron ones, and in the same lathes and machines, by the aid of sulphuric acid. A little practice with these different plans will enable the operator to cut and work glass as easily as brass or iron.

DRYING WOOD IN SAND.—An Eastern contemporary says that small pieces of wood, such as are used by joiners and furniture makers, can be readily and effectually dried by being placed in dry sand, and then heated to 100 degrees. By this process the sand acts in the manner of an absorber of the moisture, as well as a diffuser of the heat, and the effect is uniform and complete.

"ENGINEER full; boiler empty," is the way Western paper accounts for an accident.

More Conundrums.

WE have an invalid in our family, who needs of all things, through the summer months, the free air of heaven. She cannot even climb the stairs to and from her own room in the second story. Can you tell me if it would look badly to have an upper room, detached from the main building, open on all sides, but connected with the house by a bridge or something of the sort? Hanging balconies are very well as far as they go, but I want to get further away from the house, so that we can look out in all directions. I have never seen anything of the kind, but should think it might be done. Yours truly,

To the main question, whether such an elevated external attachment to an invalid's chamber would look bad, we can only say it would depend. We can imagine situations where a magnified marten box standing on posts, a few feet, more or less, from the house, would be an entirely agreeable-looking affair. Probably in most cases it would be best to make some use of the first story as well as of the second, although, if it happened to be where the ground below was needed for a walk, a drive, a flower-bed, or some such purpose, there could be no objection to its standing upon its four bare legs, like any other independent quadruped. Probably the most satisfactory plan for it would be upon one of the southerly corners of the house, say the northeast corner of the balcony, or whatever you call it, contiguous to the southwest corner of the main house, like two black squares on a chess board. This would not seriously interfere with the outlooks from the main windows.

While you are about it, why not make the connecting link a draw-bridge, so that your invalid, after taking possession of the premises, could pitch her pill boxes overboard and snap her fingers at the doctor?

Do they make rooms without sills to the doors? Ours are a great nuisance.

The raised sills, or thresholds, whatever they may be called, meaning the piece of wood laid on the top of the floor underneath doors, may be, and often are, very properly omitted. You are quite right in thinking the high barrier between adjoining rooms a great nuisance. Of course you cannot allow a door to fit as closely to the floor or carpet as it may to the top of the raised threshold, it would not swing freely and when hung upon hinges at one side a door will sag after a time if not supported when shut. The latter fault can be guarded against by fixing a small rest of metal, or hard wood, near the jamb opposite the hinges, which would be no more unsightly than the other door trimmings, and the crack underneath is not a serious defect, unless you are very much afraid of spiders. Sliding doors are usually best hung at the top, avoiding the track on the floor; and thresholds, if used, should not exceed half an inch in thickness.

Would it be practicable to have one side of my sitting-room entirely of glass and so constructed that it could open out in summer like a roof? In that case could I have an outside stone floor level with the floor inside?

The chief objections to building a house on the flap or awning principle, that is, with the entire broad side of one or more rooms hinged at the top, and so made that it could be raised into a position nearly horizontal, would be the expense of the machinery required to move it easily, and the extra labor of building the movable sides in such shape that they would be satisfactory as outside walls when closed, and as roofs when open. Of course it is possible; all things are possible to those who have ingenuity and money. A floor for the outside part, that is, for what would be under this broad side when it was raised up, ought to be of something besides wood, for the sake of durability. Bricks, tiles, or some kind of concrete would answer as well as stone.

We live in the country, away from the region of paved walks. What kind of a walk can I make (not too expensive) all around the house, so we can get a little exercise in the open air without wet feet?

The cheapest, and, on the whole, the most satisfactory walk for the country during the seasons of dew, mud, rain, and snow, is a stout pair of overshoes. A walk of this kind can be taken up and laid down where it will do the most good, with the utmost speed and facility. It can be kept clean and dry with very little trouble, and is not expensive. Those who are accustomed to use it enjoy a freedom of movement and an immunity from the perils of locomotion that are unknown to pedestrians whose comfort depends on the condition of the sidewalks.

To speak seriously, it is amazing that country and village people pay so little regard to the walks in the streets and about their houses. We suppose our correspondent has in mind what might be called a terrace or promenade immediately around the house, a sort of "ghost's walk," from which the snow could easily be swept, and from which the water would run off quickly. A concrete or asphalt paving, like that used for sidewalks, would be the cleanest and most appropriate material for such a purpose, and probably the cheapest. —*The Builder.*

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Nineteenth, nr. Stevenson. One-story frame. O. W. F. Fuller. A. W. H. Bayless. C. W. Langstaff. \$2,500.

Nineteenth, nr. Stevenson. One-story frame. O. Mr. Guld. A. W. H. Bayless. C. W. Langstaff. \$2,500.

Twentieth, nr. Valencia. Two-story frame. O. J. A. Spanner. Day's work. \$3,200.

Page, nr. Octavia. Two-story frame. O. J. McLoughlin. A. J. J. Clark. C. J. Carbery. \$4,000.

Fifth, cor. Shipley. Alterations. O. Hibernia Bank. A. Huene & Everett. C. F. Buckley. \$2,700.

Market, opposite Seventh. Three-story brick. O. A. Kohler. A. J. Gosling. C. J. W. Duncan. \$14,000.

Howard, nr. Seventeenth. Alterations. O. H. Horstmann. A. H. Gellius. C. H. Meyn. \$1,000.

Pacific Avenue, near Steiner. One-story frame. O. L. Holtz. A. H. Gellius. C. H. Meyn. \$2,500.

Howard, nr. Fourth. Two-story frame. O. E. M. & F. H. Jones. Day's work. \$9,000.

Jackson, nr. Davis. Three-story brick. O. Mrs. Kirby. C. J. Marquis. C. Hatfield & McRae. \$10,000.

California, nr. Buchanan. Two-story frame. O. Dr. Bowie. A. W. P. Moore. C. A. Jackson. \$1,000.

Castro, corner Fifteenth. Two-story frame. O. G. Krutmeier. A. Townsend & Wyneken. C. T. Somerset. \$6,000.

Filbert, nr. Mason. Alterations. O. Mrs. M. Boland. A. Townsend & Wyneken. C. Brown & Bridget. \$700.

Filbert, nr. Mason. Two-story frame. O. Miss Patterson. A. Townsend & Wyneken. C. Rines. \$1,500.

Howard, near Fifteenth. Alterations. O. Mr. Crance. A. Townsend & Wyneken. C. J. Lynch. \$1,200.

Bryant, nr. Eighth. Alterations. O. O. Casey. Day's work. \$900.

Oak, cor. Webster. Two-story frame. O. J. Carroll. A. J. J. Clark. C. J. Adams. \$7,000.

Geary, nr. Gough. Alterations. O. C. Offer. A. G. E. Voelkel. C. J. H. Thom Wohrden. \$1,400.

Harrison, nr. Eighteenth. Two-story frame. O. I. Hoeggins. A. G. E. Voelkel. C. W. Pluns. \$2,200.

Buchanan, nr. California. Two-story frame. O. F. G. Atherton. A. C. Day. C. Ingerson & Gore. \$5,000.

Eddy, nr. Larkin. Three two-story frames. O. H. T. Crane. A. McDougall & Son. C. Terrill. \$20,000.

Fulton, nr. Fillmore. Two two-story frames. O. S. H. Brodie. A. McDougall & Son. C. Leonard & Haskell. \$12,000.

Golden Gate Avenue, cor. Webster. Six two-story frames. O. S. H. Brodie. A. McDougall & Son. C. Leonard & Haskell. \$41,000.

Polk, nr. Grove. Two-story frame. O. Mrs. D. Lydon. A. T. J. Welsh. C. Anderson Bros. \$8,000.

Golden Gate Avenue, near Webster. Two-story frame. O. J. A. Zoltyer. A. Schmidt & Havens. C. Gray & Stover. \$5,500.

Washington, nr. Devisadero. Two-story frame. O. Mrs. C. J. Henning. A. Schmidt & Havens. C. R. F. Traxler. \$3,500.

Grove, nr. Buchanan. Two two-story frames. C. G. W. Young. A. Schmidt & Havens. C. J. A. Hayden. \$11,000.

Howard, cor. Tenth. Two two-story frames. O. Mr. Golder. A. Schmidt & Havens. C. J. A. Hayden. \$7,500.

DuPont, near Broadway. Two-story frame. O. Mrs. Klordon. A. Curtis & Bennett. C. A. Jackson. \$2,000.

Point Lobos Avenue. One-story frame. O. M. Baloun. A. S. and J. C. Newsom. C. J. Dougherty. \$3,000.

Leavenworth, nr. Geary. Alterations. O. R. Roemer. A. C. Lutzgens. C. J. H. McInnes. \$600.

Sutter, nr. Broderick. Two-story frame. O. J. C. Mayers. A. T. J. Welsh. C. J. Drury. \$3,500.

Jones, nr. Broadway. Two-story frame. O. Mr. Foley. A. T. J. Welsh. C. A. M. Nelson. \$2,700.

Fell, nr. Octavia. Two-story frame. O. Judge Cooney. A. T. J. Welsh. C. P. J. Owens. \$7,000.

Gough, nr. Grove. Alterations. O. T. Adams. A. T. J. Welsh. C. W. Smith. \$1,400.

Welsh, cor. Zoe. One-story frame. O. Mr. Riley. A. T. J. Welsh. C. R. Doyle. \$1,400.

Valencia, cor. Eighteenth. Two-story frame. O. W. McGreevy. A. T. J. Welsh. C. Blake. \$7,000.

Devisadero, corner Pine. Two-story frame. O. Adam. A. J. C. Pelton. C. S. M. Hills. \$1,500.

Steiner, nr. California. Additions. O. Mr. McKewen. C. W. Burke. \$1,500.

Polk, nr. Bush. Two-story and basement frame. O. and B. J. Gale. \$8,000.

Austin, No. 106. Alterations. O. M. Davis. A. Wolfe & Son. C. Crisman. \$1,000.

Cemetery Avenue, near Bush. One-story frame. O. Mr. Matthews. C. Hatfield & McRae. \$2,500.

Bush, nr. Baker. One-story and basement frame. O. and B. D. F. McGraw. \$2,300.

California, nr. Baker. Two two-story frames. O. Mr. Zackerison. C. W. F. Muller. \$6,000.

Devisadero, near Sutter. Additions. O. S. P. Quint. Day's work. \$2,000.

MISCELLANEOUS.

Oakland—Highland Park. One-story frame. O. E. C. Servino; C. Veitch & Knowles; \$2,000. Two-story frame. O. M. Goldberg; A. C. Mau; C. R. Smilie; \$15,000. Two-story frame. O. Dr. Heinemann; A. C. Mau; C. W. Dahl; \$4,500. Winne; \$4,000. Frederick, nr. Telegraph ave. One-story and basement frame. O. F. Delger; A. C. Mau; day's work; \$3,500. Fourth, nr. Broadway. One-story frame. O. W. Sagehorn; A. C. Mau; C. A. Hers; \$2,000. Sixth, nr. Jefferson. Two-story frame. O. H. Gallager; A. T. D. Newsom; C. J. Coveny; \$4,000. Oakland Gas Works. Electric Building. C. Veitch & Knowles; \$2,500. Market, nr. Seventh. One-story frame. O. Porter; A. S. and J. C. Newsom; \$2,600.

East Oakland—One-story frame. O. G. Fisher; A. T. D. Newsom; C. Hatcher; \$2,300. Sixth ave, cor. Eleventh. Additions. O. Mr. King; A. S. and J. C. Newsom; day's work; \$4,000. Sixth ave, cor. Fourteenth. Two-story frame. C. J. Evans; A. S. and J. C. Newsom; day's work; \$5,000.

Alameda—One-story frame. O. Mr. Andrews; A. S. and J. C. Newsom; \$2,200.

Sacramento—Ventilating and plumbing Capital Building. A. Curtis & Bennett; C. Muir & Smith; \$9,000.

Berkeley—Two one-story frames. O. Mrs. Bossee; C. Veitch & Knowles; \$3,000. Two-story frame. O. H. McAvoy; A. T. D. Newsom; C. Higgins & Son; \$2,500.

San Jose—Stockton Ave. Two-story frame. O. E. C. Smith; A. J. O. McKee; C. A. J. Mellwain; \$4,000. Fifth, One-story frame. O. L. F. Curtis; A. J. O. McKee; C. R. Summers; \$2,000.

Woodland—Lincoln Ave. Two-story frame. O. J. O. Maxwell; A. and C. W. H. Carson; \$3,600. Second. One-story frame. O. S. Willet; C. Glenn & White; \$1,500. Second. One-story frame. O. John Miller; day's work; \$1,500. South Fifth. One-story frame. O. Wm. M. Lee; C. B. B. Clay; C. S. Audlum; \$1,100. Main. One-story brick addition. O. Lewis & Hollingsworth; C. D. S. Scott; \$1,658. One-story frame. O. Jason Watkins; C. A. Stamp; \$1,000.

Yolo—Addition and improvements. O. Hopkin Bros.; C. W. H. Winnie; \$1,000.

Madison—Two-story frame. O. Ed. Lawson; C. R. B. Nisson; \$2,500. Two-story frame. O. E. R. Howard; C. R. B. Nisson; \$3,000.

Black's Station—Dwelling, carriage house, and barns. O. Charles E. Byrns; day's work; \$5,500.

BLUM, EPPSTEIN & MARSH.

MANUFACTURERS OF

Inlaid Wood Flooring
WOODEN MANTLES,
Hard Wood Interiors.

Office and Parlors 126 Kearny St., 2nd Floor.

FACTORY 209-227 FELL ST.,

SAN FRANCISCO, - - CAL.

The California Architect and Building News.

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and to matters and trades belonging to the

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been received. Unless requested we do not send re-

ceipts.

RETROSPECT FOR 1884.

The Most Successful Building Period on Record—An Average of 94 New Buildings Per Month.

TRULY the year now in its last days may be said to have been the mechanics' harvest. At no time during the twelve months was there a lack of work for good workmen in any branch of the mechanical trades. Masons have been especially busy, owing to the number of large buildings that have been erected, or are now in process of construction. But even the great number of skilled men on the new brick edifices now adorning our principal streets, is not equal to the small army required to substitute

BRICK FOR WOODEN FOUNDATIONS.

And for the necessary building of chimneys, bulkheads, nogging, etc., in the frame structures.

The substitution of brick for wooden foundations, in many of the buildings erected by the "Real Estate Associates," has now come to be a necessity. The old wooden mudsills are sadly rotting away, proving that redwood is not imperishable. This is particularly noticeable in the Mission, several of the buildings erected by the above-named Association having lately had brick substituted for wood. Several more will soon undergo the same process. Owners now are wisely concluding to stand the extra expense of brick when they first build, and not wait till wood is completely rotted out before they make the change.

CARPENTERS.

Although there has been an unusual demand for carpenters in the city, still there has been a bountiful supply of men, such as they are. The skilled mechanics have all been busy, and have put in nearly full time.

WORK IN THE COUNTRY

Has been very light and scattering, owing to the generally low prices received by the farmers for their material. In 1882

NUMEROUS FIRES IN COUNTRY TOWNS

Gave the opportunity to hundreds of men to secure rebuilding contracts. The year just ending has been remarkably free from large conflagrations, and we do not call to mind a single town that has suffered enough, in this regard, to cause a hegira among the woodworkers.

WAGES FIRM.

All through the year wages remained firm, and steadier remunerative prices have been secured by mechanics than for any similar period, even the army of piece-workers not being able to reduce the wages of the regular hands.

LATHERS AND PLASTERERS.

Artisans in the above line have been very busy during the entire year—in fact, so much so that at times work has been delayed on account of a scarcity of help.

SUMMARY.

We present below a summary of building operations for the year. More than usual interest attaches to the same, as it is by considerable, the largest showing for any year of which we have a record.

	Frame Buildings.		Brick Buildings.		Repairs and Alterations.		Total No. of Bld'gs for Mo.	Total Cost for Month.
	No.	Cost.	No.	Cost.	No.	Cost.		
January	30	\$176,600	1	\$ 5,400	14	\$ 44,115	45	\$226,115
February	36	112,650	3	179,700	5	37,200	44	329,550
March	98	291,150	3	128,500	8	39,000	109	458,650
April	100	535,655	3	297,000	18	69,900	121	902,555
May	79	449,660			19	105,800	98	555,460
June	92	433,700	1	60,000	19	68,200	112	561,900
July	69	340,200	4	253,545	14	40,164	87	633,909
August	75	321,500	4	336,500	11	34,800	90	692,800
September	83	366,456	2	210,000	19	50,100	104	626,556
October	69	340,890	2	42,000	25	77,360	96	460,250
November	81	365,197	2	24,000	20	29,100	103	418,297
December	93	379,543			25	58,222	118	437,765
Total	905	4,112,201	25	1,536,645	197	553,961	1,127	6,302,807

It will be noticed that building in the latter half of the year is much greater than similar periods in any previous record.

The statement for December is a remarkable one, as it shows there have been commenced of improvements.

113 BUILDINGS OF THE VALUE OF \$437,765.

For the sake of comparison we give the figures for each year from 1880.

YEAR.	BUILDINGS.	VALUE.
1880.....	397.....	\$1,754,435
1881.....	533.....	3,790,732
1882.....	785.....	3,896,212
1883.....	803.....	5,261,689
1884.....	1127.....	6,302,857

We have given no credit in the above for money expended on the Flood mansion. The material for that building is being obtained in the East, and, of course, its value being paid there, cannot find a place in our estimates. We enter our protest against the expenditure of money East for material, the equal, if not superior article, being obtainable on this coast; especially do we regret, when we consider that the money for which the building is being erected was made from the working people of this coast, and they should have, at least, the chance to recover, by steady work, the money thrown away by assessments paid, to find its way by roundabout methods into the millionaire's pocket. In more than one instance have our Nob Hillites sent thousands of dollars East for work and materials which could have been duplicated on this coast, both in design and workmanship, and just for the simple reason that it would seem higher-toned to say this or that came from Berlin, Paris, or Kamschatka.

NOT A BUILDING BOOM.

In the general acceptance of that phrase, should the transactions of this year be classed. A reasonably busy activity has continued throughout the entire year, and in not a single instance have

ARCHITECTS BEEN CROWDED

With orders for work. True, most of those engaged in that profession have had a reasonable amount of work, but it has been obtained so gradually and steadily that at no time, without a single exception, have architects delayed their clients on account of rush of orders.

DRAUGHTSMEN.

There have lately come to this city quite a number of young men who are desirous of obtaining employment as draughtsmen. Their qualifications consist of about the following: Ability to trace drawings if not too difficult; can give directions to the head of the office how things ought to be done; able to copy specifications if the hard words are explained to them, and sundry other difficult acquirements. To all such we would say, California is not the place for your genius to show its brightness; keep away, for our people are not able to appreciate your talents.

FAITHFUL, CAPABLE MEN

Are the only kind wanted here, and if a few were to arrive of the calibre to meet the require-

ments of our architects, no doubt they would obtain steady employment.

THANKS.

We sincerely tender our thanks to all those who have so kindly assisted us in the past year, furnishing us information in regard to matters of interest to our readers.

A Success with Which We Are Pleased.

WITH this, the closing number of the sixth volume of this Journal, it is fitting and proper that we should again express our sincere acknowledgments of the manifold favors and encouragements received, and return heartfelt thanks to our friends and patrons for the liberal support extended in both subscription and advertising patronage, and to our numerous contemporaries who have manifested toward this Journal such marked appreciation of our efforts to make it worthy the high esteem in which it is held among the hundreds of publications of like class, import, and character.

It cannot be otherwise than acknowledged that its columns have not been made to subservise, in the slightest degree, the personal, professional interests of its proprietors. They have in no instance availed themselves of the privileges entirely under their control, of using its columns for their special benefit, but have freely, and with honest intent and pleasure, and without reserve, published from time to time, facts and statements of interest to others, which, if made in reference to themselves, might have justified the charge of seeking to further ends and purposes not entirely in harmony with honorable and unselfish journalism. And as in the past, so in the future, its columns will be free from all selfish interests, beyond the legitimate profits of its publication, and the proud satisfaction of having it recognized as among the very best journals of its kind published in the United States. That it has reached this pleasing attitude in journalism, is fully demonstrated by the fact that our exchange list now numbers over one hundred and fifty, among which are all the well known and most influential publications of the country, and others from London and other parts of the world.

In looking back to the time when alone, and under tremendous disadvantages and discouragements, the senior editor embarked in the undertaking, its existence seems almost chimerical. It is questionable whether, under like circumstances, he or any other living man would undertake to repeat the venture. Without a single encouraging condition, with all—mechanical, financial, commercial, and other interests prostrated, the terrible gloom that spread over the entire State through the heartless and reckless political agitations of the period prevailing in its severest form, a majority of the working classes scarcely able to procure the humblest necessities of life, all combined to render the attempt almost a fete of daring, and nothing short of indomitable perseverance and obstinate fighting against untoward circumstances, gave it birth and vi-

talities. But the worst has long since been past, and we have our sweet satisfaction in the grand result which we enjoy at this hour in seeing it advance to its present prosperous condition, and recognized in so many ways and from so many sources as an indispensable publication upon the Pacific Coast. In all this, since the earlier days of its existence, the junior editor has performed his part, and in all possible ways, to the very best of his ability and judgment, has allowed no opportunities of improvement to pass which could be secured by earnest effort and attention.

Tracing up from the commencement to the present time, a very marked difference is noticeable in the issues of 1879 and 1880, and those of the volume ending with the present number. We hope that the numbers of the seventh and all succeeding volumes will exhibit as marked a difference in the upward direction; at any rate, unceasing efforts will be made with strong hopes of success, and if our friends generally, and our brethren of the architectural profession could only be induced to put into practice some of the hundreds of promises made to us, to furnish pertinent and interesting articles upon some of the thousands of topics at their command, in architectural, constructive, sanitary, mechanical, inventive, and kindred sciences, they would thereby greatly benefit themselves and others, as well as assist in furnishing our readers with the rich fruits of many minds,—subjects analyzed and dressed up in form, theory and fact, according to views entertained, some of which may prove to be of inestimable value in ways at present not fully comprehended. Those who "cast bread upon the waters" are often made glad by its appearance "after many days."

San Francisco Chapter, American Institute of Architects.

THE regular monthly meeting of the Chapter was held Friday evening, Dec. 5th. President A. Laver in the chair.

The committee on incorporating the Chapter reported progress. The articles have been filed, and but a few minor details are to be taken to have the Chapter in working order as an incorporated body.

Emil John was proposed for membership as an Associate. Referred to Messrs. Sanders, Pissis, and Moore.

The President, assisted by Mr. Gash, then presented prizes to the pupils to whom they were awarded, as follows:—

Max. G. Bugbee received a fine box of drawing instruments as first prize in free hand drawing.

Louis Stone received Ferguson's History of Architecture as first prize in architecture.

Robt. G. Frise received a similar prize to last mentioned as first prize in mathematics.

Wm. Lee and E. A. Williams each received a copy of Rosengarten's Hand Book of Architectural Styles, as special prizes for general proficiency and progress in the several branches.

A letter was received by Mr. Laver from the Royal Institute of British Architects, request-

ing the Chapter to indorse their movement in regard to holding an exhibition of American Arts and Sciences, to be held in London in 1886. The following committee were appointed to take action upon the same: Messrs. Laver, Gash, and Wright.

The teachers of the various classes were tendered a vote of thanks for their faithful services during the past year to the pupils under their charge.

OUR ILLUSTRATIONS.

A Comfortable \$5,000 Country Home—The New Panorama Building—Rustic Cottages.

ON pages 213, 214, 215 we present the elevation and plans of a comfortable country residence, costing about \$5,000.

It will be noticed that every room on the first floor is accessible from the hall. This is an especial feature in country houses. The front hall can easily be converted into a waiting room by having curtains hung in the archway at the foot of the stairs. As a very general rule, Californians do not prefer the hall to be made into a reception room.

The sitting and dining-rooms are convenient, and with the aid of the sliding doors can be practically made into one large room. The former is connected with the back porch by the door shown, and is thus easily accessible to members of the family without going through the main hall. Abundance of closet room is provided.

The second story plan will recommend itself for the comforts shown. Attention is called to the excellent arrangement of the water-closet, being easily accessible both from bath-room and hall.

The design shown on page 217, is that of the new Panorama Building, lately erected in this city, A. Pissis being the architect.

The other designs shown are for rustic cottages for a suburban town.

Our Exchanges.

WE have made arrangements with the Editors of the following Journals, by which we are enabled to offer quite a reduction to those subscribing for any one of them in connection with this Journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS Terms, \$2.00 per annum.

With *American Architect* (\$6.00), \$7.00 per annum.

With *Builder and Wood Worker* (\$1.00), \$2.50 per annum.

With *Inland Architect and Builder* (\$1.75), \$3.25 per annum.

With *American Artisan* (\$1.00), \$2.50 per annum.

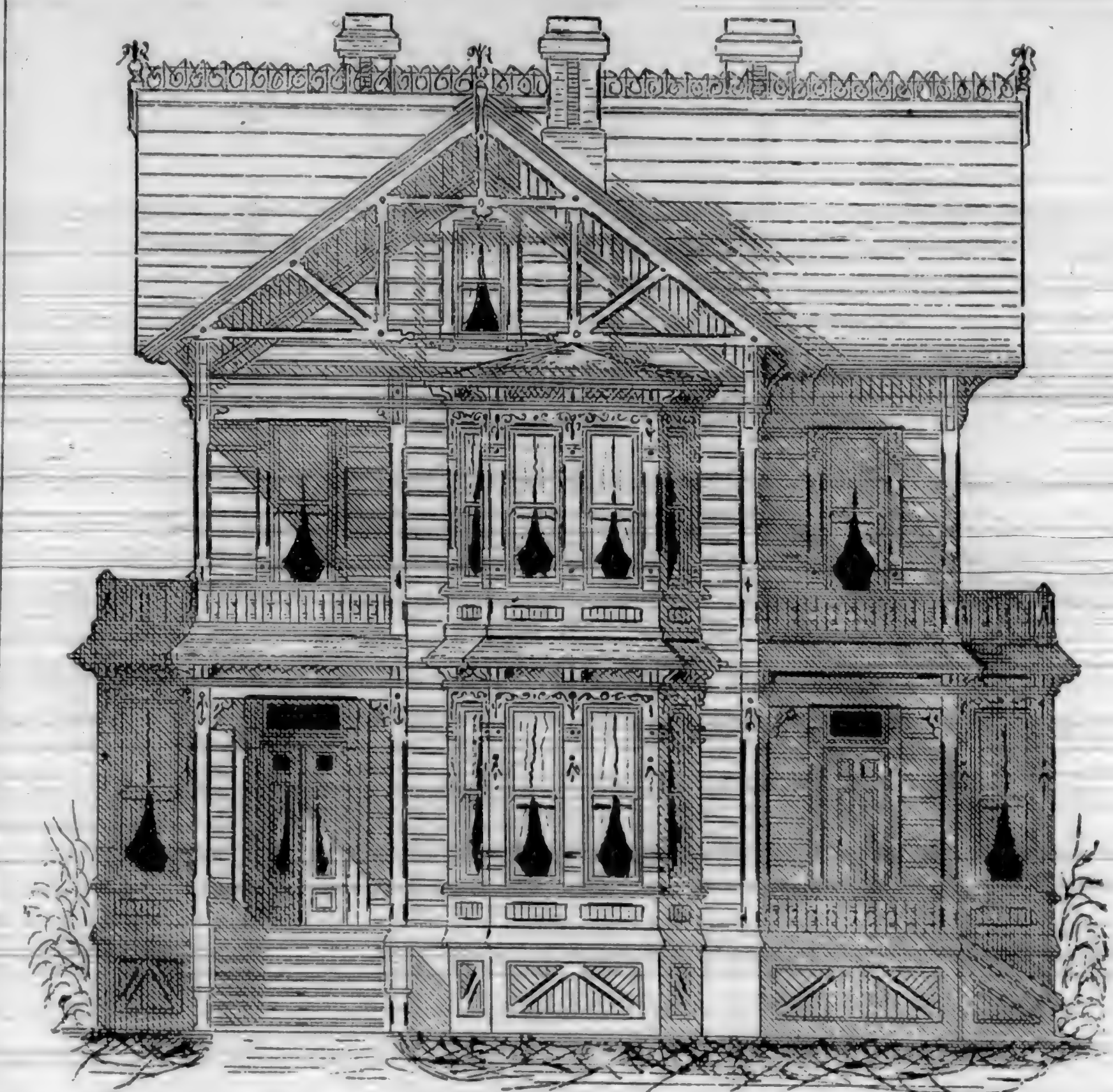
With *Building* (\$1.00), \$2.50 per annum.

With *North Western Lumberman* (\$4.00), \$5.00 per annum.

With *Scientific American* (\$3.20), \$4.50 per annum.

With *Leffels' Mechanical News* (\$1.00), \$2.50 per annum.

With *Decorator and Furnisher* (\$4.00), \$5.00 per annum.



FRONT ELEVATION OF \$5,000 COUNTRY DWELLING.

With *American Machinist* (\$2.50), \$4.00 per annum.

With *The Wood Worker* (\$1.00), \$2.50 per annum.

With *The Builder* (\$2.00), \$3.50 per annum.

With *Ha's Journal of Health* (\$1.00), \$2.50 per annum.

With *Cincinnati Building Review* (\$1.00), \$2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Chapter Incorporation.

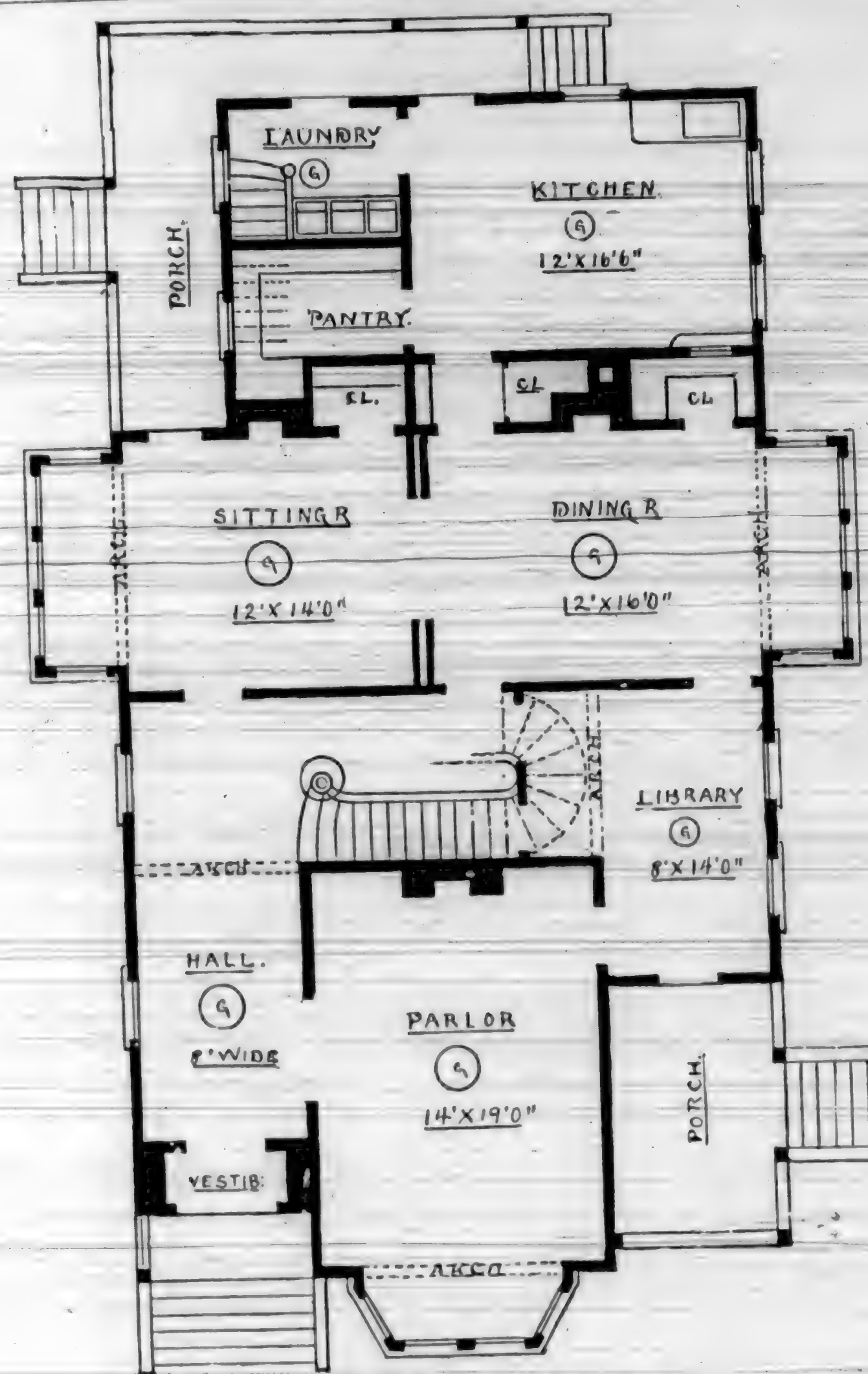
SINCE our last issue, San Francisco Chapter of the American Institute of Architects has been duly incorporated under the statute of California, in such cases made and provided, with James E. Wolfe, Wm. Curlett, W. J. Mathews, G. H. Sanders, and T. J. Welsh as the incorporating trustees. The incorporation is to exist for fifty years, a period which suggests the thought, Will any of the present, practicing members of the Chapter, or any of the practicing members of the profession, now in San Francisco, not in membership, be upon this mortal stage of action at the expiration of the Chapter period? Some of the younger students and apprentice members, in all reasonable probability, will be, and it will certainly be a source of pleasure to those advanced to the

silvery age of whitened locks—some of whom, in all human probability, will be called to pass from earthly scenes and pursuits, to the realities, whatever they may be, beyond the reach of human conception, ere even one of the five decades of incorporation shall have expired—to see the young men in the profession fostering, by their earnest interest and devotion, the institution now fixed, by the present active membership, upon a foundation which provides for its continued prosperity, with reasonable assurance that at the end of fifty years it will have grown in interest, and developed into an organization of great usefulness and influence, doing honor to the memory of those who founded it, and those who may hereafter sustain and enlarge its sphere of usefulness. Its growth, prosperity, and permanency is a matter which demands and justifies the personal interest of every well-wisher of the profession, and we hope the day will soon come when the name of not a single worthy and honorable member, of the profession shall be missed from its roll.

Hammer or Nail—Query.

"WHICH gets the harder lick—a hammer or nail—when the nail is struck with a hammer?" Both alike, except, unfortunately, your finger should happen to share with the nail in its part of the "lick."

Steel Square and its Uses. Price, \$1.00.



FIRST STORY PLAN OF \$5,000 COUNTRY DWELLING.

The Mechanic's Christmas.

SURELY the Christmas now near at hand should be hailed with pleasure by all of our mechanics. The year now almost ended has been one of unusual activity, and those who have been frugal in their habits should have enough on hand to make glad the hearts of the little ones.

Wages have been kept up to the full standard for all desirable help throughout the year, and the immediate future is full of promise. Even with the work now in progress a goodly portion of our laboring population can command steady remunerative wages for a larger part of the time.

We wish one and all of those whose labor has done so much to beautify the city, a hearty and merry Christmas, and many a happy New Year.

A Bar of Square Wrought Iron, Supported at each end, and a load placed in the center, will bear much more weight when placed flat than when placed on one corner. The difference is about as six to five.

Mechanics' Liens.

A BILL for a new mechanics' lien law was drawn up lately by representatives of the various trade unions assembled at the State Bureau of Labor Statistics. It modifies the existing law in this, that it gives laborers a prior claim over material men, where both have filed liens. As the matter now stands, liens on buildings are ranked as follows: First, all persons other than the original contractors and sub-contractors; second, the sub-contractors, and third, the original contractors. The first class consists of mechanics, material men, artisans, architects, and laborers of every class. It is now proposed to eliminate from this class the material men and subordinate their claim to that of the mechanic, artisan, and laborer. The proposition commends itself to justice and appears to be in conformity with sound principles of equity, for it is obvious that the furnisher of bricks and lumber and iron and glass and mortar can better stand a loss than the laborer, whose food depends on his daily earnings.

In actual practice, as all persons who have built houses will testify, the lien law more frequently causes hardship to the man who has a house built than to the builders and mechanics. It is quite a common occurrence for a man who has had a house built by a contractor to find his house lien by some workman whom the contractor has failed to settle with, and this after the owner has fully paid the contractor. In Chicago and Kansas City knavish contractors have made a practice of cheating their men, collecting full pay from the house-owner, and then leaving him to fight it out with the mechanics. No remedy for the evil was ever discovered.—*Chronicle*.

Decrease of Lumber Imports.

DURING the past sixty days there has been a less quantity of lumber shipped to this port than for any similar period in over two years. This is accounted for by the desire of the lumber merchants here to reduce stock on hand. As will be seen by our Building Intelligence, there are more buildings now under way than for any December month of which we have a record. The local demand is unusually large, and if the opening months of 1885 show the same activity in building circles as at present, by March the stock on hand will be so greatly reduced that the mill-men will endeavor to convince the public that lumber is scarce, and thus pave the way to a general rise.

We are pleased to learn that several South American orders of large amounts have been received for lumber. The mills furnishing these orders will have the lumber shipped directly therefrom, so the "big yard across the bridge" will not be made any smaller by the orders received.

Some time ago it was proposed to frame a law by which it would be unlawful for a railroad company to increase their rates after having once made a reduction. The same principle ought to be applied to lumber, so that our capitalists and builders could calculate ahead of time, the price for which they could erect buildings, or make other improvements.

Modern Architectural Designs and Details.
Price, \$10.00.

SPECIAL OFFER. BOUND VOLUMES OF THIS JOURNAL TO NEW SUBSCRIBERS FOR 1885.

Upon receipt of \$3.25 we will send a bound volume of this Journal of either 1880, 1881, or 1882 and the full year's numbers of 1885. We have had an extra number bound of the years mentioned, and make this offer to increase our subscription list. We are bound to increase our list, so that the end of the year 1885 will witness not less than

TEN THOUSAND
Paying subscribers on our books.

Work and Wages.

THE naming of a day early in the spring of 1886 for a convention of representatives of all the labor organizations in the country, whereat steps shall be taken to make the legal working-day in every part of the country no more and no less than eight hours, makes it very desirable to expose the fallacy of the "eight-hour movement." As we have never seen it put in a more simple and understandable form than has lately been employed by the Boston Herald, we reproduce its arguments at length:—

WILTON, Me., September 29, 1884.

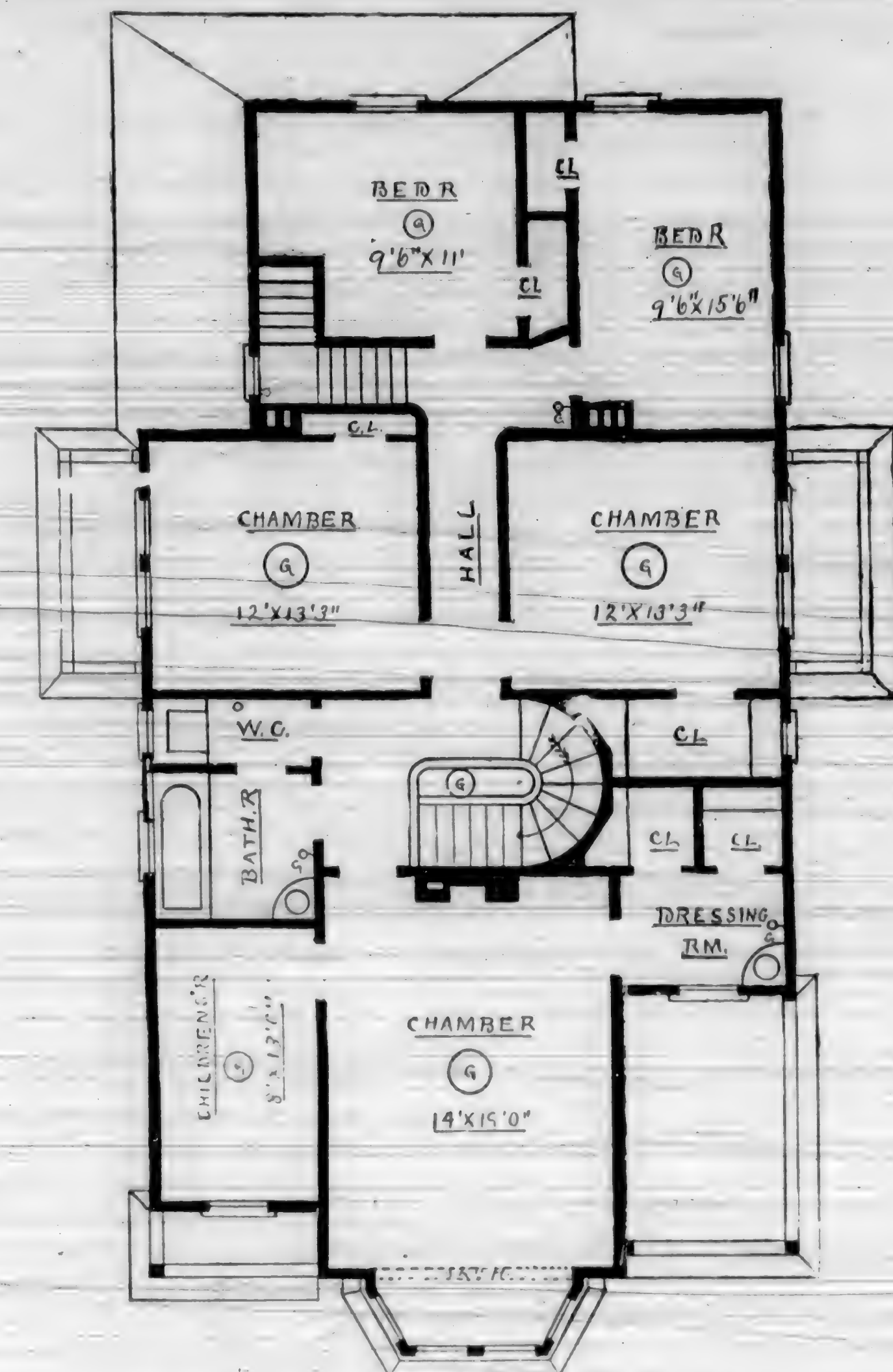
TO THE EDITOR OF THE HERALD.—In conversation recently with a gentleman from New York, a contractor and builder, and an ardent disciple of B. F. Butler, he advocated the passage of a law making eight hours constitute a day's work. He urged that its adoption would be immediately followed by a rise in wages, because it would create a demand for twenty per cent. more labor.

Now, I am confident this reasoning is incorrect, but I am unable to demonstrate its fallacy to my entire satisfaction, so I appeal to you to set me right.

If it will not trespass too largely upon your time and space, an answer through the columns of the Herald will greatly oblige, F. A. R.

The fallacy conveyed in the above assumption is a common one, and runs through all legislation in this country on industrial subjects. Thus, if the assumption were correct that a rigidly applied eight-hour law would be immediately followed by a rise in wages, on account of the demand for twenty per cent. more labor, then if work were restricted to two hours per day, there would be a still greater increase in wages on account of the demand for eighty per cent. more labor, that is to say, the less time a laborer worked, the more money he would receive, and hence, with two hours' toil out of the twenty-four, he would make very much more money than he now does by the steady strain of ten hours per day.

This is a delightful theory, and for the good of humanity it is a great pity that in its practical execution certain obstacles are met with which seriously militate against its efficacy. If it were possible of application, the entire problem of procuring for human beings in this world a happy and contented existence would be at once solved. With plenty of time for study and recreation, even the commonest workingman could be both a student and gentleman of leisure, while the scale of pay would be so high as to place every one far beyond the possibility of want. But, as we have said above, there are one or two slight obstacles in the way. If under an eight-hour law but four-fifths, or under a two-hour law but one-fifth, of the wealth is produced that is now the result of ten hours' labor, then necessarily there would be only four-fifths, or one-fifth, of the amount to divide among the workers and the capitalists. As a man cannot by taking thought add one cubit to his stature, so the people of a country cannot by legislation produce any more wealth than their daily work enables them to produce. Wages are paid from the wealth which labor produces, and if this production is restricted, then there must



SECOND STORY PLAN OF \$5,000 COUNTRY DWELLING.

of necessity be a corresponding shrinkage in the rate of wages paid. If men could turn out as much in eight hours as they can in ten, then the rate of wages might be the same in either case; but not unless the results of work corresponded. To give a broad example: According to the census of 1880, there was produced that year in the United States wealth approximately amounting to \$7,500,000,000. Of this, fully \$6,500,000,000 worth of wealth, or \$130 per individual, was used up during the year in supporting the life of the community, leaving a margin of saved or reserved wealth of not quite \$1,000,000,000. Now, if the work of the entire community had been cut down twenty per cent. in amount, we should have produced in the year \$1,500,000,000 less of wealth. If we had continued our consumption at the same rate, not only should we have laid nothing aside, but we should have begun the year 1881, \$500,000,000 worse off in wealth than we were when we began the previous year. On the other hand, if the united work of the community had produced wealth to the amount of \$15,000,000,000, then

there would have been very much more to divide among all classes of the community. The consumption of wealth would have been much greater, and yet the surplus revenue left over could have been considerably larger than it was. In short, where there is a large production, there is of necessity large wages, where, where there is small production, the wages are correspondingly low. So long as time remains an element in production, the longer that a man works, everything else being equal, the greater will be the amount of wealth he will produce, and the larger the amount of wages that can be paid him. In order that there be no mistake, we would add that it frequently happens that a man can produce more wealth by the work of ten hours than by the work of twelve, fourteen, or sixteen hours per day, for the reason that the strain upon his physical and mental powers by continued application makes it impossible for him to perform careful and effective service during these long periods of time.

House Plans—a new work. Price, \$2.50.

Panorama Building.

THERE has lately been erected in this city, a building that is different in construction from any that has as yet been built. Our engraving presents a very correct view of the Panorama Building.

It occupies the 50 Vara lot on the southwest corner of Mason and Eddy Streets. The building is in shape a polygon of sixteen sides, and is 126 feet in diameter. The outside walls are fifty feet in height, the apex of the roof being seventy-six feet. The building is strongly put together, and is admirably adapted for its intended purposes.

The entrance is broad, with rooms each side for ladies' parlors, etc. After passing the portals, two corridors are seen. One of these is intended for an entrance-way and the other for exit. These corridors are darkened so that a person entering from the street will gradually lose the effect of the outside light and be prepared for the different rays from the interior.

At the end of the corridors are winding stairs, four feet six inches wide. These lead to a platform in center of building. This platform is thirty-five feet in diameter and is capable of holding about 400 people.

From the platform, a grand view of the panorama may be seen. The picture extends clear around the whole building and is in size 48 by 380 feet. The first painting to be placed on exhibition will be the "Battle of Waterloo," the work of Joseph Bertram and L. Sargent.

The arrangement of the shades to regulate the lighting of the interior, is a novel one and much credit is due to its originator. The architect of the structure is Mr. A. Pissis.

To Our "Mechanic" Patrons.

WE have been favored in the past with numerous most excellent and well-written articles from the pens of patrons who toil for their daily bread—mechanics whose thoughts are largely the result of practical, daily experience—the hours of study with such being but few, and those more generally after the physical forces have been subjected to the strain of a more or less "hard day's work." So excellent have some of these articles been that they have been copied into numerous other journals and thereby given publicity throughout the length and breadth of our country; and beyond this, European journals have also copied, so that those, in many cases, who have given an hour or two to placing their thoughts and conceptions in shape for the columns of this Journal, have furnished matter read by hundreds of thousands of their fellow-men; and although they may never meet with merited, personal responses and acknowledgments, they nevertheless have done good work, which, if not otherwise compensated, may meet its reward in that grand hour when "every man shall receive according to the works done in the body." Prominent among these is "J. E. W. C.," whose articles have been well received, and largely copied. Mechanics of California

are not hundreds of you allowing the golden opportunities at your disposal to pass unimproved, in not availing yourselves of the facilities presented through this journal to develop the mental, intellectual, and practical powers of mind and thought, which in so many are allowed to remain dormant through passive indifference and neglect, thus depriving yourselves of the benefits which never fail to follow in those who seek to improve themselves and their fellow-men by revealing and making known every best thought which earnest reflection, meditation, and free expression brings.

We have again and again proffered space in the columns of this Journal to all of every class, mechanics as well as architects, engineers, inventors, assigners, scientists, producers of material and devices, and all others, and our proffer has been accepted by many, but we again ask that many more may join the number, so that our seventh volume may be honored with numerous well-written articles, pertinent and expressive of new ideas, or of old in new dress. The abilities are not lacking; it is the absence of *will and purpose*, and in some, a selfishness which belittles and dishonors; a fear to "give away" that which, concealed, is of but little value, but which sown broadcast may carry joy to thousands. Individual human thought and knowledge are limited to the years of human life, if held in bondage until the hour of death, with which all thinking ends, and that which has been in our power to make useful to others, passes away with us, unless we fructify and enrich the soil of our existence, by scattering broadcast the seed of thought which God and nature has caused to form in us—for what purpose? to rot and perish in ourselves? No, but that we may plant them in other minds to grow and bring forth other seed, and harvests of rich, ripe fruit. Brethren, reflect and act accordingly. The columns of this journal are open for you, and we invite you to come with the best you can give, and if any have good thoughts and ideas, and feel to lack the word clothing necessary to make them presentable, come, and we will help you dress them up in the best style possible, according to our abilities so to do.

Brass in House Furnishing.

WHILST brass has at all times been employed for artistic purposes, it has been subject in this respect to the laws of fashion, being resorted to at one period more than another. From the mediæval age it has been continually patronized, however, for ecclesiastical furniture and its accessories, as in altar frontals, pedestals of fonts, and symbolic devices. The present tendency of decorative art toward rich and attractive colors, in material and in surface tints, and the freedom imparted to design, owing to the breaking up of former set styles, with the prevailing taste for the most cheerful possible aspect to interiors, and an improving standard of elegance and refinement, have led to a greater prominence

than formerly was given in the use of brass furniture.

In cabinet work, builders' hardware and the ornaments that pertain to a well-furnished room, this metal has a well-defined sphere of employment. Considerable originality, with much good taste, is shown in the designs of the brass furniture brought out. Resort to fire-gilt gilding prevents all liability to tarnish, and this gilding, through the variation in hues that can be imparted to the surface, multiplies artistic effects, whether used separately or in combination. The surface of brass takes satin finish, dead lustre, brown bronze, and oxydized silver. Tiles and enamels in delicate y tinted designs associate admirably with brass in furniture and general decorative work, so also dark woods. A quality decidedly favoring brass is that its beauty is enhanced by artificial light.

There is no question that in dealing with this metal, American art exhibits higher taste in furniture than in the greater proportion of that turned out in England. As a rule it is simple, and, if apparently less ornate, is more satisfactory. The elaborate ornament at low cost in the abounding English work is due to the employment of sheet metal stamped in imitation of wrought work, the moulds ensuring often an undesirable amount of uniformity.

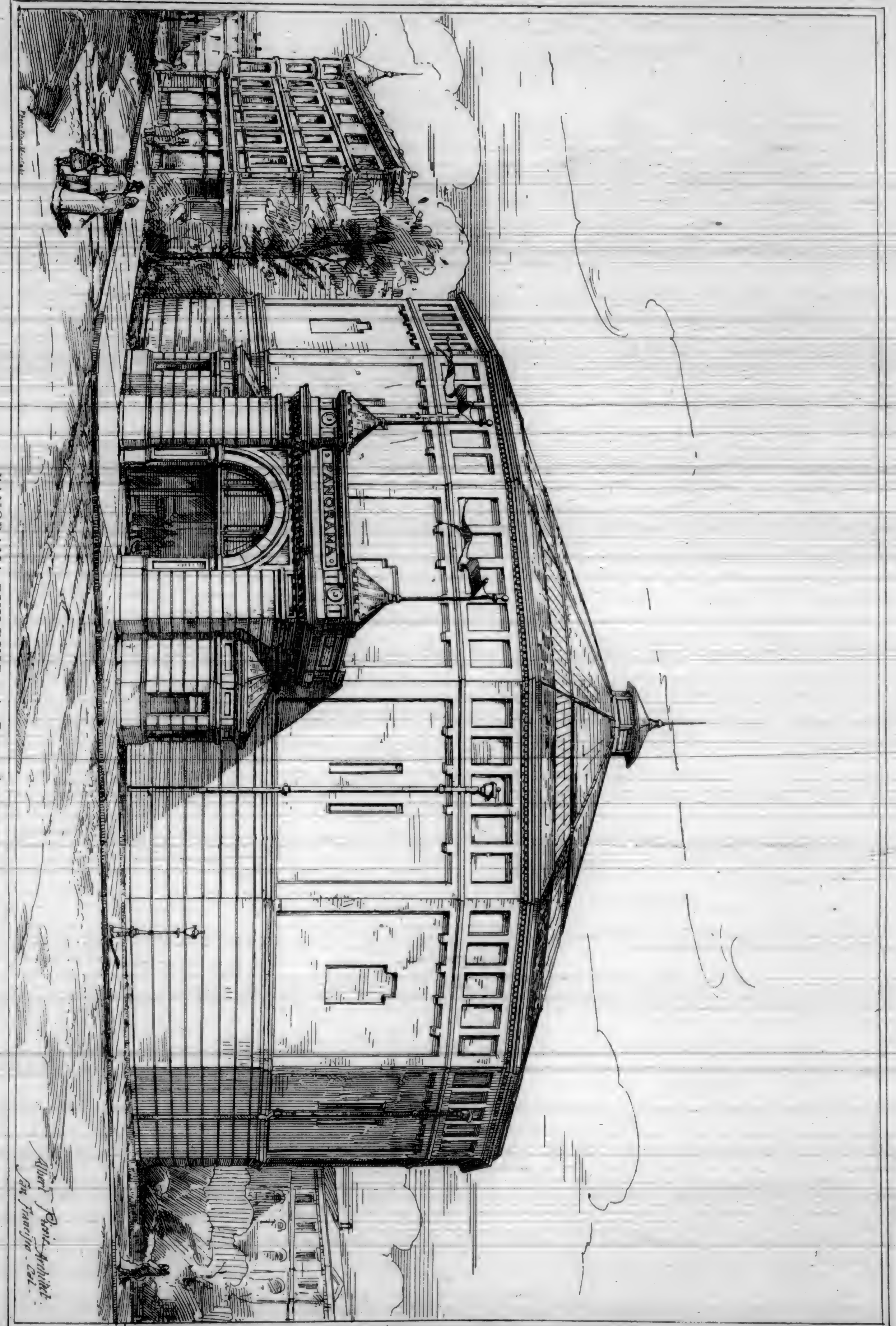
The pieces of stamped in sheet metal, entirely composing an article, are riveted together. Stamped is used for picture frames, but is always wanting in the ancient wrought work for this purpose. It suits well such articles as coal and fire-wood boxes, of which some fine old examples are to be met, also for fire and stove screens. Owing to the thinness of stamped metal it is unsuitable for fenders; in fenders preference should be given to perforated designs of naturalistic forms conventionalized, or to mounted bars with standards.

Some admirable brass fire-gilt mantels, broad and lofty, and constituting imposing mural decorations, are finding their place in the city mansions. Other metal than brass, particularly hammered copper and oxydized silver, are frequently introduced in these for contrast and giving depth to the designs with other scenic effects, whilst painted tiles in brass panels, in diapered and other forms, line the several recesses.

Steel is well combined with brass both in fenders and fire and dog irons. One use to which raised brass work is well applied is for lining the backs of open fire-places, the design being commonly small diapered forms with central figures, or tiles sunk in panels. The rough filing of the surface off so as to give it a surface of rough and irregular sparkling grains for a coating, set off with burnished edges or terminals, was a favorite mode of decoration under the first French empire, particularly for chandeliers of the corona style, in the way of massive pendants.—*Decorator and Furnisher.*

Universal Assistant and Complete Mechanic.
Price, \$3.00.

PANORAMA BUILDING.—A. PISSIS, ARCHITECT.





DESIGN FOR A RUSTIC COUNTRY DWELLING.

Wages and Material.

FOR the convenience of many of our readers, we give the price of some of the building materials used, and labor in connection therewith:

Rough Lumber.....	\$18 00 per M.
Surfaced Lumber.....	33 00 " "
Lath.....	3 50 " "
Shingles.....	2 50 " "
Nails.....	2 75 " keg.
Hardware.....	Cheap.
Lime.....	1 50 per bbl.
Cement.....	\$2 25 to 4 50 " "
Plastering.....	28 " yd.
LABOR.	
Carpenters.....	\$3 50 per day.
Masons.....	5 00 " "
Cabinet Makers.....	3 50 " "
Hod Carriers.....	3 00 " "
Laborers.....	2 00 " "
Plumbers (and help).....	6 00 " "
Glass, mantles, roofing, etc., can be had at low rates.	

We print the above in answer to several questions received.

Architect's services are placed by the laws of the Chapter at \$15.00 per day.

Draughtsmen command from \$1.00 to \$5.00 per day according to ability.

CAN you explain how it is that although water expands in freezing, a piece of wet board when frozen is smaller than at any other time? That it is so I have proved repeatedly, although I have heard the fact disputed. A.—The expansion of water ceases at the moment of congelation. Ice contracts by cold more than wood.

The Wall as an Architectural Feature.

PROFESSOR ROGER SMITH gave an interesting introductory lecture on this subject to the architectural students at University College, on Friday, the 3d inst., of which the following remarks formed a portion:—

The preparation for building a wall is, as every one knows, to find or make a foundation. A bad foundation is literally, as well as in a figure of speech, at the bottom of most of the failures that occur in walls. When a good foundation is secured, the success of the wall is rendered possible. What is a good foundation? The best is one that is perfectly immovable and incompressible, such as rock. The house built upon a rock is the one safe to stand. Next to this, and only one degree less good, is the foundation which may yield or compress slightly under a load, but will do so with perfect uniformity. Soft, irregular, shifting foundations and those exposed to the action of water, frost, and air, are among the most notoriously bad ones. The ordinary London foundation is clay, in some cases mixed with loam or sand. In building on it great care is necessary; the foundation must be carried so far below the surface that frost will not penetrate to it. To secure this in the London climate you should go 4 feet deep, and even more.

The surface round the building should also be protected so as to prevent the percolation of water. The weights of the different parts of the wall should be as nearly uniform as possible, and they should not be extreme. Four tons per foot superficial is quite enough.

It has become a practice of late years to form a kind of artificial rock of concrete upon the foundations of earth or clay, composed of small stones and lime or cement. This concrete, which hardens into an incompressible slab, admirably spreads and distributes the weight, and is of great use in preventing disaster. In the case of very bad foundations enormous quantities of concrete are often employed, and with success. The base of the wall, like the concrete, is below the level of the ground. It is, to some extent, a modern improvement, or, at least, it hangs on to the modern notion of building thin walls. In the Middle Ages, when walls were immensely thick, it was not very often customary to build them with spreading footings; now it is usual, and a most useful custom it is. Walls in London are required by law to be twice as wide at the bottom of the footings as they are themselves. Of all the properties a wall can possess I think stability is the most noteworthy. Of old this was sought in great thickness. The Romans first showed that constructive skill would enable men to build walls thinner than had been customary, and yet stable. Our modern walls are vastly thinner than those of the Romans; but then there are few modern buildings for which we expect, or could desire, a durability like that of ancient Roman work. Good materials, good putting together, and strong cement, with some amount of protection from weather, are what we must rely upon for the preservation of our walls. Homogeneity, or the use of materials all of one sort, would seem at first sight to be essential to the construction of a good wall; and yet, though many ancient walls like those of Munich, and, I believe, those of Athens, were practically homogeneous, the walls cleverly put together by the Romans of three or four different sorts of materials have proved, some of them, to be all but indestructible.

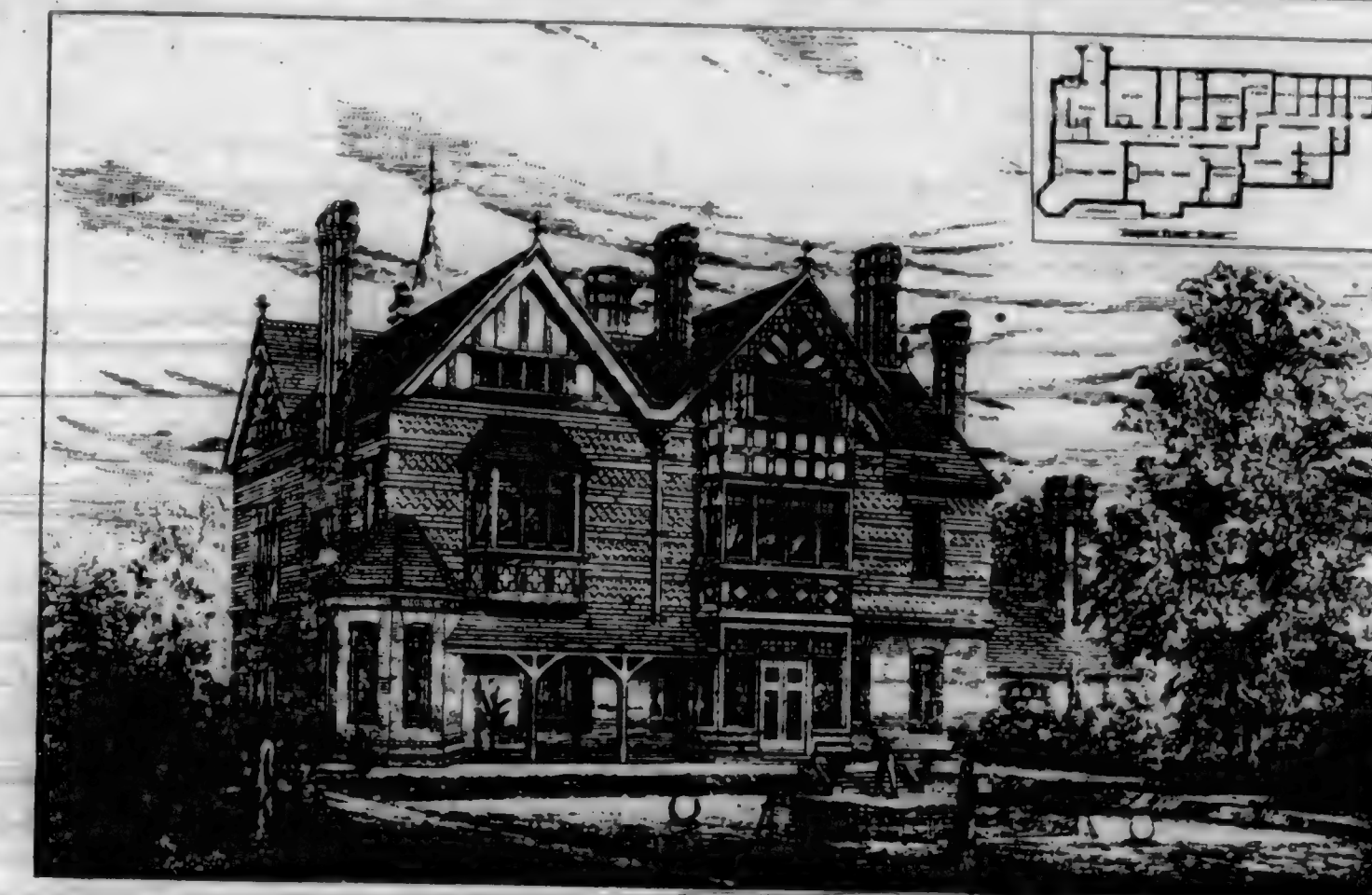
Uprightness is essential to stability, and to look safe a wall must be obviously upright, though a tapering form, like the pylon of an Egyptian temple, also looks strong, and really is so. Length was the ancient way of giving importance and dignity to walls; height is the comparatively modern way. In the early ages of the world, and in the ruder stages of the development of modern nations, it is extent that is relied upon where an effect is to be produced. The greatest of the temples of Egypt, for example, the temple of Ramse, with its dependencies, extended over about 2,000 feet, or more than the third of a mile. The rude stone avenues of prehistoric origin to be met with at the spot of the same name in Brittany, extend over about a mile and a third of country; and, as another example of a different kind, I may recall to you the Roman wall which stretched right across the north of England. As the power of building, and skill in the production of architectural effect increased in any nation, height was more sought after than extent; but it was, with a few exceptions, reserved for Christian and modern architecture to attempt with suc-

cess buildings in which height is the main feature.

Straight lines and right angles seem to have been almost the only rule in very ancient work, such as the Egyptian and the Assyrian. The Greeks first introduced curved walls in their theaters. The Romans continued and extended their use, and introduced polygonal shapes, all of which have obtained ever since. Colored materials are to be met with at all periods of the world's history; but as their use always has reference to the architectural effect of the wall, we will postpone them to the second part of the lecture. Having now looked a little at our wall, let us try to look into it as far as we can, and perhaps an architect can look further into a stone wall than some other people, notwithstanding the old proverb. What, then, are walls made of? You may lay it down as a general rule that a wall must be made of something that lies ready to hand.

In many cases the fact that the material of which some small or ornate object is to be made comes from far is a point in its favor. We prefer Italian marbles to Devonshire, or to the serpentine of Cornwall, not because they are always more beautiful (for they are not), but because they are Italian. But for wall building so much and such heavy stuff is wanted that it never does to bring it far. Accordingly, in localities where nothing else is to be had, walls are built of earth. In Devonshire, for example, cottages, barns, and the walls of gardens and orchards are commonly of earth, and they are warm, solid, and, if well taken care of, durable; but moisture must not be allowed to get into the heart of them, or they will soon crumble. Next to earth is a material not, so far as I am aware, known in England, but once in use in the East, sun-dried bricks. Vitruvius says that the walls of Babylon were built with sun-dried bricks laid in bitumen; and it is supposed that they were largely used in Assyria and Babylonia, and that some of the shapeless mounds which now mark the site of ancient structures consist of a mass of what was once sun-dried bricks.

Next, of course, we should come to brick, the material only too familiar to the London eye, and the refuge of builders throughout the world and of every age who, like the London builder, were not so fortunate as to have stone within reach. In Egypt and many parts of Italy there are remains of brickwork of great antiquity, and in Lombardy, North Germany, France, Belgium, and our own country, brick has been extensively used, and is in use at the present day. Bricks were not always of the sizes and shapes we are familiar with. The Romans made them flat, more like our tiles, and in many European countries they have been used considerably smaller. The size is a good deal influenced by the weight. An English brick can be held and managed by an artisan with one hand. If it were much larger or much heavier it would take two hands, or even two men, as were probably employed on the Roman bricks. The most refined kind of brick is called terra cotta. It is



A COMFORTABLE COUNTRY HOME.

of the nature of brick, but bears the same kind of relation to it that marble does to stone or silver to pewter.

Terra cotta is, in theory at any rate, the most appropriate ornamental substance to employ with brickwork, and though there are some practical difficulties in the way of using it, when these are overcome it is an admirable material. The best and most desirable material for wall building is, however, stone. Every sort of stone that is in the least degree deserving the name of stone has been made use of for the purpose of wall building,—from flints, which are some of them as inconvenient in shape for the mason's use as potatoes would be, up to the hardest granite, the finest and truest freestone from our many excellent limestone and sandstone quarries, or the beautiful and precious marbles of Greece and Italy. There are stone walls in Greece and in the Etruscan plain, which have come down to us from remote antiquity, made of large polygonal stones unwrought or but slightly wrought—and coarsely fitted together without mortar. There are others in Egypt of the finest polished granite with joints so close and true that the edge of a sheet of paper cannot be got between the blocks; but as remarkable in its way as these specimens of consummate handicraft is the construction of the Roman walls which were often made of small stones, such as we make macadamized roads of, set in a tenacious mortar which has hardened till it is as strong as the stone itself, and steadied at intervals by the introduction of a bond-course of flat bricks or large stones. With this mode of construction, which could be carried out anywhere, the Romans built vast works, the ruins of which remain all over Europe.

There is quite as much to learn about stone as about brick; in fact, a great deal more, as for example, how to select stone, for, owing to the ease with which many sorts of stone are acted upon by the weather, there are many precautions to be taken in the selection or use of material. I will just name the three cardinal ones, which are these: First, select for use stone from a quarry, and from a bed in

that quarry which experience has shown to be durable. Secondly, let that stone lie in the building in the same way as it lay in the quarry, or, as masons would say, bedwise. Thirdly and lastly, take such precautions as will insure that no moisture gets into the inside of your wall, or into the heart of the stones that compose it. The materials I have named all of them require to be held together by some sort of cement if the wall is to be durable and weather-tight. Lime is at the bottom of all the cements in general use, and its faculty of hardening after being calcined and slaked, and, as it hardens, of adhering to the surface of the stones or bricks with which it is in contact, is invaluable. Mortar is made of quicklime and sand. Cements and hydraulic limes are compounds (natural or artificial) of lime and other substances, chiefly alumina, which enables it to set harder, and under water, and more rapidly than in its unmixed state. I need hardly point out that where the heart of a wall is of many rough stones laid with much mortar (a substance more or less incompressible), while the face is formed of few well-dressed and square stones laid with little mortar, there must be great risk of the two parts of the wall behaving differently the one from the other when weight comes upon it.

This happened in much of the work of the builders during the eleventh and twelfth centuries in England,—the period of the Norman style. Professor Willis has gone so far as to say that if a Norman tower has not fallen, that circumstance throws great doubts upon its being Norman. Certainly an immense number of them have fallen, and as an example of failure, happily anticipated before there was a fall, I may remind you of Peterborough, where the core of the Norman piers carrying the great central tower has crumbled, and the piers have arched, and have been taken down within the past year. Different from the practice of building composite walls is another which I will only just mention, that of building hollow walls as a protection against damp. We have by no means exhausted the list of materials for walls if only