

Not "One-Sided Nor Prejudiced."

THE *Building Trade Journal* in its issue of June 15th, in quoting and noticing our article—"Insolvent"—in our May number, page 75, says: "Although there are incompetents in every trade and profession, the ratio given above, as applying to builders, indicates a rather one-sided and prejudiced view of the matter."

The sentence last above italicized, is, to us, severely objectionable, for it is not in us nor of us to be actuated or influenced by motives or feelings so ignoble and unworthy to common manhood, and much more so to one who occupies the chair editorial of a class journal. There was neither malice nor prejudice in the cases reported by us; neither of the parties were known to us personally, nor had we knowledge of their existence as men, until their financial status became matters of general information through the daily press and otherwise. Consequently, there is no shadow of grounds for our St. Louis contemporary presuming that personal feelings entered into the case.

And more than this, the facts of the Gilbert & Co. case were mildly stated, nor near one-half the story told, as has been clearly demonstrated by subsequent developments,—investigation showing that the concern was guilty of absolute recklessness, but little if any less in character than preconceived and preconcerted rascality; or, if not this, then executive incompetency and personal ignorance of values, and lack of ordinary good judgment and common-sense were largely in the ascendancy. Contract upon contract was undertaken by them at ruinous figures, and the loss upon one afforded no admonition of care in the next,—each successive and subsequent move augmenting their financial difficulties, until, overwhelmed by accumulated burdens, they were compelled to succumb, and terrible in its way was the fall thereof; as numerous confiding creditors and clients were made to suffer to the tune of nearly one hundred cents on the dollar, and the houses turned out by them were of the worst "skin" kind; thus adding mechanical to financial dishonesty. Yet our kind-hearted brother editor indulges the suspicion that we, with these facts before us, may have been "one-sided and prejudiced." This we presume to be prompted by his great natural innocence and kindness of heart, and his lack of experience in the "ways of the world," as found in the history of the building business in California.

It is no more pleasant to us than to him, to speak or write disparagingly of any one, and we are as ready and willing as any one to sympathize with misfortune, nor wish we ill even to our meanest enemy; for "vengeance is mine, saith the Lord," and far be it from us to seek to anticipate the divine will, by the interposition of personal prejudice or petty spite toward any one. But while most generously disposed, and ready to help our fellow-man, as journalists in the interests of architecture

and building sciences, it becomes an incumbent duty to expose transactions and customs which bring discredit and reproach upon either, and financial disaster and loss to those who furnish the materials and labor accompanying such results.

Again, our good brother did not read us understandingly, or he would not have placed us in a false light in his columns. Our ratio did not apply to mechanics generally, but to that special class of "frauds" which have so largely abounded in California. We said: "There are not five in one hundred of the class who are not frauds in more ways than one," and it is true. It may be that in St. Louis and other cities such cases are the exception, but on this coast they have been numerous; and the outcry among the good and competent of all classes of mechanics has been for a quarter of a century against the demoralizing and injurious effects of the class in question; who—however honest in intent and purposes, and however deserving of sympathy they may be in business practices, are consummate asses and swindlers, taking work sometimes at but little better figures than the actual cost of materials, settling with creditors at all rates of percentages, from 10 cents on the dollar and upward; and as it has been in a large number of cases, where the owners have been compelled to finish up their buildings on account of contract, the balance of contract sum has proved insufficient to complete the work, leaving creditors no *pro rata* whatever.

We hope hereafter that contemporaries in the older States, before impugning our motives in the relation of cases occurring in California, that they inform themselves more perfectly as to the state of facts, and fix judgment upon those, rather than rejecting statements coming to them from authentic sources, simply because they seem extraordinary and improbable, viewed in the light of experiences in cities and States where such irregularities seldom if ever occur.

It is well and charitable to "hope that ambition and real enterprise have more to do with the desire to climb upward, than a combination of incompetency and egotism;" it is well to so hope, but such hopes rest upon a poor foundation, when placed in men whose ambition and enterprise terminate in discredit and dishonor to themselves, and financial loss to others. Ambition and enterprise sustained by good judgment and sound business sense has given to the world a multitude of splendid results, but millions of ambitious and enterprising frauds have lived only to do mischief; and it is to this latter "class" we referred in our previous article. There are, from time to time, failures in the business world, and some of a character which stamps the parties as business ignoramuses or out and out rogues; in either case creditors are made to suffer loss, and the reputation of many innocent persons prejudiced.

If the two cases mentioned by us were the only ones of the kind on record in these parts,

they would have passed unnoticed; but such is not the case; hundreds have done the same thing, and some of them many times over, and hundreds of facts are well known, going to prove not only incompetency and egotism, but that which is worse,—deliberately concocted rascalities.

But, with all this, we wish it fully understood that there are at the head and front of the building business in California, sterling good men—mechanics of education and service, honest in nature, heart, and soul, and as competent as men can be made. Of these, good words only can be said. And as time rolls on, there are others, who, being mechanics in an acceptable sense, seek to emulate and equal those whom they have served, and by a judicious, cautious, and careful course, work their way into the fold of good and competent contractors; but the "frauds" of whom we have written, are those who attempt more than they are capable to accomplish, look sensibly at no end from the beginning, care but little for consequences, and through their incompetency and egotism, strongly tinged with premeditated dishonesty, they make failure of about all they undertake.

Our contemporary further says: "Were the general argument good, there is no visible reason why it should not also apply to painters, plumbers," etc. The general argument is correct, and does most fittingly apply to the "fraud" class of painters and plumbers in this State,—to painters who, to exemplify and amplify their "ambition and real enterprise," compound all manner of base ingredients—soap, plaster paris, benzine, water, and other ingredients possessing no quality of genuine lead and oil paint, nor reputable compounds—and swearing by high heaven that there is not a particle of adulteration in the mixture, and with premeditated and deliberate purpose, by strong assertions of honesty and fraudism of the most brazen character, cheat good and worthy men out of opportunities to perform honest work, and swindle owners without mercy or compunction of conscience; and to plumbers who, incompetent to make a decent "wiped joint," who understand not the first principle of sanitary plumbing, and are refused more than temporary employment as semi-menials in any first-class plumbing establishment,—even these, by scores, ape mastership, full of enterprise and ambition; but not that honorable and worthy enterprise and ambition which inspires men of noble purposes to step forth from the ranks of wage earners, fortified by mechanical mastery over the intricacies of the branches to which they have devoted their years of apprenticeship and earlier manhood, to assume the attitude of men ambitious to win like honorable name and position with those who have established themselves as competent and reliable masters of the art pursued.

To the latter our hand and columns are ever open and free, and we commend honor-

able ambition and enterprise on the part of any one who, by industry, application, and diligent effort, has won the laurels of competent mechanics, but have no word too severe to use in reprobation of the "fraud class," to whom our first article referred, whose ambitions and enterprise is of that debased character that entails dishonor, and reflects discredit upon building and mechanical pursuits.

Master Plumbers' Convention.

A FULL report of the meeting of master plumbers, held at St. Louis the week ending June 27th, appears in some of our Eastern exchanges, from which we gather that the meeting was largely attended, with delegates from Alton, Ill.; Birmingham, Ala.; Baltimore, Md. (12); Boston, Mass.; Brooklyn, N. Y.; Chicago, Ill. (16); Cincinnati, O.; Columbus, O.; Cedar Rapids, Ia.; Denver, Col.; Des Moines, Ia.; Hampden Co., Mass.; Hudson Co., N. Y.; Kansas City, Mo.; Kansas State; Louisville, Ky.; Muscatine, Ia.; Milwaukee, Wis.; Minneapolis, Minn.; Memphis, Tenn.; Madison, Wis.; New York City (24); Omaha, Neb.; Providence, R. I.; Philadelphia (17); Pittsburg, Pa.; St. Louis, Mo. (13); St. Paul, Minn.; Washington, D. C.; Wheeling, Va. The proceedings appear to have been in every way satisfactory. "It was unanimously resolved to indorse the action of the vice-president in his course taken against the firms who had issued certain documents to the public." The following was passed:—

"Resolved, That it is the plain duty of this association to maintain and enforce the integrity of the Baltimore resolution, and that all members of the craft, in self-defense, be requested to withdraw further patronage from dissenting manufacturers, and stand by those who stand by us."

"Your committee recognize that an extremely important element in the sanitary future of all large cities, is a judicious and efficient building law, designating the relative duties and responsibilities of architects, plumbers, and boards of health; and especially to place the legal requirements of plumbers up to the highest standard of sanitary science. We desire the aid and co-operation of local associations in having such laws enacted by the State Legislatures as will clearly define, as above, the duties and responsibilities of each, and for the enforcement of a rigid inspection of all plumbing work. We deem that this is admitted when we plead for law in order to render advanced knowledge available. Our plea is neither ignoble, selfish, nor narrow, as with our success, communities are benefited, as it means healthy dwellings alike for both the rich and poor."

SAN FRANCISCO NOT REPRESENTED.

Why is it that the craft in San Francisco was not represented by some one or more of the most excellent and competent gentlemen, qualified to represent and reflect credit upon the Pacific States, especially San Francisco, by their presence at the Convention? We regret that this fine opportunity has been allowed to pass, to extend the warm hand of California

to the members of the plumbing art from Eastern, Western, Northern and Southern States. Unfortunately, neither the representative architects nor mechanics of San Francisco seem to manifest that interest which by all means should exist, of placing themselves side by side with the progressive advancing people of the East. The Chapter of Architects in this city should at once elect some one of their number to be present at the next general gathering of the parent institute, and we earnestly urge that the plumbers take the matter in hand, and at once nominate one or more delegates to be at the next general assembly of their brethren in 1886. Do not let us remain forever exiled from our fellows abroad, and confirm the belief that California is a way off, forsaken land; good in grain, fruits, wine, and vivacious fleas, but not much as far as architecture, plumbing, and the mechanical sciences are concerned. In some respects, California leads; but so long as her talents are shut up under the bushel of unconcern, it cannot be expected that strangers will come among us, and drag out that which should be made manifest by our own will and acts.

Honesty a Beautiful Thing.

BEAUTIFUL in theory, but more beautiful in practice, both generally and in mechanical pursuits; but how about its application in these days of progression and advancement, as a governing and controlling principle among men, in shaping their intercourse and dealings with each other? Everybody appreciates, approves, and in words glorifies the theory, teachings, and poetry of true honesty, and loudly commend and applaud the acts of the few who demonstrated the possibility of human kind, at least sometimes rising to that purer life which commends itself as worthy of admiration; but how many are there who make it a rule of life, and exemplify it in even a reasonably, spotless degree—the inner principle considered? The outward rule of being honest as honesty goes, doing nothing not within the law and customs of the times, and the exercise of that higher degree of integrity which places self-interests in jeopardy, when they or the sacred principle of right in the sight of God are at stake, are very different considerations. How many in high and honorable professions, in trades, vocations, and callings of endless names and kinds; how many who from sacred platforms and altars, proclaim peace on earth and good will to man, and make the sanctuary of holiness grand by the sound of words gilded with the accents of eloquence, who are in all things, both of words and acts, pure from the defilement of dishonesty, beyond the words they utter before listening throngs of men and women, and within the limits where they must stand to avoid exposure of human weakness in some form.

It may appear sweeping to thus question, but who that has seen the world, met the sometimes bitter experiences encountered in

active business pursuits, and has read, and understands human nature in its more common forms and characters, as developed at the present day, that is not compelled to say, O honesty, in thy purity thou art beautiful, but where, oh where, art thou to be found, and why are thy followers so few?

California Not Reported.

In many of our Eastern contemporaries, we find the building activities of cities beyond the limits of the city and State of publication, extensively and regularly reported; but rarely, so far as San Francisco and California are concerned; although this Journal, with its full monthly report of Building Intelligence, is regularly received, and other matter from its columns frequently copied and accredited.

This fact would seem to argue that the building interests of this coast were of immaterial consequence east of the Sierras, or that it is best to leave us severely alone, to enjoy the rich fruits of our splendid prosperities, unnoticed. Be this as it may, it is a fact that during the infant days of this Journal's existence, the advance statements forwarded from this office to New York were received with "thanks," and were always duly published; but so soon as this special correspondence ceased, San Francisco and California were dropped, and no longer appeared among the notices of cities and States worthy of being reported as prosperous in building improvements.

THREE TERRIBLE CALAMITIES.—The heartless Buddensiek led off with the first, in Brooklyn came the second, while the third was reserved for Jersey City, each inflicting calamity, loss, bodily injury, and death itself. While condemnation too severe cannot be measured out to men, who, from mechanical and moral baseness, become the agents through which such occurrences transpire. The Jersey man is entitled to some small degree of pity and sympathy, inasmuch as by the work of his own hands, three of his family were the victims of his wrong doings; the greater pity being, that he, instead of the innocent ones who looked up to him, was not buried beneath the ruins of his own creation.

LABOR STRIKES.—They have been numerous within the past twelve months, in various parts of the country, but, as a rule, the "strikers" have won—the employers generally yielding, receding, or compromising. The argument, in this State, of facts rather favors the conclusion that the present and future business and trade prospects are good, and that production must go on. Were it otherwise, and appearances seemingly justifying a continuance of the conflict on the part of employers, it is not likely that they would have vacated their demands for reductions, or submitted, as they have in some cases, to increase of wages. It may therefore be fairly argued that the conditions and prospects generally are in no wise discouraging.

Crazy Quilt Architecture.

THE following from the pen of Bill Nye, in the *Chatanooga Times*, contains more truth than fiction, and is well worth reading:—

"It may be premature, perhaps, but I desire to suggest to any one who may be contemplating the erection of a summer residence for me, as a slight testimonial of his high regard for my sterling worth and symmetrical escutcheon—a testimonial more suggestive of earnest admiration and warm personal friendship than of great intrinsic value, etc.—that I hope he will not construct it on the modern plan of mental hallucination and morbid delirium tremens peculiar to recent architecture.

"Of course a man ought not to look a gift house in the gable end, but if my friends don't know me any better than to build me a summer house and throw in odd windows that nobody else wanted, and then daub it up with colors they have bought at auction and applied to the house after dark with a shotgun, I think that it is time that we had a better understanding.

"Such a structure does not come within either of the three classes of renaissance. It is neither Florentine, Roman, nor Venetian. Any man can originate such a style of architecture if he will drink the right kind of whisky long enough, and then describe his feelings to an amanuensis. Imagine the sensation that one of these modern, sawed-off cottages would create a hundred years from now, if it should survive. But that is impossible. The only cheering feature of the whole matter is that these creatures of a disordered imagination must soon pass away, and the bright sunlight of hard horse sense, shine in through the shattered dormers and gables of gnawed off architecture of the average summer resort. A friend of mine, a few days ago, showed me his new house with much pride. He asked me what I thought of it. I told him I liked it first rate. Then I went home and wept all night. It was my first falsehood.

"The house taken as a whole looked to me like a skating-rink that had started out to make money, and then suddenly changed its mind, and resolved to become a tannery. Then ten feet higher it had lost all self-respect and blossomed into a full-blown drunk and disorderly surrounded by the smoke-stack of a foundry, and with the bright future of thirty days ahead with the chaingang. That's the way it looked to me.

"The roofs were made of little odds and ends of misfit rafters and distorted shingles that somebody had purchased at sheriff's sale, and the rooms and stairs were giddy in the extreme. I went in and rambled around among the cross-eyed staircases and other nightmares till reason tottered on her throne. Then I came out and stood on the architectural wart called the side porch, to get fresh air. This porch was painted a dull red, and it had wooden rosettes at the corners that looked like a bran new carbuncle on the nose of a social

wreck. Farther up on the demoralized lumber pile I saw now and then places where the workman's mind had wandered and he had nailed on his clapboards wrong side up and then painted them with the paris green that he had intended to use on something else. It was an odd looking structure, indeed. If my friend got all the material for nothing from people who had fragments of paint and lumber left over after they failed, and then if the workmen constructed it nights for mental relaxation and intellectual repose, without charge, of course the scheme was a financial success, but architecturally the house is a gross violation of the statutes in such cases made and provided, and against the peace and dignity of the State.

"There is a look of extreme poverty about the structure which a man might struggle for years to acquire and then fail. No one could look upon it without feeling a heart-ache for the man who built that house, and probably struggled on year after year, building a little of it at a time as he could steal the lumber, getting a new workman each year, building a knob here and a protuberance there, putting in a three-cornered window at one point and a yellow tile or a wad of broken glass and other debris at another, patiently filling in around the ranch with any old rubbish that other people had got through with, and painting it as he went along, taking what was left in the bottom of the pot after his neighbors had painted their bobbeds or their tree boxes—little favors thankfully received—and then surmounting the whole pile with a potpourri of roof, a grand farewell incumbrance of bumps and hollows for the rain to wander through and seek out the different cells where the lunatics live who inhabit it.

"I did tell my friend of one thing that I thought would improve the looks of his house. He asked me eagerly what it could be. I said it would take a man of great courage to do it for him. He said he didn't care for that. He would do it himself. If it only needed one thing, he would never rest until he had it, whatever that might be. Then I told him that if he had a friend—one that he could trust—who would steal in there some night while the family were away, and scratch a match on the leg of his breeches, or on the breeches of any other gentleman who happened to be present, and hold it where it would ignite the alleged house, and then remain there to see that the fire department did not meddle with it, he would confer a great favor on one who would cheerfully retaliate in kind at call."

"The Plan Lunatic," supposed to have died out from sheer exhaustion, revived and appeared again in the columns of the *Evening Bulletin*, June 18th. The indications are that semi-dementia has become chronic. Peculiar people and cranks of various types have lived in all ages, and it seems that the architecture profession in California must have some of the kind.

Building Materials.

THE price of materials is an important factor in stimulating or depressing building enterprises. The period of unprecedented building activities which has prevailed in San Francisco during the recent past in particular, has been largely due to the fact of extremely low prices in lumber, which at times has been sold at no profit, if anything above cost of manufacture. Hundreds of houses have been erected within the past twelve months because lumber dealers have been extremely kind-hearted and generous in dealing out materials at but little or no profit; and the slight advance made on the prices of twelve months ago should not be wondered at—the surprise being, rather, that so intelligent a set of business men should have permitted so great a depression below fair and compensating rates.

We have never favored the lumber combinations which placed the products of the forest at prices where the cost of production and profits have averaged more than equal in favor of the latter, nor can we conceive any rational and good reason why a commodity so generally and largely in demand should be sold without profit, or so near production cost that dealers barely saved themselves from actual loss. There should be a rule of *common equity* between producer and consumer, the one never seeking to obtain exorbitant and extortionate values, nor the other refusing to pay a fair and right advance over cost on their purchases.

But so long as lumber manufactures and dealers, having full control of matters in their own hands, cause fluctuations in rates, they must expect that consumers will take advantage of the inducements offered, and glut themselves with supplies on a low market, and leave sellers to enjoy all the glory of advanced rates, to find customers among those who must of necessity purchase; while a system of steady prices, at fair remuneration to producers, would create a steady demand all the year round.

A demoralized condition of things in prices of material, for the time being, stimulates some to build who otherwise might not do so "just now;" but there are only a few of these who would permit their lands to remain unimproved for any great length of time, with an existing demand for more houses, and the chances of fair rental returns on investments.

However, if dealers and producers deem it a good and wise policy, and profitable to break the market occasionally, they may depend upon consumers availing themselves of the advantages presented.

Man has a various nature, which requires a variety of occupation and discipline for its growth. Study, meditation, society, and relaxation should be mixed up with his physical toils. He has intellect, heart, imagination, taste, as well as bones and muscles; and he is grievously wronged when compelled exclusively to drudgery for bodily subsistence.

Royal Institute of British Architects.

THE report of proceedings for 1884-85 has been received, from which we quote: "The secretary announces a large number of donations and purchases to the library." "Every newly elected Metropolitan Fellow and Associate is required to make donation in coin, or furnish an original paper." A pamphlet from M. Charles Lucas, of Paris, has been received by the library, describing his visit to the Conference of Architects held in London last year; together with a critical review of the last two published volumes of transactions 1882-83, and 1883-84, and other matter relating to architecture in England, all of which were regarded as highly and sincerely complimentary to the Institute. The Institute is, beyond question, one of honorable reputation and high influence, yet the report continues: "Professor Kerr, *Fellow*, in accordance with former notice, submitted proposals for higher operations by the Institute, and suggesting four standing committees on Art, Science, Literature, and Practice." He also read papers prepared by him, reviewing the subject-matter of his suggestions, using in part the following language:—

In the stately language of our Charter of Incorporation, there is assigned to us a primary duty;—"the advancement of *Civil Architecture*, as an art esteemed and encouraged in all enlightened nations; everything short of this supreme purpose is but the inconsiderable commonplace of daily maintenance, the narrow things of the house." "The academical work of the Institute may be thus qualified: (1) *Architectural Art*, the province of taste; (2) *Architectural Science*, the natural philosophy of building; (3) *Architectural Literature*, past and present, and (4) *Architectural Practice*." A gold medal was presented to Dr. Schlie-mann, who had traveled from Athens to receive it. An appropriate presentation speech was made by the president, in which the passage occurs, "The Medal which I have the honor of presenting to you this evening, is the highest distinction in the power of the Royal Institute of British Architects to bestow. It is given by our patron, the Queen, but Her Majesty intrusts to us the task, somewhat a difficult one, of deciding, subject to the Queen's final approval on the most worthy to receive it." The presentation was followed by an appreciative reply from the recipient. Other Medal presentations were made to distinguished gentlemen.

The report of proceedings throughout, exhibit an advanced condition of affairs in the Architectural profession of England, with still higher aspirations and purposes for the future. And while we regret that the fraternity of Architects in the United States have not been able to organize an Institute of like excellence, we congratulate our British brethren upon their success, hoping that they may attain to the highest possibilities, and reach an

eminence in the advancements of the age, co-equal with the magnitude and grandeur of the profession so dear to every high-minded and honorable member of the Architectural profession.

Compensation for Bids.

OF late there has been much discussion among reliable and responsible contractors as to a system of remuneration for time consumed in figuring on work. It is claimed by some that a great deal of time is lost in figuring on buildings the erection of which is only in the mind of the schemer. It is proposed that the leading contractors form an association and decide upon means of securing pay for figure labor as it is claimed that the contractors have as much right to emolument for their paper work as the architect. They claim it takes time, study, and brains to qualify a person for such work, and why not receive a recompense therefor. Several ideas have been advanced on the subject among them one "that all figures on buildings to cost above a set amount be paid for only to the unsuccessful competitors, the successful one having his remuneration included in the contract awarded him." The writer claims that by such a course architects would be more careful in selecting bidders of acknowledged ability and responsibility and irresponsible men could not send in bids for the paltry amount paid for the work as it would require a bond with every bid. This would be a fair way it seems, and as the owner from the mere fact of his asking for bids, expects to be benefited thereby, it is no more than fair that he should pay for such benefit. Discussion upon this subject through these columns is invited.—*Northwestern Architect and Improvement Record*.

Can We Build Cheaply Now?

THIS question is asked a thousand times every day, be the conditions what they may. "Cheap" is the first and all-absorbing idea with three-fourths of those who contemplate building, not that they really want "cheap" constructions, for "cheap," i. e., low cost buildings, are poor investments. The import of the question means and implies more than this,—whether good, substantial houses can be erected at about, or for a little less than actual cost of the materials and labor employed in their construction. A proposition of the kind is certainly unreasonable, yet the *delusion of its possibilities* influences many owners, who disregard every other consideration, and fail to realize the equities that should exist between owners, and those who build for them. At present, however, there is nothing used in connection with house building that is not sufficiently low to satisfy any reasonable person, and induce all who desire to, to proceed with their improvements. Lumber is far below the prices ruling one year ago, although a little advanced on the rates of the recent past. Bricks are much less than the prices at

which they have been held during the past three or four years, while the great influx of carpenters to this city has made the supply vastly greater than the demand, with the consequent result of wages, less than has ruled since 1880. The cost of hardware, cements, and building materials generally is moderate—much less than in recent, former years; and with the vigorous competitions that rule among the building classes, those who desire to improve their real estate, may feel assured that they will run no risk in commencing operations under the present state of things.

Improvements for Plumbers.

THERE now seems to be some prospect for the master plumbers of the country gaining a point they have long been striving for,—that of making plumbing a separate and independent part of a general contract in the construction of buildings. The question was presented to the Architectural Association of Minnesota by the master plumbers of St. Paul and Minneapolis at one of its meetings last winter, upon which favorable action was taken, and now we see the same course is being pursued by the associations of other States and by the different chapters of the American Institute of Architects. Surely these requests are reasonable and if universally adopted, as they should be, they would eventually be the means of getting rid of the skin plumber. In the present state of affairs it is simply impossible to procure a decent job of plumbing. The general contractor lets the work to whom he chooses, and generally the lowest bidder gets it, no matter what his reputation or standing, or how his work on previous contracts was performed. If there is an opportunity for the contractor to get ahead a few dollars, anything goes. The honorable and creditable plumbers who render full value for money received, and will not undertake to

do work at prices where they cannot afford to employ good help, are hampered at every turn by these "skins" who are always as ready to put in a water-closet or set up a hot water tank as to patch a boiler, mend a key, or sell a piece of sheet iron. They are men that can do anything, in their mind, but really nothing as it should be. Is it reasonable to suppose that a job of plumbing can be done as it should be, for \$500, when five or six first-class men say it will cost \$900 or \$1,000? No one can expect that the work will be properly done under such circumstances, and when sickness or death of occupants leads to the discovery of the defects, the plumber is cursed far and wide—for they are all common botches to the one who has suffered. Such tremendous cutting in prices means inferior work and there is nothing else to it. The sooner the old system is abolished of letting contracts to men who know nothing about the work that is to be performed, and care less, the sooner these dishonest practices in plumbing will cease.—*Northwestern Architect and Improvement Record*.

Clay Pipes and Ornamentals.

THE "iron stone" "vitrified" clay pipe, at present so universally in use for sewer purposes, is beyond question the most lasting and practical of all devices in that connection, as it can be moulded into any desired shape or form, suitable for any application, and in duration is without limit or number of years, centuries proving insufficient to mark the impress of decay, when not subjected to special destructive agencies, not found in connection with sewers.

Clay ornamentals and utilities, doubtless cruder in design than those of the present day, are of antiquity far back of the founding of many of the civilized nations of the world; said to be as old in China as 2599 B. C. "The invention of pottery dates from the most remote period, and its application is almost universal—objects of pottery being in use amongst races semi-barbarous. The art of moulding or fashioning vessels of moist clay, and subsequently drying them in the sun, is so obvious that it is not above the intelligence of the sudden savage" to give it form and shape, even sometimes that of supposed deities, before which to do homage after their heathen idea of worship. History furnishes a multitude of interesting facts in regard to the manipulations of clay through past centuries, but our object is not to repeat the earlier and evolving facts, but those relating to the manufacture and uses of the

CLAY ORNAMENTATIONS OF THE PRESENT.

There has been a vast amount of skill and handy workmanship developed in the production of ornaments for building and endless other purposes; and the recent past and present taste and demand are for the application of the rich and sometimes beautiful specimens wrought out in clay, many of which are as regular and clear cut as though of softer material, shaped by the keen edge of the carver's chisel. It is also a pleasing fact to know that California produces some most excellent qualities of the crude material, and that the California manufacturers are equal to those of the older States, and are furnishing everything desired, which can be made of clay. The fronts of many buildings, enriched by clay, or terra cotta devices, are to be seen in San Francisco and other cities, and the disposition seems to be to make the use of this material more general. It is well adapted in every practical sense, where elaborations are desired, and the cost and expense is much less than stone, which serves no better purpose.

The Artisan, or Practical Methods That May Be Applied to Works of Building and Other Constructions. New edition of 1885. Among the practical ideas in this work will be found the utility of the right angle, and its application in solving many useful problems. By means of a right angle the exact circumference of a circle is determined at once. It also shows a simple and correct method for the measurement of boards, floors, and other surfaces. It is applied to lines of any length, and divides them into equal parts. It gives the cuts and lengths of rafters, braces, and other timbers in framing. There can be no doubt as to the value of a right angle and its utility in this connection. It is clearly illustrated in the framing square, a tool which solves nearly every problem in practical geometry. Price, Five Dollars.

Afraid of Plumbing Work.

THE necessity of perfect work in this branch of mechanism is universally admitted; and when thinking, intelligent people begin the work of preparation for building, among the first thoughts suggested is good plumbing work. With many, there is a sort of "holy horror" connected with placing even the best improved sanitary plumbing fixtures within the walls of the building contemplated, and some are so firm in their resolves upon this point that no advice or persuasion from architects or others is sufficient to change the determination; nor is it always a mere notion with such persons; those who have had the deep sorrows of sickness, and perhaps death itself among their loved ones, enforced upon them, with well-authenticated proofs that the agency thereof has been defective plumbing work, have sufficient reason to fear and tremble at the sight of that which bears the name of the evil genius that is believed to have done its deadly work; and palliations, theories, persuasions, and arguments fail to remove the dread and fear caused by former experiences. When the mind becomes impressed and impregnated with a conclusion against any one thing, it is difficult to dissipate the impress made, and that which produced the result must forever bear a repugnance, and appear in the light of a treacherous, dangerous enemy.

That such sentiments and aversions should exist is not to be wondered at, but it is a well-known and well-established fact that there is no feature of house construction which so directly connects home-life with the dreaded and to be feared consequences ever and always attending defective plumbing work, and the inlet of sewer vapors to apartments occupied by human kind, especially to rooms where people sleep, in which free and perfect ventilation does not exist. The stealthy midnight robber may carry off precious jewels and valued treasures which may be recovered or replaced in time; but when priceless lives and human health is seized upon by inhalations as gentle, if not so sweet in perfume and action as the sweet zephyrs of spring, yet fatal in consequences, the occasion for fear and caution is at hand; and he who disregards all this, betrays a folly most unwise. The direct application of these thoughts is twofold,—that owners should be exceedingly careful in selecting an architect who, in *real fact*, enjoys a thoroughly practical as well as theoretical understanding of the sciences of the plumbing art, independent of, and equal to the best of practical plumbers; and secondly, not to intrust so important and essential a matter to any living being not beyond all doubt and question fully competent in all respects, practically, and trustworthy, and honest with all; for it may be that a man may *know enough* to enable him to do all that is right, good, and proper, but a deficiency in moral or mechanical *integrity* may outweigh the good, and practically make him a more dangerous man to trust than one of less knowledge and more earnest and careful interest and purpose.

The Best Sash Pulley Made.

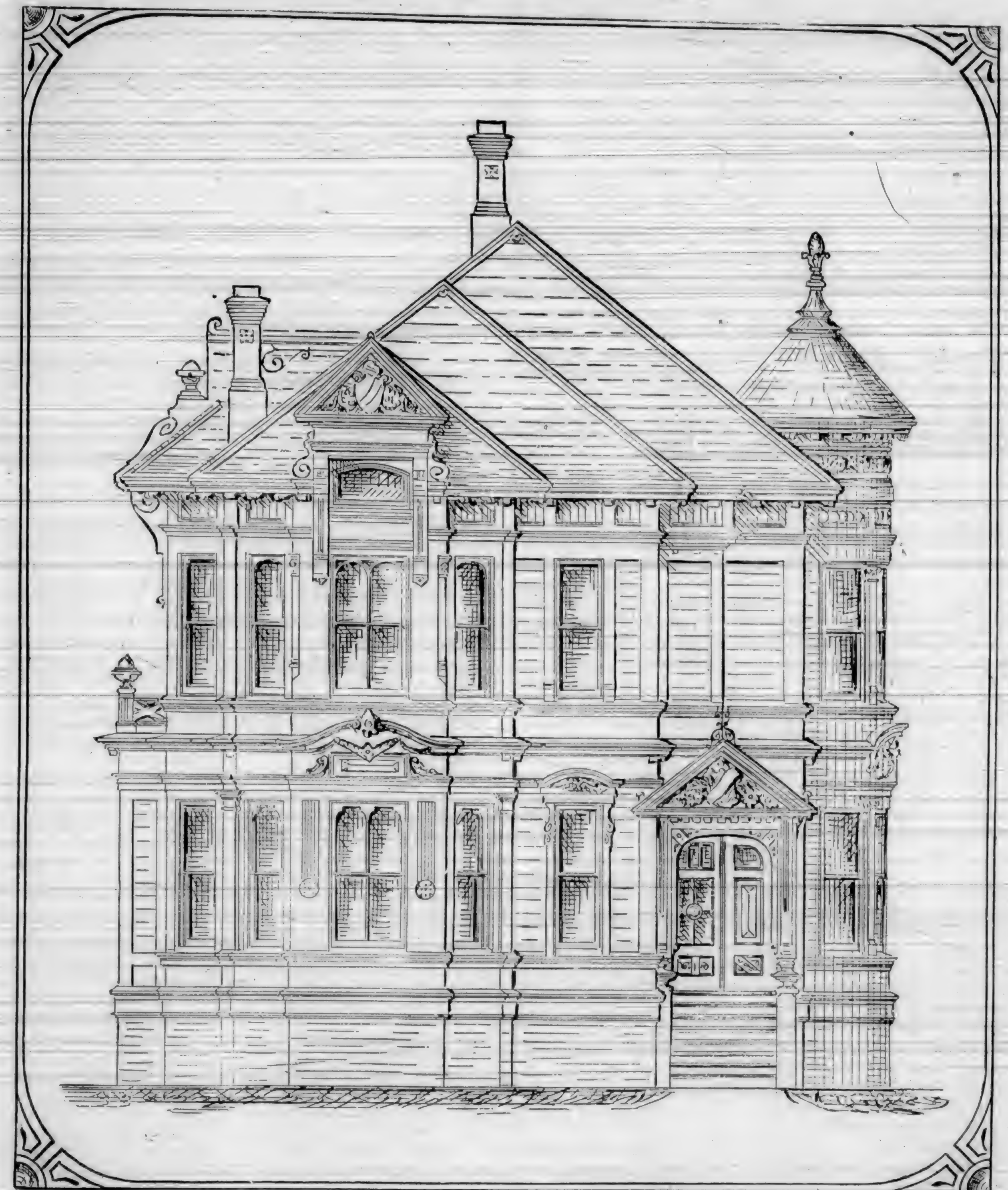
WE have received from C. Sidney Norris & Co., Baltimore, a sample board of sash pulleys, which are the best we have seen, ranging from some very handsome, bronze face plates, down to ordinary iron for general use in the cheaper class houses, but all of the same general construction, which differs from the pulleys in common use, and are much more serviceable.

The motion of the wheels is smooth and noiseless, and the manner of seating the lower end of the shell in the wood, with but one screw in the face plate, gives them great strength. One of the devices contains double pulleys in each shell, to provide for two "chains" or cords in cases of sash with extra heavy plate glass, so that one of the chains breaking, the remaining one would hold the weight of the sash, and prevent a fall damaging too expensive glass; and at the same time, the chains plying over two separate pulleys, make them run easily. They are well worthy the attention of architects and owners; to be seen at the office of this Journal.

MORTAR.—Mortar for sewer works in all cases should be capable of setting in water. Portland cement and lias limes make good hydraulic mortar. The proportions of cement, or of lime to sand, should not exceed two and a half of clean, sharp sand to one by measure of ground Portland cement or lias lime. If clean furnace ashes or slag are available, there may be two of sand and one-half of ashes or slag, the whole to be mixed in a revolving pan, each pan-full to have twenty minutes grinding. When mortar is used with bricks, the beds and joints should be spread thick and full over the entire area of both bed and joint, leaving, when pressed into place, a bed and joint never less than one-eighth of an inch in thickness of mortar. In four cubic yards of completed brickwork there should not be less than one cubic yard of mortar incorporated. In making mortar or concrete, it will be of the utmost importance to use clean materials and to preserve them clean. The water used for wetting bricks and for mixing concrete and mortar must be free from silt. Concrete and mortar should also be used on clean surfaces.—*Sir R. Rawlinson, C. E.*

Eastlake Paint, said to be a great improvement even upon the best lead and oil compounds, guaranteed not to contain gum, rosin, benzine, or turpentine, but to be made of pure lead, zinc, and oil only, with a chemical solution that renders the paint hard and glossy when spread, alike resisting the action of fogs and heat, and free from the oxidation or chalking so commonly the case in California. It is manufactured by the Eastlake Paint Co., San Jose.

If this paint possesses the qualities claimed for it—we know nothing to the contrary—it certainly will be to owners' interest to use it,—first, for its excellence, and secondly, because manufactured in California.



ELEVATION OF COUNTRY DWELLING.—PLATE I.

Tenants Benefited.

As soon as people acquire wealth and are able to reside in dwellings of their own choosing, they immediately develop a surprising interest in "dwellings for the poor," and the sanitary papers, as well as the daily press, are made to do duty in describing the unsanitary conditions in which such a large proportion of the population live. Heretofore, the poor have been benefited, silently, by all the philanthropy which has been bestowed upon them by sympathetic societies. Up to the present time there has been no one so rash as to defend the conditions which are so threatening to the continued low death-rate of our various countries, Scotland in particular.

The enterprise of a London illustrated journal has led it to send an article to depict the mode of life of the crofters in Scotland. The pictures and accompanying letter-press represent the dwellings of the crofters to be of the most primitive construction, being little better than rude huts, having no light or ventilation save through an aperture at the top, through which the smoke escapes. The evils which must advert the dwellers in these huts is graphically described. To this attack, strange as it may seem, there arises a defender. "A Highlander, born and reared in one of these 'bothies' writes to the London Times that, to the peculiar construction of his boyhood's home, he owes the strong frame and unimpaired health which he enjoys to-day. He states that the ventilation is ample and sufficient, and, furthermore, that the breathing of the smoke from the peat fires, habitually found in the "bothies," renders the system very insusceptible to consumption. This latter statement is supported by the testimony of a prominent physician of Manchester. He states that there is a remarkable immunity from consumption among the Highland people, and he ascribes it largely to the inhalation of peat-smoke, which, he says, contains many ingredients of an antiseptic character, such as tannin, tar, and creosote.

ROMAN TENEMENT HOUSES.—The Romans had to contend with the evils of enormous tenement houses two thousand years ago. Gibbon mentions that Augustus and Nero repeatedly enacted that the height of dwellings within the walls of Rome should not exceed seventy feet from the ground. The space within the Roman walls was necessarily circumscribed. Much of this was occupied by the rich patricians and senators, with their palaces and gardens, so that the body of the Roman people were crowded into high tenements, and the different floors and apartments were divided among several families of plebeians, who suffered consequently in health and comfort. Juvenal, recognizing the unfortunate condition of the poor in this respect, advised them to leave the city and seek homes in the small towns.—*Exchange.*

Treads and Risers..... \$.50

AROUND THE HOUSE.

The Exciting Rage for Aesthetic Jimeracks. And What There Is to Gratify It.

THE collection of aesthetic ornaments of bric-a-brac, etc., is, with many, a question of arithmetic. The question is mainly one of ability to buy and a space to display; the intrinsic worth of many of the specimens is slight, and it must be owned that the taste exhibited is abnormal.

Bric-a-brac ornaments, to deserve a conspicuous place in a room, should possess one or more of these attributes of excellence:—

1. Historical, representing an interesting phase of art in an earlier period.
2. Artistic, being in their design and execution conformable to the standards of artistic truth and beauty.
3. Social, calling to mind an earlier phase of social life and custom.
4. Personal, association with noted persons, or personal friends and relatives.

Any of these give value to such ornaments and justify their use to a certain extent. But they should be few in number and should be judiciously chosen and tastefully arranged.

Among new devices for mantel piece ornaments is a light-house wrought in copper and carefully elaborated in details, which carries two disks on the lantern, one showing the time, the other the days of the month and the moon's changes. Another idea is the mounting of a gold cage and bird over a clock, the bird flapping its wings through a hidden connection with works on the striking of the hours.

Movable Japanese screens have a wooden stand, curved, with two large fancy-colored paper fans fixed out at the top, folding up and pointing downward at the sides. These move up by means of a spring, meet in the middle, and form a large circle.

A clever conceit is a card-receiver of hammered copper in the shape of a large grape leaf. Ornaments of lizards, beetles, and queer-looking bugs are used.

A very clever plaque is of royal copper metal, with lapped edges and hammered. The center shows a Hungarian scene in gold and silver effects.

A drawing-room mirror, made in the shape of a fan and mounted in bronze or silver, is a very pleasing novelty.

The new metal, royal copper, is now being made up into all kinds of artistic metal goods.

Scorpions, snakes, and lizards are the latest French rage in metal goods ornamentations.

Parties when asked what they would charge to furnish corn enough to cover a checker board, placing one kernel on the first block, two on the next, four on the next, and so on, have answered from \$5.00 to \$10.00. Local mathematicians have figured it up and find that it would take 8,680,760,438,824½ bushels, estimating it at 200,000 kernels to a bushel, which at sixty cents per bushel amounts to \$5,208,402,203,294.85.—*Ithaca Journal.*

Decorative Art in Gotham.

IN the new dining-room of Cornelius Vanderbilt's house some remarkable triumphs of the decorator's art are to be seen. There is a reproduction of Gobelin tapestry, which cost Mr. Vanderbilt \$30,000. A portiere which is to hang at the dining-room door is literally a cloth of gold. It measures six feet by four, and hangs upon an oaken bar with rings of gold. To prove that it is a cloth of gold it is only necessary to state that Tiffany & Co., the jewelers, under the direction of an artist, spun from pure gold a thread which composes this hanging, at a cost of \$20,000. Miss Tillinghast, whose work of design and embroidery is at the head of that particular art in this country, and possibly in the world, undertook, with her assistants, the embellishment, with the needle, of this cloth of gold. The picture represents certain scenes of the *Aeneid*. If the hours spent upon it were reckoned by the eight-hours-a-day system, four years and a half would be the result shown of the time consumed.

Rapid Bridge Building.

A BRIDGE of concrete, thirty-three feet in span, and carrying a roadway thirteen feet wide, and capable of supporting safely a load of two hundred tons, was recently built in Switzerland in a single day, under the direction of Professor Tetmaier, of Zurich. According to *Le Génie Civil*, the bridge was a single arch, of segmental profile, rising six feet and a half from springing to crown, and twenty inches thick at the crown, and forty at the springing, with abutments ten feet thick. The concrete used for the arch was composed of one part cement, mixed dry with two parts sand, and the whole then mixed with four parts of gravel, and water enough to cause a light sweating as the concrete set. For the abutments, three parts of sand and seven of gravel were used to one of cement. All the materials were made ready beforehand, and at six o'clock in the morning the construction of the abutments was begun. As soon as these were brought to the proper height, the center was set in place and the arch turned, and tympanum walls built up on each face of the arch, to the level of the roadway. Gravel was then filled in over the arch, between the tympanum walls, to the roadway level, and the bridge was pronounced finished, the whole work having been completed in twelve hours, at a cost of six hundred and four dollars, including the expense of an iron railing on each side. It would have been foolish to permit vehicles to pass over the bridge at once, and two months were allowed for the hardening of the concrete, after which a heavy traffic immediately began, without any apparent injury to the construction.

A chicken with a clipped wing made several ineffectual attempts to fly over a fence. An Irishman, who witnessed the efforts of the "chick," laughingly exclaimed, "Begorra, she has a defective flew."

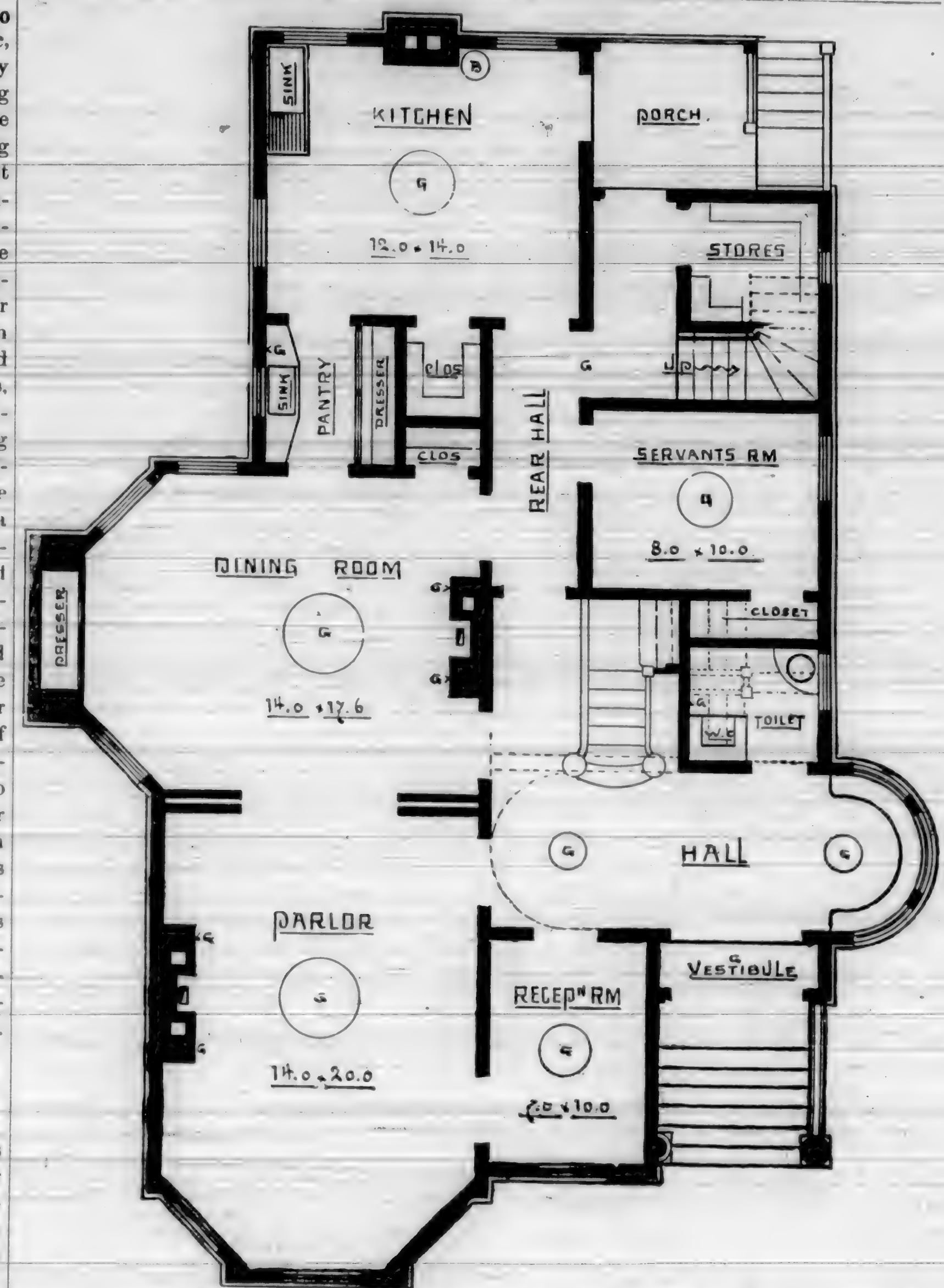
A model architectural competition seems to have been that lately concluded in Leipsic, Germany, for the governmental judiciary buildings or law courts. From an interesting account in the *Leipsic Illustrirte Zeitung* we gather the following: The size of the building is approximately 100 by 130 meters, or about 325 by 422 feet. The programme was complicated and difficult, including session chambers for six or seven different courts, a large assembly hall, rotunda and stairway, reception rooms, consulting rooms, offices, etc., for a great number of chiefs and subordinates in each department, and finally a library to hold 150,000 volumes, with administration rooms, etc. The general conditions of the competition were unusually simple and fair, imposing the least possible restriction upon participants. They prescribed the number and size of drawings for each design and required a descriptive memoir with approximate estimate of cost. The limit of cost was not fixed but was left, very wisely we think, discretionary with the architects themselves. The committee of award consisted of six architects and five members of the judiciary. There was one prize of 8,000 marks, about \$2,000 of our money, two of 4,000 marks each, and two of 2,000 marks each, the premiated designs to belong to the Government. The time allowed to competitors was nearly five months, another judicious feature! One hundred and nineteen designs were received, each embracing not less than ten sheets—nearly twelve hundred drawings in all. All were exhibited for two weeks in the winter garden hall of the Leipsic Crystal Palace, and attracted much public attention, as was natural in so important a competition, and with such a cultured community. —*Inland Architect and Builder.*

Corrugated Iron.

THIS is a material largely used for various purposes, and is well adapted, among other things, for roofing. We notice that the *Cincinnati Corrugating Company*, for which C. J. Tallon, 123 California Street, is agent, have received the "Gold Medal of the First Class," for corrugated iron for building purposes, at the World's Industrial and Cotton Centennial Exposition at New Orleans.

Corrugated iron is often used in the construction of certain classes of buildings, and is admirably adapted for barns, grain warehouses, and other buildings erected on farms and in places remote from fire-engine protection; also in the construction of light way walls, to make them comply with the requirements of fire ordinances, where brick is not feasible or possible. The lightness of walls constructed of this iron is also a recommendation, as it affords protection against fire, without bulk or great weight.

THE signs "+" and "-" it is said, were first used by Christopher Rudolph about 1524. The sign "=" was first employed by Robert Recorde in 1557. "Because," said he, "noe 2 thynges can be moare equalle."



FIRST FLOOR PLAN OF COUNTRY DWELLING.—PLATE 2.

Ancient Reservoirs.

THE reservoirs of the ancients were not inferior to those of the present time. The expertness of the ancient engineers is attested by the remains extant; they certainly are not buried in the waters of the Lethe. The Pools of Solomon still continue to furnish water to Jerusalem. They are three in number. The upper is 160 feet above the middle one, the latter 248 feet above the lower. The first was supplied by pipes from springs, and, when full, emptied into the second, and that into the lower one. The water was used for irrigating Solomon's gardens and supplying his temple. The lower pool held about 31,442,425 gallons, the middle about 12,289,912, and the upper one contained 13,778,772—a grand total of 58,511,109 gallons, or nearly six times as much as the Kansas City

reservoir, which is estimated at 10,000,000 gallons. These pools were solid rock and masonry, lined with cement, and had steps leading to the bottom. One historian says that Nebuchadnezzar, wishing to brick the bottom of the Euphrates, which flowed through the center of Babylon, caused a reservoir forty miles square to be dug, so as to allow his masons a dry river-bed. Another historian writes that Nitocris, a daughter of Nebuchadnezzar, is said to have dug a reservoir 420 stadia in circumference, lined with stone, for the waters of the Euphrates, in order that the river-bed at Babylon should be dry, so that she could build piers for a bridge. A stadium being 625 feet, it would make this circumference 40 miles. These two reservoirs may be the same, and this shows what discrepancies there are among writers.—*Building and Engineering Times.*

An Architect's Suit Decided.

IN the Second District Court, Judge Henry has filed a written opinion in the case of Charles D. Marvin against Dr. Clarence W. Butler and wife. The case was tried in March last. The facts were, that the defendants employed the plaintiff, a New York architect, to prepare plans and specifications for a dwelling-house, to be erected on Fullerton avenue, Montclair. After the plans and specifications were drawn and the contractor's bids submitted, the defendants refused to accept the plans and thereupon the architect demanded the usual commission for his services, on which, being refused, he brought suit. The defence, interposed by the defendants was two-fold; first, that the plans called for a building which, if erected, would project beyond the defendant's lot a few inches; second, that the lowest bid of any contractor exceeded the stated amount the defendants wished to spend on the building. In reply, the plaintiff proved that the measurements of the lot were furnished by Dr. Butler, and therefore the error had been occasioned by the defendant's mistake, and that the changes in the original plans, made at the request of the defendants, had occasioned the increased cost. Judge Henry, after hearing A. E. Van Giesen for the defendants, and E. A. Rayner for the plaintiff, in a lengthy opinion reviewing both the law and the facts, holds that the plaintiff is entitled to recover a reasonable compensation for his services in preparing the plans, etc, and gave judgment in his favor.—*Building.*

Disinfectants.

It is often asked what is the best disinfectant for a cesspool? Two pounds of copperas, or sulphate of iron, dissolved in a pail of water, will greatly assist in purifying a privy or cesspool. A pound of nitrate of lead dissolved in the same way is excellent for sinks, drains, or vaults. Chloride of lime is also effectual, or a layer of charcoal dust will prevent offensive odors arising from any decomposing substance. The quantity of these substances will depend upon the amount of filth to be deodorized, and the length of time during which they will be effectual will depend upon local conditions.

THE JAPANESE HAND-SAWS cut on the pull stroke; so no matter how hard the wood or dull the saw, they will not bend or buckle. It is rather more difficult to saw to line with such saws than with ours, but they have their advantages. Take one of our key-hole or compass saws, cutting on the push or shove stroke—what an aggravating, limber thing it is. Now point the teeth the other way, and you will have a tool that will keep stiff no matter how many knots it encounters or how dull it gets. In other words, the pull stroke of 3,000 years ago is the best for such thin, narrow blades.

Stair Building Made Easy \$1.00

New Law in Tax Titles—No More Extortion.

ONE very important amendment was made by the last Legislature in relation to the issuing of deeds on a sale of property for delinquent taxes:—

"It is now provided that the purchaser of property sold for delinquent taxes, or his assignee, must, thirty days previous to the expiration of the time for the redemption, or thirty days before he applies for a deed, serve upon the owner of the property purchased, or upon the person occupying the property if said property is occupied, a written notice, stating that said property, or a portion thereof, has been sold for delinquent taxes; giving written notice of the date of sale, the amount of property sold, the amount for which it was sold, the amount then due, and the time when the right of redemption will expire, or when the purchaser will apply for a deed. The new amendments provide that the owner of the property shall have the right of redemption indefinitely until such notice shall have been given and said deed applied for, upon the payment of fees, percentage, penalties, and costs required by law. If the property sold is unoccupied, it is then provided that a similar notice shall be posted in a conspicuous place upon the property, at least thirty days before the expiration of the time for redemption, that is, thirty days before the purchaser applies for a deed. It is further provided that the Tax Collector shall not issue a deed to the tax-title purchaser until such purchaser shall have filed an affidavit with the Tax Collector showing that the notice required to be given has been in fact given as required. This affidavit must be filed and preserved by the Tax Collector as other papers are kept in his office. These new amendments will prevent tax-title extortion. Heretofore, when the time of redemption ran out—in one year from date of tax sale—some tax-title buyers asked \$250 for a tax title that cost them \$15 to \$25. Many owners' property was sold for taxes because of their ignorance that the taxes were delinquent. The tax-title buyers will now be compelled to give delinquents notice before they can get tax deeds."

TO MAKE WATCH HANDS RED.—Mix to a paste, over a lamp, one ounce of carmine, one ounce chloride of silver, and a half ounce tinner's japan. Put some of the paste on the hands, and lay them face upwards on a sheet of copper, holding it over a spirit lamp until the desired color appears on them.

ONYX.—Onyx is deservedly a favorite for table tops. Its semi-translucency, with dappled shades from saffron to white, delicate tinge of green and grain formed of wavy lines render it peculiarly attractive.

All varnishes crack from the surface, and paint cracks from the bottom. The presence of ammonia in the atmosphere is the greatest enemy to varnish, as it weakens the cohesion between the oil and gum.

The Safety of Cast-Iron Columns.

THE safety of cast-iron columns in case of fire, as compared with columns of wrought iron, or pillars of stone, brick, or cement concrete, has been the subject of investigation by Professor Bauschinger, of Munich. It will be remembered that the Berlin police authorities, in consequence of unfavorable experiences with cast-iron columns in recent fires at Berlin, issued regulations forbidding the use of such supports in the construction of dwelling houses, but permitting the employment of columns of wrought iron and clinkers in cement mortar. Cast-iron columns may only be employed if they are surrounded with immovable mantels of wrought iron separated from them by an air space. Professor Bauschinger heated cast and wrought-iron columns weighted with burdens usually imposed in structures first to 300°, next to 600°, and finally to red heat, and suddenly cooling them afterwards by a jet of cold water, as applied in extinguishing fires. The experiments demonstrated that cast-iron columns, although they were bent by red heat, and showed transverse cracks when water was applied, supported the weight imposed upon them, whilst wrought-iron columns were bent before arriving at a state of red heat, and were so much distorted by the application of water that a straightening was out of the question. In reality they would have collapsed under the weight they had to support. Professor Bauschinger concludes from his experiments that cast-iron columns, notwithstanding cracks and bends, would continue to support the weights imposed upon them, whilst wrought-iron columns would not. In examining pillars of stone, brick, and cement concrete, the latter prove to be the best. Concrete pillars withstood the action of fire for from one to three hours; those of ordinary brick, as well as those of clinkers set in cement mortar, displayed great resistance; whilst natural stone—granite, limestone, and sandstone—were not fire-proof.—*Illustrated Carpenter and Builder.*

The oftener carpets are shaken, the longer they wear. The dirt that collects under them grinds out the threads. Do not sweep carpets oftener than is necessary. A broom, wears them very much. When a carpet is faded, strong salt and water will often restore the brightness of the color.

George H. Fuller, manufacturer of and dealer in all kinds of office, school, church, and lodge furniture, and fine cabinet work, has removed from New Montgomery Street to 638 and 640 Mission Street. Those desiring things in his line, may rely upon square and honorable dealings and good work, whether under personal arrangements or by orders from sections outside of San Francisco.

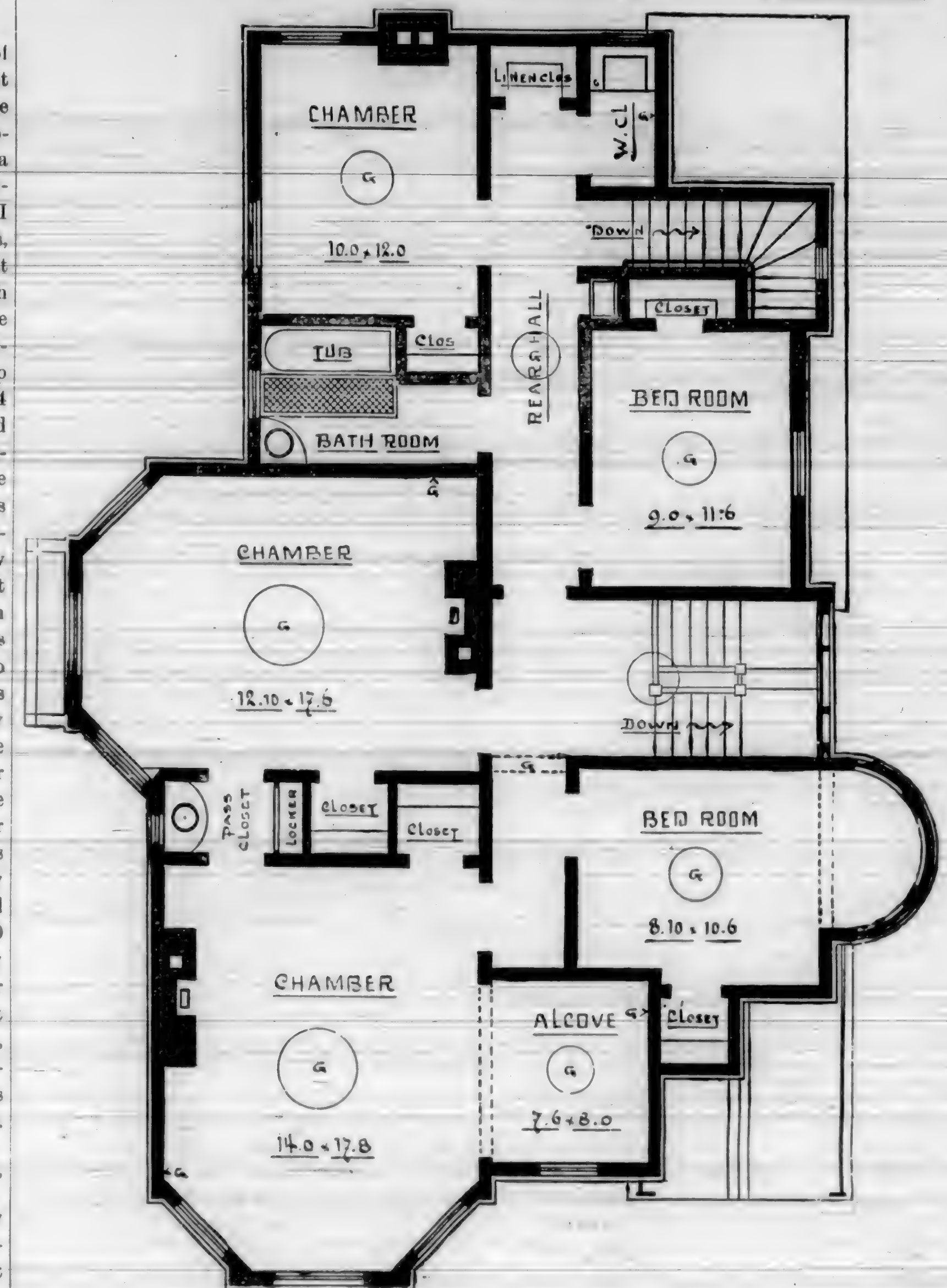
To remove varnish without injuring paint. Brush on spirits of ammonia or hartshorn, which soon softens the oil, allowing of its being rubbed off easily.

Going Up-Stairs.

MANY persons complain of the fatigue of mounting long flights of steps, and feel that they are failing before their time. There need be no anxiety on this score. Going up-stairs is simply performing so much work in a given time. Mr. G. Farmer, who has investigated this subject, says: "Just for curiosity I sent my assistant, who weighed 152 pounds, to climb the stairs at the Forty-second Street Station, to note the time in seconds which was required to climb them leisurely. He counted the stairs, 36, and it took him 34 seconds to climb them. The rise of each step was 8 inches; total rise, $8 \times 36 = 288$ inches = 24 feet. Now, his weight, 152 pounds, multiplied by the total rise, 288 inches = 43,776 inch-pounds = 3,648 foot-pounds of work done in 34 seconds. Now, one horse-power does 550 foot-pounds in one second, and in 34 seconds will do $34 \times 550 = 18,750$ foot-pounds; now divide 3,648 by 18,750, and we get 195, almost 1-5th of a horse power, which this young man exerted while he was climbing these stairs leisurely. He said he usually went up two steps at a time when in haste. Now let us compare this work with that done ordinarily while walking on level ground. His average step when walking rapidly would be not far from 26 inches, and the distance from the ground to the thigh-joint would be not far from 33 inches; thus at every step he lifts his center of gravity $2\frac{2}{3}$ inches—all, or nearly all, his weight above the knees will be raised $2\frac{2}{3}$ inches at every step. Assume that 130 pounds would be lifted $2\frac{2}{3}$ inches at every step, this would equal 341 inch-pounds per step. Now, divide 43,776 by 341, and we get 128.4 steps, which multiplied by 26 inches, gives us 3,338.4 inches = 278 1-5 feet as the distance he would have to travel in 34 seconds to do work equivalent to climbing those stairs. 287.2×3.600

"This is $\frac{34 \times 5.280}{3.600} = 5.58$ miles per hour, which I think is an under estimate. How few invalids—ay, how few tired persons could maintain this pace even for half a minute without great fatigue!"—*Exchange.*

Hereafter the highest building in New York must not exceed an altitude of eighty feet. The law does not, however, prohibit the erection of giant office buildings or great business structures. This may be well, as the convenience of business may require the concentration of offices on a small area, but we feel that the law is an excellent one as applied to the residential portions of the city. With our elevated roads and the probable progress that will be made in rapid transit, there is no occasion for the immense apartment houses that have been built in the last few years. Should the city's population continue to increase as it has done, spread it out over the 23d and 24th wards and lower Westchester, and better and healthier homes will be provided for the people, and it will be far more equitable as regards the rights of adjacent owners.—*Building.*



SECOND FLOOR PLAN OF COUNTRY DWELLING.—PLATE 3.

Next to a good house nothing is more desirable than a good side-walk, but the one is not always accompanied by the other, and hence the incongruity. A bad side-walk is not altogether the result of individual negligence, since the municipal authorities are supposed to have jurisdiction over them, but at the same time property owners should not consider themselves freed from all responsibility. It is no uncommon thing in any large city, to see a house and grounds magnificently appointed and well kept, while the approaches are in a state of extreme dilapidation.

Why are so many houses, especially farm houses, in the United States painted white? A neat white house surrounded by green trees and shrubbery, is often a very pleasing object in

the landscape, but a grim rectangular structure, standing unrelieved as many houses do, receives a glaring addition to its ugliness by the coat of white paint which covers it. Neutral colors are rarely offensive, and easily obtained. Only conservative inclinations cause the present style, and in this matter good taste should not be influenced by bad example.

A metal that expands in cooling is made of lead, nine parts; antimony, two parts; bismuth, one part. This alloy can be advantageously used to fill small holes and defects in iron castings.

Art and Science of Stair Building \$1.00
Architectural Perspective 3.50
Leffell's House Plans 2.50

How Mosaic Work Is Made.

ONE of the few industries of Rome is the manufacture of mosaic, the largest establishment being under the control of the church, and employed almost entirely in the adornment of the churches and religious establishments. The process of making a picture in mosaic is very slow, and requires the highest order of skill. To begin with, mosaic is made of glass, and its value consists in being indestructible. The workmen in great pictures, have to have something over twenty-six thousand shades of colored glass to produce the tints requisite, as in a mosaic every color is necessary, the same as in oil painting. To make a picture the process is this: A plate of metal of required size is surrounded by a raised margin an inch in height. A plastic cement of powdered stone, lime, and linseed oil is spread over the bottom of the plate, and that covered with plaster of paris to the level of the rim. Upon this the picture to be made is very carefully drawn, and the mechanic's work begins. He takes a piece of glass of the exact tint necessary, and fits it to its place, grinding it to get the shape. Then he goes on one piece at a time, till the picture is finished; then the face is ground down to a smoothness, and the picture set in its place. Some of the greatest pictures of ancient and modern times are in mosaic, the tints, with all the delicate shades, being as carefully reproduced as in oil, and the effect being even greater. The ceilings of many of the great churches are entirely of mosaic as well as many of the altar pieces and other decorations. As they are entirely indestructible, and never lose their color, they are very much prized. A picture in mosaic costs, but then it is eternal, barring fire and earthquakes. All over Rome there are small shops devoted to the manufacture of mosaic table tops, box covers, etc., the workman toiling all his life on one subject. The man who begins on St. Peter on table tops, or the Coliseum, never does any other subject, and he becomes so skillful in this one subject that he is enabled to make them not only well but cheap. He has only the tints to manage that enter into the one picture, and he places them mechanically and very rapidly.

Plumbers' Association.

THERE are some excellent provisions in the code which govern the Philadelphia Master Plumbers' Association, and new associations cannot do better than to follow it closely in the preparation of their constitution and by-laws, and established associations might take some hints for revision from it. The sanitary committee, which consists of ten members, has entire charge of all sanitary matters pertaining to the trade. They are given power to form themselves into a sanitary plumbers' club. This is the origin of the club, which has already been referred to in these columns. The object is mutual benefit and the discussion of improvements in sanitary plumbing.

This committee has power to add to its number, from members of the association, and to invite well-known sanitary experts to attend its meetings. One of the objects of the association was to establish a plumbers' trade school. For this purpose, a trade school committee was provided, consisting of twelve members, who were given power to elect their own officers, and conduct the affairs of the school, subject to the approval of the board of directors. The good results of the trade schools are already being felt. The plumbers elsewhere should not fall behind in this important matter.—*Sanitary News.*

Improved Tenements in New York.

IN New York, a company has been incorporated with a capital stock of \$150,000, divided into shares of \$25 each, for the purpose of building tenement houses of a superior quality. The president of the company is Mr. Joseph M. Drexel, and Mr. Oswald Ottendorfer is vice-president. The plan, which is one that has been tried successfully in France, is to provide tenements which shall be healthful, and otherwise desirable, at the same prices as are now charged for the miserable quarters, in which so many are compelled to live—\$8 to \$14 a month. The company expects to get a net income of at least 7 per cent. on the investment, and 4 per cent. will be set apart to pay dividends on the shares, the remainder being accumulated as a reserve fund to protect the shareholders; for the benefit of the tenant, who will be credited with interest in proportion to the rent paid by them. These credits the tenant can apply to the payment of rent whenever, "by illness, age, lack of employment, or other good cause, he shall be unable to provide for himself or family." Any tenant can become a shareholder, and the plan is no doubt a good one and deserves the attention of capitalists in all our large cities. A large part of the shares have been taken, and a building site has been selected.

Brick Wall Discoloration.

A CORRESPONDENT in the *American Architect*, in answer to a writer who took the view that the discoloration of brick walls was caused by bricks being burned with coal, says that the whiteness appears equally on bricks burned with wood, and where, in the manufacture, no coal dust is used, and that from time immemorial bricks have thus appeared white. "They were so seen in Boston a century before coal was used, or much known as a fuel by its inhabitants. I assume that, even now, the use of coal dust in the manufacture of bricks is simply local, and an exception to the rule, and in most country places it probably never will be used; yet in special examples of bricks made thus the whiteness appears all the same." He further adds that soda in one of its forms is the cause, and that simple water dissolves it; and that "linseed oil as a coating is an excellent treatment but

the best success has been attained where dilute muriatic acid has cleansed the pores in the bricks, and thus permitted the oil to further penetrate." Speaking of kerosene oil, he said: "This material penetrates the brick to a depth of about a half-inch, where they are of an average hardness, and dissolves the soda, but the oil, lacking the body that linseed oil has, affords much less protection, from the atmosphere, and has proved to be of only temporary value."—*Brick Tile and Metal Review.*

Whims in Building.

NOTHING adds so much, says the *Studio*, to the cost of building as the indulgence in whims. To set out deliberately to do a "queer," "fanciful," or, as it is sometimes called, "original" thing in building, is always to incur unnecessary expense. If we look through the books that contain pictures of the architecture of all ages and nations, we shall find that, without an exception, in the times all men of taste are agreed in calling the good times, the modes of building have been sensible, founded on the needs of the case, and that whatever may seem fanciful—the whole of what we call picturesque—when its charms have proved enduring, is the result of what we may call, in every case, "accepting the situation." Nothing has been done in such instances for the sake of being picturesque. Good building, good ornament, never poses.

In building, as a rule, every departure from the rectangular form is an added expense. One of the things impressed on the mind of a young man who goes into an architect's office to study the profession is that, if cost is to be considered, which it sometimes is and sometimes is not, all excrescences and projections must be avoided. A rectangular house is the cheapest. Bay windows, porches, octagonal or circular external ends to rooms—all these things cost money; and it is by multiplying these features that the expenses of building are often made so great as to deter people from undertaking it, for the things seem so small in themselves, it is not suspected what drains they are on the purse. If a good reason cannot be given for any so-called ornamental feature in a house, if it cannot be shown that something worth while is to be gained by making it, we may be reasonably sure that it is a fancy which will cost, as the country people say, more than it comes to. And, in the greater number of cases, nothing, even in looks, is gained by indulging the fancy.—*Brick Tile and Metal Review.*

A very complete filling for open cracks in floors may be made by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water, and a tablespoonful of alum, thoroughly boiled and mixed. Make the final mixture about as thick as putty, and it will harden like papier-mache. This mixture may be used for moulds for various purposes.

Correspondence Special.

BALTIMORE, June 20th.

THE architects in this city are enjoying a harvest of prosperity. Buildings are going up in all directions, many of which are elegant and costly. The style of architecture used is imposing and handsome, without excessive elaboration. I am not a competent critic or would give full description; suffice it to say that there is much work going on, and largely of the better kind.

Knowing you to be a Baltimorean, I thought a line or two of this kind might be acceptable, as coming from the place of your birth—your old home. The changes in the general aspect of the city, its extension in all directions beyond the limits which defined its extent thirty years ago, are wonderful. Truly, progression and advancement is plainly developed in the monumental city. The play-grounds, parks, commons, and barren places of former years have disappeared, and are now covered with houses of all kinds, and still the spread is going on, all of which bespeaks work for mechanics.

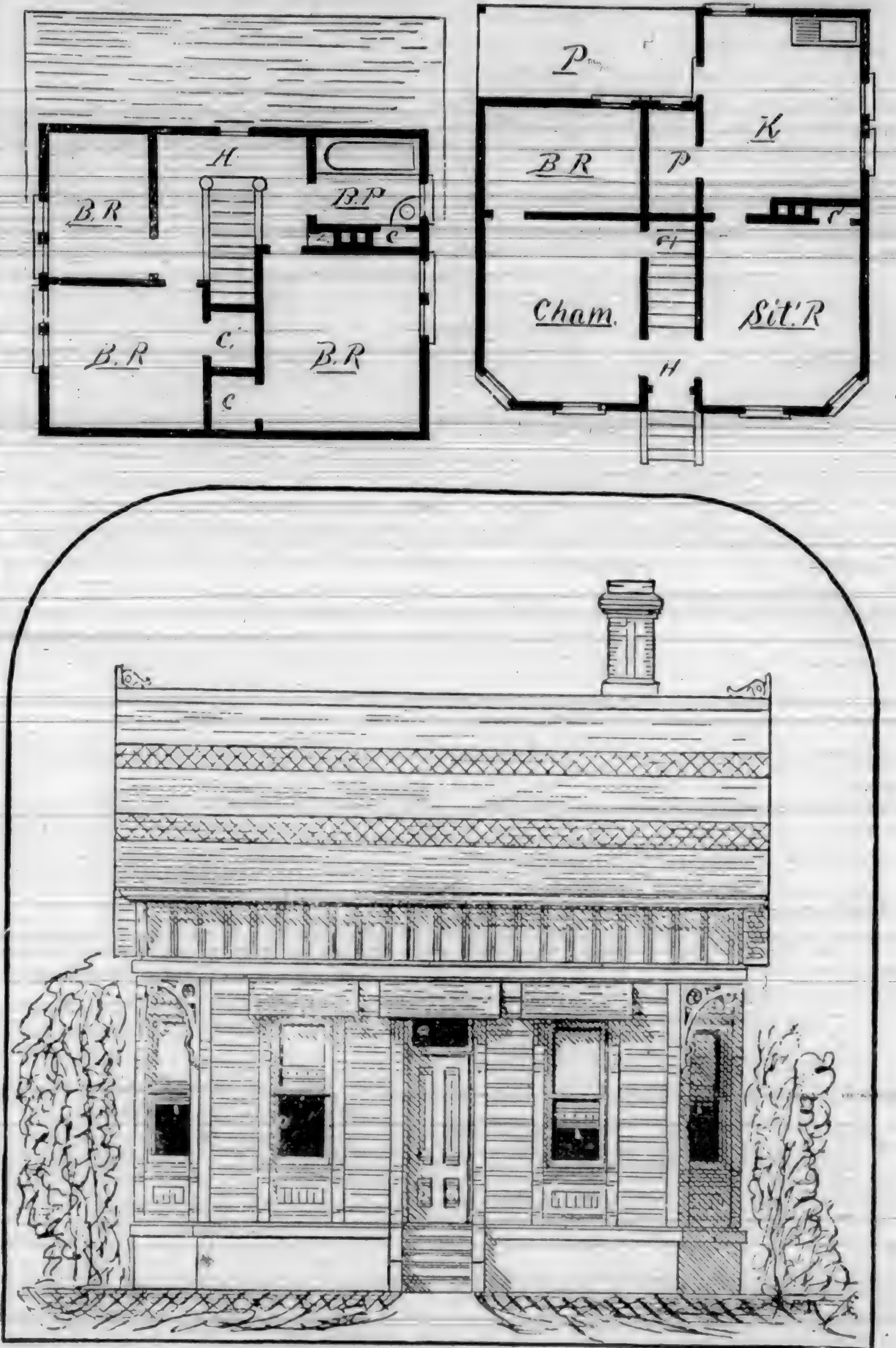
ROBERT.
NEW ORLEANS.

Arrived here all right. Find work very slack. Very little building going on. Journeymen carpenters are working for \$9.00 per week and less, and glad to get work at any price. The mechanics of San Francisco should be happy, as I have not found wages so high anywhere, to say nothing of the loss of time on account of the winter and inclement weather. Men who work for so small wages are, however, able to support their families, and, seemingly, live comfortably. Yours truly,

J. N. D.
SAUCILITO, Cal.

MR. EDITOR: Enjoying the luxury of a week's sojourn at this place, permit me to say a word in its behalf. Nearly all the while that I have been here, the weather has been fine, and generally beautiful. There is a stream of life constantly flowing through this berg, and over the railroad to San Rafael, and intermediate places, upon the arrival of each ferry boat. I am surprised at the number of people who live on these hill-sides; the pleasant weather making it manifest by the number of neatly and bewitchingly tidy dressed ladies to be seen in the pathways, and among the trees; this said—enough; for the sterner sex are never far away, where beauty and innocence is found in such happy forms and characters.

The place is improving, several fine homes being in course of erection or in contemplation. One most handsomely and romantically situated upon the brow of the hill, just above the ferry landing, owned by Mr. W. G. Barrett, is very noticeable, and attracts much attention. The view from all parts of the structure is fine, and from the attic story, unsurpassed, commanding a view of the entire bay, and the long range of hills and valleys up to



ELEVATION OF COUNTRY DWELLING.—PLATE 4.

Mount Tamalpais; and southerly, the northern section of San Francisco from Telegraph Hill to Fort Point. With such a home retreat, an owner may well pray for Sundays and holidays to haste around and tarry long, for if rest and comfort cannot be taken there, then nowhere.

I hear of several projecting building improvements in this locality, and, in time, I think that hundreds will wend their way homeward to this place, and perhaps in still later times, cable roads or some other device will be provided to make access up the steep hill-sides easy.

California as a manufacturing State now ranks as the 25th. There are 1,000 establishments using power. They use 205 water-wheels, of 4,850 horse-power; 990 boilers, 179 engines, with a power of 28,071 horses, making total steam and water-power in horse-powers, 32,921.

NO MORE SKY HIGH BUILDINGS.—Enterprising and speculative owners are now confined by law to a height of eighty feet as the limit of altitude to be applied in the erection of buildings in New York. No more fifteen story traps.

Reflected Sound in Buildings.

VARIOUS instances are given of the mixture of direct and reflected sounds. In the gallery of the Bourse at Paris the confused vociferation of the multitude below is mentioned by Professor Tyndall, who says, "You see all the motions of their lips as well as of their hands and arms; you know they are speaking, but you hear them not. Their voices mix with their echoes into a chaos of noise. It is well known that an audience and furniture both materially deaden the echo. Thus the same authority refers to a lecture delivered in the Senate House of Cambridge, where his voice was not heard at a distant part of the hall. 'The assembled audience, however, so broke up and quenched the sonorous waves, that the echoes were practically absent, and my voice was plainly heard in all parts of the Senate House.'" In St. Alban's Cathedral, the tick of a watch can, it is said, be heard from one end to the other. In Gloucester Cathedral, a gallery of an octagonal form conveys a whisper 75 feet across the nave. The whispering-gallery of St. Paul's is a well-known instance of echoes. The well at Carisbrook Castle in the Isle of Wight, which is 210 feet deep and 12 feet wide, lined with smooth plaster, is a wonderful conveyer of sound; a pin dropped into the well can be distinctly heard. Sound is not only reflected, but is refracted like light, and may be condensed; it can be diffracted or bent round obstacles. Echoes are reflected waves. Echoes may be prevented by cutting off the angles of the room with drapery, by wires stretched across the room to break the waves of sound, and, in fact, by any device which will interrupt the reflection of the sound waves. The method of demonstrating the reflection of sound is by the use of two parabolic reflectors placed opposite each other with their centers in a line; a sounding body is placed in the focus of one of the reflectors, and the sound waves striking the nearest reflector are thrown by reflection to the farthest reflector, and is then concentrated to its own focus, so that an ear placed in this second focus distinctly hears the sound made at the initial point. A vertical wall without break behind the sound and not far removed from its source, resembles a reflector, and is sufficient to cause an echo. Either a recess or a gallery may tend to break this reflection. Unfortunately treatises on sound seldom enter into the question of the means to be taken to remedy echo or promote the transmission of sound in buildings. In large assemblies the principle of the isacoustic curve, one of equal seeing and hearing, appears to give the best results in the arrangement of the seats of the auditors.—*Building News.*

Hand Saws and the Art of Saw Filing. This book gives full information for putting in order all kinds of saws, from a carpenter's panel saw to a steam saw-mill. Illustrated profusely. Price, \$1.00.

Building Superintendence. A new work and one that should be in the hands of every architect, contractor, and student. Price, \$8.00.

Practical Carpentry. As its name indicates, this work presents practical answers to those questions that so frequently vex the mechanic. Price, \$1.00.

Competition for Plans for Public Works.

IN quite a number of towns which need water-supply and sewerage the authorities are trying to shift the responsibility of providing a feasible and proper scheme from their own shoulders to those of engineers and contractors, by calling for plans as well as proposals for construction of works, to be submitted in competition. In some cases a moderate sum is named as the prize to be competed for, and in others the franchise of a company is set up as the reward. This method of obtaining plans is not likely to result in benefit to the public. In the first place, civil engineers of experience in water-works or sewerage designing and construction are not likely to enter into such competitions. Their time is valuable to them, and they cannot afford, nor are they willing, to squander their time in investigating and reporting upon projects on the mere chance of getting a small remuneration, although they might be glad to do the work required with an assurance of the compensation. The bidders in such a case are apt to be either inexperienced young men seeking to get their names before the public, or mere speculative engineers who are working with owners of patent methods. As for giving out contracts for works either of water-supply or sewerage, conditioned only on the execution of a trial test when the works are completed, it is an exceedingly risky and unbusinesslike proceeding. No man or firm can be trusted to do thorough work in these lines without constant supervision and inspection by an expert. It will invariably be found cheaper in the end, for those intending to construct such public works, to secure first a plan and specifications from an experienced civil engineer, and then have the work built under inspection from beginning to end.—*Sanitary Engineer.*

Law in Relation to Newspapers.

1. SUBSCRIBERS who do not give express notice to the contrary are considered as wishing to continue their subscriptions.
2. If the subscribers order the discontinuance of their periodicals, the publishers may continue to send them until all arrears are paid.
3. If subscribers neglect to or refuse to take their periodicals from the office to which they have been directed, they are held responsible till they have settled their bill and ordered their paper discontinued.
4. If subscribers move to other places without informing the publisher, and the papers are sent to the former direction, they are held responsible.
5. The courts have decided that refusing to take periodicals from the office, or removing and leaving them uncalled for, is *prima facie* evidence of intentional fraud.
6. Any person who receives a newspaper and makes use of it, whether he has subscribed for it or not, is held in law a subscriber.
7. The postmaster who neglects to give the legal notice of the neglect of a person to take

from the office the newspapers addressed to him, is liable to the publisher for the subscription price.

Forest Fires.

IF forest fires keep on destroying the woodlands all through the summer at the same rate as they have done during the past month, there is every indication that the loss incurred in this manner by the national resources will throw every other form of fire losses into the shade. The average citizen takes but little interest in the quantity of buildings and manufacturing establishments that are consumed monthly by fire; this is partly due to indifference, and partly to the knowledge that his property is insured; but the interest he takes in forest fires is practically nil. Indeed, what does he care whether thousands and thousands of acres of woods are burned? That does not concern him; it is none of his loss. But when an agitation is instituted against the lumbermen to prevent their cutting the trees—ah—that is something entirely different; that subject is to him about as clear as stove-blackening, but of course he understands it all, and joins heartily in the wholesale condemnation of these horrid lumbermen who want to rob us of our fine forests. As woods are not insured against fires, there is no collection of statistics to show the annual losses, but if they could be obtained we are fully convinced that the total aggregate would be enormous. What are we going to do about it? Let things go as they have gone, without even an attempt to offer some form of check? We have laws, and fortunately they are enforced, to guard against incendiaries, but our forests are considered universal property, and if by accident or carelessness somebody starts a fire, why, they are only trees, such man thinks, and there is no harm done. How many acres of woodlands are burned up during the dry season ignited by sparks from locomotives? How often is a forest fire started because some mighty hunter did not think it worth his while to put his foot on a piece of burning gun wadding? There are dozens and dozens of conditions where a large conflagration could have been prevented by even a very small amount of care, but nobody takes an interest in it. And where is the law that so effectually protects our other property? Why not have it apply to forests as well? They represent money. It seems that a constant agitation of this subject is necessary to insure the amount of attention that must, as a matter of course, precede the institution of any active measures to prevent the constant waste of our forest resources by destructive fires.

Strangers naturally turn to the advertising columns of a newspaper, as they would to a business directory, to ascertain the commercial standing of the place in point of the number and kinds of interests represented, and they turn to the advertisements in a trade paper to see who is wide awake.

The Great Forests of Puget Sound.

IN Western Washington, between the Cascade Range on the east and the Coast or Olympic Range on the west, and between the 47th and 49th degrees of north latitude, is a thickly timbered belt of fir, cedar, alder, maple and other woods. Of these, fir probably represents three-fourths. In the midst of this wealth of forest, nature has placed a broad, deep arm of the Pacific Ocean—Puget Sound—with which it is connected by the Strait of Fuca. Thus not only has nature provided the timber, but the water-way also by which it is possible for the merchant marine of the world to come and obtain their lumber supplies, much of which, some time in the future, must be furnished from these forests. Already the lumber trade with Australia, Central and South America, China, and the islands of the Pacific, amounts to fully 75,000,000 feet a year, and employs a fleet of about 15 vessels every month.

Puget Sound is 200 miles in length, and has a littoral of 1,800 miles. This irregular shore line forms innumerable harbors, splendidly adapted for the erection of saw-mills and other wood-working factories, and also for the establishment of ship-yards. Along this whole shore line, and from thence on both sides as far as the eye reaches, nothing can be seen but the vast and magnificent wealth of timber, save here and there where man has established a mill port, a town, or an occasional farm. In the timber belt of Western Washington there are 20,000,000 acres covered with timber, most of which is included within the limits named—an area nearly equal to the combined areas of the States of Connecticut, Massachusetts, Vermont, and New Hampshire. This timber belt will average 25,000 feet of lumber to the acre, or a total of 500,000,000,000 feet of lumber. Hence the saw-mills of Puget Sound, with their present capacity of 500,000,000 feet a year, would take 1,000 years to cut it down. The fir trees frequently attain the height of 250 feet, and planks of lumber are sometimes turned out of these mills 100 feet long.

Cresote Wood Stains.

SAMUEL CHABOT, JR., No. 70 Kilby Street, Boston, is directing the attention of the trade to cresote wood stains which he is manufacturing. These stains take their name from one of their most important ingredients, namely, cresole or cresote, a well-known preservative of vegetable tissues. It is claimed that this substance unites with the albuminous or sappy part of the wood, which is the first to decay, and forms with it a compound which resists all changes from water or the variations of climate. It also protects the wood against the ravages of insects, notably the white ant of the South. These stains are manufactured in a great variety of colors suitable for exterior use, and their effect upon the shingled villas and cottages now so much

in vogue is picturesque in the extreme. The manufacturer claims for them several important advantages over oil and chemical paints. First is the fact that they are from one-half to one-fifth as expensive as paint. The effect of paint is to form an air-tight screen over all cracks between clap-boards and shingles, sealing them tightly, thus confining moisture under them and sometimes hastening the decay of the wood. It is urged, on the other hand, that cresote stains form no screen, and permit the ready evaporation of any moisture which may come between the pieces. The manufacturer also directs attention to the superiority of stains over paint from an artistic standpoint. He also calls attention to the fact that, stains being in the wood and not on its surface, the color is not liable to discoloration by cracks or peeling off. The stains also have the advantage of bringing out with beautiful effect the natural grain of the wood. The cheapness of these stains, the manufacturer states, combined with their great preserving quality, recommends them for priming wood before painting. Painting can be readily applied over the stains after they have been allowed to dry.

Master Carpenters.

AN article appearing in the June number of this Journal, in reference to the movements of the master carpenters in San Francisco, has attracted considerable notice and comment from Eastern journals. The following from a St. Louis contemporary, who, doubtless, appreciates the facts given in the article referred to, without the courtesy of acknowledgment, publishes the following:—

"The master carpenters of San Francisco have joined together and formed an association, for the better protection of what they honestly believe to be their rights. They consider the practice, prevalent among owners, of buying building material without calling the contractors into the transaction, to be a violation of the spirit of their contract, wherein it is, or should be, understood that the benefits of all discounts on material rightfully belongs to those who have the responsibility of putting it together. A tailor or shoemaker would be greatly astonished by the request of his customer to exercise the privilege of buying the material for a pair of pants or boots, but when lumber, brick, or glass presents such a profitable field for speculation, the love of the owner for the mighty dollar is too strong to allow of technicalities in principle to stand in the way of his saving it. In case of risks or accidents the contractor is generally found to be the under dog in the matter, and is soundly berated if the specifications are not complied with. The 'Baltimore Resolutions' of the plumbers is a model of protection to the interests of the master mechanic, and they are all gradually recognizing the fact that a resolution of some kind will soon become necessary to keep them in fresh bread and butter. The master

carpenters of St. Louis could kick each other awake to many abuses they are subject to, and follow the example of their brethren in San Francisco in resolving what shall be, instead of quietly talking of what should be."

Health Officer Wight, of Detroit, Mich., is making war on the ice-dealers who cut ice below the city, where it is claimed the water is contaminated by the sewerage. He has asked the Common Council to enact an ordinance to prohibit the sale of ice cut below Belle Isle, an island in the Detroit River above the city. The aldermen and councilmen have made the tour of the inlets and bays up and down the river where ice is cut in the winter season, obtained samples of the water for analysis, and propose to co-operate with the health officer if it can be found that his position is tenable. The question has brought up a discussion between the doctors as to whether the water is filled with bacteria, one faction claiming it is not, while the other takes the opposite ground. The ice-dealers, who see a possibility of their winter harvest-ground being cut off, are taking a prominent part in the agitation. Health Officer Wight has also been doing good work in the way of fumigating the sewers, having burned 1,000 pounds of brimstone for this purpose.

Always Pay and Save Money.

THE publisher of the *East Oregonian* had a subscriber who repudiated \$1.56, claimed to be due for the paper. The delinquent was saucy and the newspaper men got upon their mettle and sued the aforesaid delinquent. The case was fought by nine lawyers for the defense and two for the prosecution. The plaintiffs got a verdict for the amount claimed, and the defendant had to foot a cost bill amounting to \$74, besides the fees of nine lawyers. The moral of this case is that those indebted to newspapers for subscription will find it more economical to call and settle than to attempt repudiation.—*Ex.*

THE DECORATOR AND FURNISHER, published in New York, is a most excellent journal, always full of interesting matter and illustrations. Its June number is specially interesting, containing a description of a Long Island home, with illustration views, an exhaustive and pleasantly written description of modern iron work, with general examples, reference to the art work of the Society of Associated Artists, and some admirable designs for ladies' home work, crazy quilts, plaques, etc.; also practical designs for easels, bedsteads, dressing cases, wardrobes, picture frames, sideboards, etc., and much of interest of artistic and Htefary value. Those desiring can order same through this office.

The reel of wire rope for the St. Louis, Cable Road is said to be the largest in the world. It weighs 89,510 pounds, and was shipped from Trenton, N. J., on a car weighing 35,000 pounds on sixteen wheels.

INFLUENCE OF DECAYING WOOD ON HEALTH.

It is generally admitted that the vicinity of large quantities of decaying wood is dangerous to health, but the evidence as to this is scanty, and by no means definite, nor have we anything but more or less probable theories as to how disease is produced in this way. Yellow fever, typhoid fever, and various forms of malarial fever have been attributed to this cause—not that rotting wood is supposed to be alone sufficient to produce them, but that their specific cause seem to flourish and increase when introduced where it is present in large quantities.

It is a fact that, in a number of instances, the prevalence of yellow fever in epidemic form has been connected with the presence of decaying timber in or beneath piers and wharves, or of masses of rotting shavings, chips, sawdust, etc. This was the case in Providence, Baltimore, New York City, and Norfolk, and the presence of rotten timbers or planking in yellow-fever ships has been noted so often that by many it is thought to be something more than a mere coincidence.

Collections of damp and decaying sawdust have been in a number of instances charged with the production of malarial disease, and in some of the Northwestern States, and especially in Michigan, the evils from this cause have been the subject of discussion by sanitary officials.

Decaying wood pavements or sidewalks have been suspected of causing malarial affections in Memphis, in Washington, and elsewhere, although the relation between cause and effect does not seem to have been clearly established.

We do know, however, that green wood contains a very considerable amount of albuminoid matter, which affords food to micro-organisms which decompose it, producing phenomena of putrefaction and giving rise to more or less offensive odors.

Professor Brewer, of New Haven, has reported the results of a number of experiments on the results of soaking green wood of various kinds in cold water, and thus removing the albuminoid matters. That green lumber contains something which greatly favors its decay, and which may be removed by long-continued soaking in water, was well known many years ago, and gave rise to the process of water-seasoning, in which the planks were sunk in large bodies of water and kept immersed for from six months to a year, when they were raised, piled in the air, and thoroughly dried. Flooring lumber thus treated is little liable to decay, for the simple reason that it contains little or nothing that is fit for the food of the micro-organisms and fungi that cause decay. The albuminoid material which may be thus extracted from wood appears to support the life of various micro-organisms which, so far as we know, are not directly or indirectly injurious to health. We can only infer that it will also support the life of other organisms which may be injurious

—the germs of specific disease—and conclude that it is sufficiently probable that this is the case, to warrant the giving special attention to this subject in investigations as to the cause of the local prevalence of certain diseases.—*Sanitary Engineer.*

Trees and Rainfall.

In the official report of the geological survey of Wisconsin is an account of the determinations made by Dr. J. M. Anders, of the amount of water pumped from the earth by trees. He finds that the average exhalation from soft thin-leaved plants in clear weather amounts to about one and a quarter ounces troy, per day of twelve hours, for every square foot of surface. Hence a moderate sized elm raises, and throws off seven and three quarters tons of water per day. In the report the facts are applied to what is going on in America, where certain inland fertile districts are becoming converted into deserts by wholesale clearings, and in other places, such as the plains of Colorado, where five or six years of irrigation and planting have already produced a measurable increase of rainfall. It is maintained that the deserts of Syria and Africa are the results of cutting down trees, and that original luxuriance may be restored by skillful replanting.—*Chicago Times.*

On a recent trial a cedar log twenty feet long was taken to a California match factory, and in exactly twenty minutes was sawed, split, glued, dipped in sulphur, labelled and the matches boxed ready for shipment. [The above is a good story to tell, but if the "log" was more than a few inches square measurement, and twenty feet long, no such feat was ever performed. For the purpose of an item, a piece of 2x6, twenty feet long, might have been called a "log."—ED.]

"EASTLAKE."

Indestructible Gloss Paint.

EASY-WORKING, durable, economical. Especially adapted to the climate of California. This article is a welcome improvement on the pigments employed in modern house painting, and takes precedence of the lead, oil, and turpentine composition at present in use by the paint trade. It is particularly valuable to painters and property owners, who, by securing the SEALED CANS OF EASTLAKE PAINT, have thereby a guarantee that they are having a genuine article, free from adulteration, guaranteed not to contain gum, rosin, benzine, or turpentine, but a compound made of pure lead, zinc, and oil only, with a chemical solution that renders the paint, when spread, HARD AND GLOSSY, alike resisting the action of fog and heat, without oxidizing or chalking, as is so frequently the case in California.

In White and all shades, Sample Color Cards and Price List of which will be furnished on application to Eastlake Paint Co., Oil and Color Grinders, No. 199 South First Street, San Jose, Cal.

MASONS' AND BUILDERS' EXCHANGE OF SAN FRANCISCO

Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

BRADY, O. R., President, 822 Valencia St.	Box 22
BUTLER, THOMAS, 593 Ash Ave.	" 28
BOWERS, T. N., Oakland, 804 Castro St.	" 49
BENDER, JACOB, 1009 Clay St.	" 73
BECK, J., 10 Eleventh St.	" 12
CAIN, R. K., 213 Page St.	" 61
CALVERT, JOHN, 812 Hyde St.	" 16
COX, JOHN, 608 Jones St.	" 2
CRAWFORD, L. E., 129 Oak St.	" 14
DUNBAR, WM., 27 Eleventh St.	" 18
DOWNS, JOHN, 269 Minna St.	" 34
DUNPHY, ED., 1006 Bryant St.	" 20
FERRIS, CRAWFORD, 9 Bourbon St.	" 57
GLYNN, JAS., 432 Clementina St.	" 15
HANAVAN, JOHN H., 1711 Jessie St.	" 60
HOCK, T., 422 Golden Gate Ave.	" 6
HAF, J., 616 Kearny St.	" 13
HIGGINS, ROBERT, 1724 Jessie St.	" 21
HUGHES, JOHN, 310 Seventeenth St.	" 59
JORDAN, D., 911 Webster St.	" 51
KNEEDLER, G. W., 1013 Vallejo St.	" 45
KINCAID, J. E., 2219 Pacific Ave.	" 32
LIEBERT, J. G., Treasurer, 330 Oak St.	" 38
LOANE, F. M., 1512 Golden Gate Ave.	" 26
MCCARTHY, JOHN, 2509 Folsom St.	" 7
MCGOWAN, MATT., 614 Linden Ave.	" 17
MCDERMOTT, JOHN, 124 10th St.	" 33
MCGUIRE, JOHN, 212 Grove St.	" 74
MULCAHY, JAS., 612 Larkin St.	" 33
NAGLE, GEO. D., 427 Montgomery St.	" 24
O'CONNOR, J. J., 648 Minna St.	" 19
O'BRIEN, D. J., 323 Dupont St.	" 31
O'SULLIVAN, P., 432 9th St.	" 35
RICHARDSON, GEO., 513 Ellis St.	" 39
RICHARDSON, M. B., 624 Shotwell St.	" 1
RILEY, J. F., 165 Perry St.	" 38
ROBERTS, S. N., 54 3d St.	" 55
STEVENS, W. E., cor. Larkin and Market Sts.	" 46
SCHOENMAKER, C., 323 Chestnut St.	" 62
WAGNER, J., Potrero Ave. bet. 22d & 23d Sts.	" 3
WORRELL, C. R., 888 17th St.	" 5
WATERSON, G. T., 638 Market St.	" 64
YOUNG, LEWIS	" 49

BOX RENTERS—IRON MEN.

RALSTON, H. & J., Iron-men & House-smiths, Box 78	" 77
LEWELLYN, R., Columbia Foundry	" 69
WESTERN IRON WORKS	" 69

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SOMERVILLE, W. S., Granolithic Paving Co.	" 55
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BRICK.

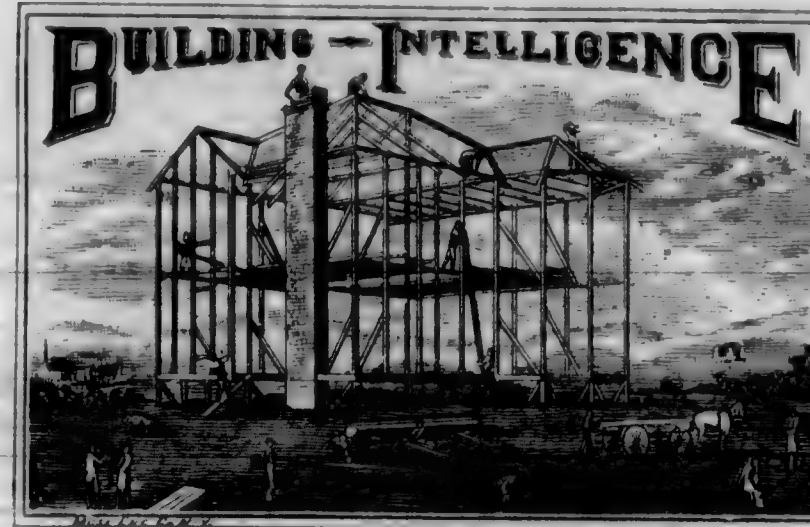
ROBERTS & DAVIS, Sacramento Brick	Box 36
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STEVENS, W. E., Patent Chimney	Box 46
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MISCELLANEOUS.

DAVIS & COWELL, Lime and Cement	Box 43
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MCCLEURE, P. L., Grader and Waterman	" 30
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Where owners' names are left blank, it is so done in most instances by special request.

The alterations reported in our last issue as going on, on the corner of Market and Golden Gate Avenue, should have read Market and Turk.

H	I	J	K	L	M	N	O
Hickory Ave., nr. Octa. via. One-story frame. O.—J. Riley. A.—B. Warren. C.—Moore Bros. \$1,500.	Hunter's Point, Two-story frame. E.—Stiener. C.—H. Bohnenberg. \$2,000.	Haight, nr. Scott. Two-story frame. O.—H. Matheson. C.—B. Kimball. \$3,000.	Haight, nr. Scott. One-story frame. O.—Seymour Johnson. C.—C. Chisholm. \$3,000.	Hyde, nr. Sacramento. Alterations. O.—S. L. Stanley. A.—Schmidt & Havens. C.—R. Mitchell. \$2,000.	Ellis, cor. Buchanan. Three-story frame. O.—Schmidt & Havens. \$3,000.	Eddy, nr. Mason. Alterations. O.—Mrs. A. Moll. A.—W. Mosser. C.—S. T. French. \$4,000.	Eddy, bet. Laguna and Octa. via. Alterations. O.—P. W. Hurlan. A.—T. J. Welch. C.—Mahoney Bros. \$700.
Beaver, nr. Castro. One-story frame. O.—C. N. Johnson. C.—H. P. Holland. \$1,600.	Broderick, near Jackson. One-story frame. O. and B.—W. T. Lewis. \$2,500.	Bush, bet. Powell and Stockton. Four-story frame. O.—Capt. J. C. Dilliver and Wm. & Geo. Livingston. A.—W. H. Wharf. C.—C. E. Dunshee. \$17,000.	Bush, bet. Franklin and Gough. Two-story frame. O.—Mrs. E. Arberger. A.—H. Giffuss. C.—J. Klein. \$5,500.	Bartlett, bet. Twenty-first and Twenty-second. One-story frame. O.—A. H. Rhyner. A.—H. Giffuss. C.—Conrad & Miller. \$3,300.	Broadway, cor. Montgomery. Four-story frame. O.—Mrs. J. Rudbeck. A.—T. J. Welch. C.—J. Hayden. \$13,000.	Brannan, nr. Fourth. Two-story brick. O.—S. Lachman. A.—Wright & Sanders. C.—J. Hoff. \$70,000.	Castro, nr. Seventeenth. One-story frame. O.—H. L. Pleace. Day's work. \$1,600.
Chestnut, cor. Stockton. Alterations. O.—Home of Inebriates. A.—H. T. Restor. C.—J. Densmore. \$2,500.	Clay, nr. Yerba Buena. Alterations. A.—R. Swain. C.—Robinson & Gillespie. \$800.	Calvary Cemetery. Office. O.—P. W. Rindan. A.—T. J. Welch. C.—J. W. Smith. \$700.	California, bet. Gough and Octa. via. Alterations. O.—M. H. De Young. A.—Curlett & Cuthbertson. C.—P. Crichton. \$30,000.	Dolores, nr. Twenty-second. Three-story frame. O. and B.—T. R. McLeod. \$8,000.	Ellis, bet. Hyde and Larkin. Two-story frame et cetera. O.—Geo. Hass. A.—J. H. Littlefield. C.—Haskell & Webb. \$1,200.	Geary, cor. Hyde. Three-story frame. O.—Jas. Musto. A.—Schmidt & Havens. C.—Anderson Bros. \$15,000.	Garry, nr. Buchanan. Three-story frame. O.—Jas. Musto. A.—Schmidt & Havens. C.—Anderson Bros. \$15,000.

P	Q	R	S	T	U	V	W
Pacific, nr. Hyde. Alterations. O.—M. Peterson. A.—John T. Kead. C.—John Kelly. \$1,300.	Sixth, nr. Folsom. Alterations. O.—S. Hanlon. Day's work. \$1,000.	Sixteenth Ave., corner Octa. via. Two-story frame. O.—J. Barry. Day's work. \$1,000.	Sacramento, bet. Lyon and Baker. One-story frame. O.—Geo. Michels. C.—Wm. Plums. \$3,000.	Steiner, nr. Haight. Alterations. O.—B. E. Henriksen. C.—T. Klein. \$2,000.	Seventh, near Cleaveland. One-story frame. O.—J. Macgregor. A.—T. J. Welch. C.—H. Bollenberg. \$1,400.	Shotwell, nr. Twenty-fifth. Two-story frame. O.—S. & J. C. Newsom. C.—Wm. H. Wickersham. \$5,000.	Sutter, cor. Pierce. One-story frame. O.—Wm. H. Birch. A.—S. & J. C. Newsom. C.—Wm. H. Wickersham. \$5,000.
Market, bet. Larkin and Polk. Three-story frame. O.—Townsend & Wyneken; day's work. \$12,000.	Mission, nr. Twenty-first. Alterations. O.—H. Rose. C.—W. F. Muller. \$2,200.	Market, nr. Fourteenth. Two-story frame. O.—Chas. Burbank. C.—E. A. Doolittle. \$7,000.	Market, nr. Drumm. Four-story brick. O.—Clinton Day. C.—Geo. Richardson. \$8,000.	Natoma, bet. First and Second. Alterations. O.—Jas. Tomkins. C.—J. Newham. \$1,800.	Nineteenth, nr. Dolores. Six two-story frames. O.—Mme. Gensoul. A.—Huene & Everett. C.—W. B. Kregar. \$8,400.	Ninth, bet. Howard and Folsom. Three-story frame. O.—H. Wenzel. A.—S. & J. C. Newsom. C.—J. Rebmam. \$6,500.	Noe, bet. Fifteenth and Sixteenth. Two-story frame. O.—Mrs. J. Coleman. A.—T. J. Welch. C.—Jas. Brickley. \$3,200.
O'Farrell, near Powell. Two-story frame. O.—F. Tromer. A.—H. D. Mitchell. C.—R. McCann. \$3,000.	Point Lobos Ave., bet. Fourth and Fifth Aves. One-story frame. O.—Chas. H. Ford. A.—J. H. Littlefield. C.—Haskell & Webb. \$2,300.	Pacific, nr. Hyde. Alterations. O.—M. Peterson. A.—John T. Kead. C.—John Kelly. \$1,300.	Sixth, nr. Folsom. Alterations. O.—S. Hanlon. Day's work. \$1,000.	Sixteenth Ave., corner Octa. via. Two-story frame. O.—J. Barry. Day's work. \$1,000.	Sacramento, bet. Lyon and Baker. One-story frame. O.—Geo. Michels. C.—Wm. Plums. \$3,000.	Steiner, nr. Haight. Alterations. O.—B. E. Henriksen. C.—T. Klein. \$2,000.	Seventh, near Cleaveland. One-story frame. O.—J. Macgregor. A.—T. J. Welch. C.—H. Bollenberg. \$1,400.

V	W	X	Y	Z
Valencia, near Twenty-third. Seven one-story frames. O.—R. T. Knox. A.—Townsend & Wyneken. C.—Treadwell & Thompson. \$9,000.	Van Ness Ave., cor. Ivy Ave. Alterations. O.—Mme. Sorbier. C.—T. Hamilton. \$1,000.	Valencia, nr. Nineteenth. Two-story frame. O.—J. Mack. A.—H. Giffuss. C.—Klatt. \$3,000.	Valencia, bet. Twenty-first and Twenty-second. Alterations. O.—Mrs. E. D. Johnson. A.—Geo. A. Bordwell. C.—S. G. Worden. \$1,600.	Van Ness, bet. Pacific and Broadway. Alterations. O.—J. Birmingham. A.—T. J. Welch. C.—J. L. Hinet. \$800.
Washington, bet. Leavenworth and Hyde. Two two-story frames. O.—Geo. L. Reynolds. A.—W. G. Copeland. C.—S. M. Hill. \$7,000.	Washington Ave., nr. Mission. Two-story frame. O.—C. Porelli. A.—J. Lutzgens. C.—H. Thum Worden. \$3,000.	Yerba Buena, nr. Clay. Three two-story frames. O.—G. W. Haight. A.—R. Swain. C.—Robinson & Gillespie. \$3,500.		

MISCELLANEOUS.

Sonoma Two-story frame. O. Robt. Hall; A. Geo. A. Bordwell; C. J. Schupp. \$5,000.	Millbrae One-story dairy barn. O. D. O. Mills; A. Percy & Hamilton; C. B. F. Ellis. \$8,000.	San Jose San Fernando, near Delmas Ave. One-story frame. O. P. A. Aguirre; A. Jacob Lenzen & Son; \$2,125.	First Street. O. C. T. Ryland; A. Jacob Lenzen & Son; \$1,600.	Sixth Street, near William. One-story frame. O. Mrs. M. Beme; \$1,646.	Julian Street, bet. Third and Fourth. Alterations and one-story frame. O. M. J. Ashmore; A. Jacob Lenzen & Son; \$3,000.	Third Street, bet. San James and Julian. Two-story frame. O. Dr. J. B. Potts; A. Theodore Lenzen; C. E. B. Wells. \$8,000.	Oakland Cor. Fourteenth Street and Broadway. Two-story frame. O. Jas. Moffitt; A. H. D. Mitchell; C. H. Welby; \$5,000.	Two-story frame. O. H. Wadsworth; A. Clinton Day; C. Ingerson & Gore; \$13,000.	Woodland Two-story frame. O. George Pierce; C. J. Caldwell. One-story frame. O. J. J. Hannan; C. Glenn & White. Elm Street. One-story frame. O. and B. Oscar Marston; \$1,500.	College Avenue. One-story frame. O. T. J. Goin; C. Glenn & White; \$1,000.	One-story frame. O. John Griggs; C. Pool & Sears; \$1,500.	One-story frame. O. Edward Gallop; C. W. H. Naylor; \$1,400.	Cross Avenue. Two-story frame. O. John Campbell; C. S. Steinberg; \$1,500.	South Avenue. One-story frame. O. and B. G. McDonald; \$1,200.	Two-story frame with house. O. and B. W. J. Horton; \$2,000.	Two-story frame. O. Lovell Brothers; C. Fred White; \$2,000.	Two-story frame. O. C. E. Greene; A. A. Cooke; C. Carle & Gedy; \$19,000.	Main Street. Two-story frame. O. M. Campbell; A. W. H. Carson; C. W. H. Carson & Spence; \$3,000.	Capay Two-story brick. O. J. W. Aldrich; C. D. S. Scott; \$3,000.	One-story frame. O. M. Hubbard; C. John Spence; \$1,000.	Cacheville One-story frame. O. John Connell; C. G. W. Cooper; \$1,000.	Winters-Craig Avenue. One-story frame. O. A. M. Craig; day's work; \$1,600.	Main Street. Two-story brick. Old Fellows' Hall. C. Ward & Rubie; \$7,000.	Los Angeles Two-story building. O. Messrs. Maxwell & Moore; A. Curlett & Cuthbertson; day's work; \$28,000.	Martinez One-story frame church. C. Ludden & Marsh; \$4,500.	Two-story frame. O. A. J. Perry; C. J. Carter; \$2,100.	One-story frame. O. W. B. Davis; C. E. De Rain; \$600.	One-story frame. O. P. Hanberg; C. E. De Rain; \$600.	Four one-story frames. O. S. Hublin & Co.; \$2,000.	One-story frame. O. A. Morgan; C. Ludden & Marsh; \$1,800.	West Berkeley Two-story frame. O. Wm. Schrof; A. Wm. Schrof; C. C. Lord; \$1,300.	Eureka Two-story frame. O. S. Acheson; A. S. & J. C. Newsom; C. Butterfield Bros.; \$6,000.	Healdsburg Three-story brick. O. City and County; A. S. & J. C. Newsom; C. E. Hall; \$15,000.
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The California Architect and Building News.

VOLUME VI.
NUMBER 8.

SAN FRANCISCO, AUGUST, 1885.

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Building Report for August, 1885.

As shown by the itemized statement elsewhere given, the number of building, alteration, and repair engagements reported since last issue is as follows:-

August, 1885, 83, with total cost of \$347,600
July, " 99 " " " 412,050

These figures show a shortage in August as against July, of \$64,450. But the July report included a single brick warehouse costing \$70,000 for specially private purposes, located outside of the more active business center, and although a factor in the total of building operations within the city, it may consistently be excepted from the general list, which would place August, 1885, \$5,550 ahead of July. Again, the report for August, 1884, made the amount of building investments for that month 83, at a total cost of \$635,411, a difference of \$287,811 in favor of August, 1884; but in that amount was included the Murphy Building, at \$300,000. Consequently if the cost of this one building is deducted from the total of \$635,411, the balance in favor of August, 1885, will be \$14,189. All of which goes to show that the general building prosperities, outside of special large jobs, continue unabated.

Notice to Correspondents, Subscribers, and Patrons of this Journal.

A CHANGE HAVING OCCURRED IN ITS MANAGEMENT, GEO. H. WOLFE RETIRING,

All Parties in Business Relations, Correspondent, Financial, and Otherwise,

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Editor California Architect and Building News,
240 Montgomery St., S. F.

For convenience sake, use only - CALIFORNIA ARCHITECT, 240 MONTGOMERY STREET, S. F., as that alone will ensure prompt delivery.

The oldest paper in the world, the *Pekin Gazette*, has lately taken a new lease of life. The venerable journal, alone almost in a changeless land, has changed its form. Established in the year 911, the *Pekin Gazette* has been published regularly since 1351. Under the new arrangement three editions are published: the first, the *King-Paou*, printed upon yellow paper, constitutes the official gazette of the Middle Kingdom; the second, the *Hsing-Paou* (commercial journal), also printed upon yellow sheets, contains information interesting to the trading community; while the third, the *Titani-Paou* (provincial gazette), printed upon red paper, consists of extracts from the other two editions. The total circulation of the three is 15,000 copies. The editorship is confided to a committee of six members of the Academy of Han Lin.

The Future in Building Operations in San Francisco.

THE deep interest and concern felt in the building prospects of the future, are clearly manifest in the earnestness with which inquiry is made by owners, material men, and building mechanics generally, for the purpose of finding facts, theories, and arguments upon which to base conclusions as to the probabilities, and settle and solve the material question of degree of future decline or prosperity in building activities. There has been so prolonged a period of "good times" that a foreboding comes to many that, in the natural order of things, there must be a letting up; - a resting time to permit the equalization of demand and supply.

Owners are anxious for light upon the subject, many being willing, and having the means to improve, yet fearing that "the thing has been overdone;" and material men are eager to learn, so as to be able to judge correctly the facts most likely of realization in the disposal of materials, so as to regulate supplies, and avoid the involvements of over-production; and mechanics most naturally are anxious, as upon the quantity and permanency of employment depends, with them, the daily support and comforts of themselves and loved ones.

To all this there can be no reliable answer or assurance given. It is not within the reach of human wisdom to reveal the hidden mysteries of the future, nor to foretell the things that are to come to pass. But it is within the province of human speculation and judgment to determine the probabilities, and from the advantages of practical experiences and familiarity with the facts of the past, and a fair understanding of the present, to arrive at conclusions most likely to be realized.

The song of the "croakers" is, "Too many houses, too much building, and ere long there will be a tumble so mighty, and a fall so terrible, that thousands will be crushed beneath the great avalanche that is sure to come." But this sort of music has been sung so long, and by voices so cranky and unmelodious, that the strains have become discordant and inharmonious; and while these dull sounds have been echoing, the more sensible, enterprising, and progressive people have gone on - built and rented, and are reaping the golden harvest that renting to good-paying tenants yields.

An abatement in the great rush of building which placed the investments of the first six months of 1885, \$1,267,889 ahead of any like period in San Francisco's history, so far as shown by any authentic record, was to be expected, and should be received as one of the

natural and reasonable outcomes of a too universal eagerness among lot owners to take advantage of the low price of materials, and avail themselves of the many inducements to improve vacant lots. There is a proper limit for everything, and when the boundaries are overstepped, the fields of excesses are reached, and those who enter therein must necessarily become discouraged, as nothing fictitious in life affords permanent satisfaction, particularly when it reaches the pocket and purse. It is mainly in this direction that the shrinkage manifests itself, and not in the erection of buildings for homestead purposes, there being a large number of the latter at present in contemplation; and it is not only fair to presume, but a fact certain to be realized, that many fine residences will be commenced before the end of 1885.

Consequently there is good encouragement for those interested in building operations, with scarce a doubt that good mechanics in all the branches of house building will find continued employment, which also means fair trade and transaction for dealers in all kinds of building materials. And with the fact in view that there is but slight decline in rent rates, and this only in houses built years ago, and lacking in many respects the better and more modern improvements in house fittings, particularly in sanitary appointments, there is no occasion for owners to fear that houses conveniently arranged, and built to suit the popular demand, will suffer long for want of satisfactory occupants.

Angelo and the Cardinal.

UNDER the papacy of Julius III., the faction of Michael Angelo's rival, San Gallo, gave him some trouble respecting the building of St. Peter's, and went so far as to prevail on the pope to appoint a committee to examine the fabric.

Julius told him that a particular part of the church was dark. "Who told you that, holy father?" replied the artist. "I did," said Cardinal Marcello.

"Your eminence should consider, then," said Michael Angelo, "that besides the window there is at present, I intend to have three more in the ceiling of the church." "You did not tell me so," replied the cardinal. "No indeed I did not, sir," answered the artist; "I am not obliged to do it and I would never consent to be obliged to tell your eminence, or any person whomsoever, anything concerning it. Your business is to see that money is plenty at Rome; that there are no thieves there; to let me alone; and to permit me to go on with my plan as I please."

"Ah my little man, good-morning," pleasantly remarked an old gentleman as he stopped and patted a Hewes Street little boy on the head, "have you any brothers and sisters?" "Yes, sir; got four, but I'm the only one that 'mounts to anything," replied the urchin.

Cumming's Details..... \$6.00

St. Peter's, at Rome, is situated on the ancient site of the circus and garden of Nero, where that tyrant massacred numbers of Christian martyrs. Tradition says that the bodies of these martyrs were buried by their faithful friends in a grotto near the circus, and that among those who were thus buried here was the crucified apostle, St. Peter.

In 306, Constantine founded a church over the reputed grave of the holy apostle. This edifice remained eleven centuries, when Pope Nicholas V., in 1450, demolished it, and laid the foundation for the present St. Peter's. At the death of this pope, the structure had been elevated only four or five feet above the pavement. The work was suspended, or made but little progress, till the time of Julius II., who, in 1503, employed the celebrated Bramante to carry on this great undertaking.

This architect formed the original plan of the cupola, and caused four stupendous pillars or piers, two hundred and nine feet in circumference, to be raised to support it. The patron and the architect both died and left it in this state.

Leo X. employed architects to carry on the work, among whom was the celebrated painter Raphael d' Urbino, who strengthened the basis of the pillars, which he deemed too weak to support the stupendous cupola.

Various other architects were employed by the pontiffs who succeeded Leo, until, at last, Paul III. committed the edifice to the incomparable genius of Michael Angelo Buonarroti, who designed the dome and cupola as they now stand. He wished to make the front like the pantheon, but death removed him from his labors, and the sublime idea was abandoned. Michael Angelo "left it an unfinished monument of his proud, towering, gigantic powers; and his awful genius" seemed to watch over his successors for a long time.

Many other artists were employed upon this stupendous edifice, until it was finished, under Paul V., by Carlo Maderno. Three centuries and a half this church was being built; and, in 1694, the cost was estimated to have been eleven million pounds sterling, or about forty-nine million eight hundred and forty thousand dollars.

This edifice contains the best specimens of designs of the ablest architects who flourished during a period in which the revived classic style was carried to the highest perfection which it reached in Italy. The extreme length of St. Peter's is seven hundred and twenty feet; breadth, five hundred and ten feet; height, from pavement to the top of the cross upon the cupola, five hundred feet.

Laborers are not anywhere a unit on reform measures. In Austria they are protesting against the reduction of the hours of labor from fourteen and twelve to eleven; to the law forbidding women and children from performing the severer parts of work, and they object to a Sunday holiday. If so, such slavery to toil should all the more be checked by Government interference.

Los Angeles.

Its Building Interests.—The accompanying facts and figures, while specially interesting to the firm of Kysor & Morgan, architects, also possess common interest to the inhabitants of that section of country generally, and co-relatively, to the people of the entire State of California.

The firm above named reports that during the years 1883-84, the buildings planned and superintended by them aggregated a total cost of \$1,687,000.

Buildings Just Completed.—The Sisters of Charity Hospital, \$80,000; residence, Jasper Harrel, \$34,000; Davies-Henderson Lumber Company's Building, \$15,000; Roder Block, \$9,000.

Under Way.—Residence, H. D. Barrows, \$5,500; Gilmore building, Fred Gilmore, \$8,500; res., H. C. Wilner, \$7,500; res., R. Mercer, \$2,000; res., Niles Pease, \$4,000; cottage, Mrs. Eberly, \$1,500; res., A. Clark, \$4,500; addition to Capitol Mills Warehouse, \$17,000; winery and distillery, B. Dryfus, Anaheim, \$35,000.

Prospective Work.—Brick building, J. Bryson, \$45,000 to \$60,000; E. Germain, \$30,000; one of \$75,000; one of \$22,000; residence, J. B. Lankershin, \$15,000, with \$7,000 added for outside improvements, stable, etc.; res., Dr. W. F. Edgar, 44x82 ft.; res., J. L. Sheward, \$8,000; improvements to res., O. W. Childes, \$8,000 to \$10,000; res., John Brewer, \$2,000; res., H. L. Drew, \$10,000.

This is a very splendid business showing for a single firm of architects in a city somewhat remote from the great through line of travel and the center of commercial intercourse. If to this is added the amount of building values controlled by the several other resident architects at Los Angeles, and those handled by architects from San Francisco, the aggregate would be large, and serve to establish the fact that the county of orange groves and vineyards has and is enjoying a full share of the general prosperity which has been experienced throughout the State of California since 1880.

No better evidence of advancement and prosperity can be found in any city or section of country, than the erection of large numbers of substantial dwelling-places, from the unpretentious cottage sheltering the toiling workers and their loved ones, to more magnificent residences—perchance mansion-like in proportions and appointments, where wealth brings luxury and ease, if not the more-to-be desired and sweeter comforts which make life joyous and happy among those whose great treasure is contentment. All these proclaim growth and advancement, for men of mind and purpose build not as hermits,—alone in solitude, estranged, shut out from fellow-kind, lost to all aims, ambitions, emotions, and endearments worthy of noble manhood.

But private residences speak of more; they are not found clustered in barren wastes, nor sandy deserts, but in localities and places where

active business centers, and men by trade, commerce, mechanical, agricultural, vinicultural or other pursuits, gain riches and become more or less wealthy, and of necessity stores, business constructions, public buildings and edifices of greater or less extent and character must exist, to accommodate the ever moving and ceaseless demands of trade and traffic, all tending in the one direction, to enrich and make happy the thousands who mingle in the general interest.

In addition to all this, Los Angeles has gained an enviable and almost world-wide reputation for its salubrity of climate, fertility of soil, luxuriousness of orange groves, vineyards, orchard and field productions, and is destined to assume a rank of great importance among the cities of California. If the rapid advance made within the past three or four years continues, with no relaxing of energy and enterprise on the part of the inhabitants and interested parties, the next ensuing decade will record a growth and prosperity for Los Angeles of very great proportions. How great, as compared with the other cities of California outside of San Francisco, we shall not attempt to predict, leaving that to be developed by the evolutions of time and circumstances, and the efforts, energies, and enterprises of the people of the respective places. Nature has furnished the groundwork of greatness; it therefore remains with those who possess and occupy the land, to utilize and improve the special advantages and opportunities so abundantly strewn around them.

Los Angeles—Continued.

THE reports from which we gather the items herewith accompanying are lengthy, giving, in detail, the sizes, style, and general description of the buildings mentioned. This it would be impossible for us to do without sacrifice of other matter of more general interest. Consequently we simply state the prominent facts—owner, architects, and cost. As described, some at least of the edifices named are or are to be very nice affairs, and would be creditable to any street in San Francisco, if erected in this city.

Messrs. Boring & Haas, architects, report in course of construction a thirty-five room addition to Long Beach Hotel, at a cost of \$10,000; also cottages for Long Beach Co., \$7,000.

MOTT MARKET BUILDING, 62x128, cost not stated.

THE UNIVERSITY OF SOUTHERN CALIFORNIA, on which work was stopped for want of funds, is about to move on again toward completion, money in part having been raised for that purpose.

MOTT & SPENCE BUILDING, brick structure with stone facings, \$24,000.

COTTAGE for Mr. D. E. Thompson, \$3,000. A SCHOOL BUILDING for Prof. D. W. Hanna's college, \$2,000.

Among the buildings to be erected by the

same firm is a \$30,000 sanitarium; a residence for Mr. L. Stuart, \$7,000; a residence for Mrs. M. A. Hoadley, \$6,000; residence, F. Morrison, a wealthy ranchman, 75x50 feet, cost not stated.

All of which, together with other improvements noticed, show a very considerable degree of building activities in and around the city of Los Angeles. We are pleased to learn that our professional brethren in the localities named are "so busy," and hope that the shadows of their professional success may never grow less.

San Diego—Good Showing.

A COPY of the San Diego Union, of June 17th, containing a nearly two-column statement of building improvements in that city, was duly received but accidentally mislaid; and being favorably disposed toward the most southern metropolis of the State, through the courtesy of Mr. J. A. Kookan, a second copy was obtained, from which we gather the fact that the number of buildings erected in the recent past, now under way, and positively to be built, together with a few alterations and repair jobs, number about eighty-five, with a total expenditure of nearly \$289,000, including in the number some very nice residences, in cost ranging from \$2,500 to \$15,000.

Although San Diego is the tip of the south wing of the State of California, the foregoing facts and figures show a pleasing degree of prosperity, which, while not so large in volume as other places nearer the great central business mart of the State, it should be, all things considered, decidedly gratifying to the people of that section. A community of people enjoying all that can be desired in salubrity and healthfulness of climate, fertility and fruitfulness of soil, beauty of harbor, and almost every natural, local advantage for life, health, and comfort, must in time reap the rich harvest that ever flows in such channels. To bring about more brilliant results quickly, will require indomitable energy, persistent effort, and a determination upon the part of all concerned, particularly the "leading men,"—those who direct and control public sentiment, and lay out the work necessary to be done. The common and general interests of San Diego, perhaps, require the presence and co-operation of one or more specially qualified men, with grasp of intellect, foresight, judgment, and every other quality of mind and heart necessary to handle and solve all present problems as to the future best good of San Diego, and give vitality to movements that will for the present modify, and finally overcome the disadvantages which have thus far held the destinies of the place in check.

The people of San Diego, and of every city, town, village, and hamlet, and of the whole country, should ever remember that the entire nation was at a time shrouded in gloom, no one being found "sufficient" to break the

bands of almost universal despair, until the immortal hero for whom the nation yet mourns rose equal to the occasion, and rolled back the deluge that threatened to engulf the nation's life and liberties. So in communities, with the right man in the right place, laying siege to all obstacles, victory is sure to follow.

DULL TIMES EAST.—Nearly every one of our Eastern exchanges makes reference to the "prevailing dull times," some predicting a continuance and increase of the stringencies, while others take a more cheerful view of the situation, and claim that encouraging signs of business revivals are apparent, generally. In support of this, statements are made that certain manufacturing establishments are enlarging and preparing for full capacity operations, and that the near future will witness a return of brisk times. It is to be hoped that the better condition of things will be realized, and that the tens of thousands of wage earners who have been out of employment will soon return to their places and find steady and constant work.

In California, there has been no such labor panic as is and has been reported to exist in the Eastern States. And had not the dullness in other sections of the country "driven" thousands of workers to this coast, the supply of labor here would at no time have exceeded the demand; and, even with this influx added, the good and competent men have, generally, found steady employment, the idle ones being mainly of the class first laid off, when pressing necessities for their services do not exist,—to all of which the fact may be added that the cutting of wages on this coast has been less than elsewhere, and the pay maintained, averaging greater than in any other well settled section of the country. But it may be further added, by way of caution, that mechanics who come hither must expect to take their chances in finding employment, as all labor avenues are full—some to overflowing.

Sub-Letting Plumbing Work.

The feeling continues to grow against the practice so fatal in its consequences, of master plumbers sub-letting contracts to irresponsible parties. The Minnesota Architectural Association last winter took strong ground upon this important subject, and the associations of other States, as well as several chapters of the American Architects' Institute, have since taken the matter up and added their protests. The "skin" plumber, or, more properly speaking, his employer, is responsible for much of the sickness and death so prevalent in all cities. "Cheap and nasty" may do for the contractor, but it is financial ruin if not death to the property-owner. In time, perhaps, the botch plumber, the botch bricklayer, and the botches of all other trades will be relegated to their proper places, and then will come the era of prosperity for good, honest, conscientious mechanics.

Prices of Building Materials.

THE condition of the material market having much to do with building activities, and the question being continually asked by those contemplating improvements, in general terms we reply. All kinds of materials are low. Lumber is being sold at exceedingly seductive rates, and bricks are much below former prices, while all other lines of materials are in sympathy with the "dull times" so frequently quoted, and the demand for cheapness.

The cry of "dull times" in California is an anomaly; for while the talk runs in that direction, there are but few who are not doing well, and thousands have money to invest in projects assuring fair returns.

BUILDING LABOR.

The supply of workers in all the branches is fully up to the demand, and in some the supply is in excess; consequently the rates of wages at present are considerably below those ruling two years ago. So that those who wait for more favorable advantages, will need to pray for a return of the Dennis-Kearney period, when workers were glad to find employment at any price, and but few ventured to break the sod on their real estate, for building purposes.

EMPTY HOUSES.

The return of absentees from the Springs, summer vacations, etc., is manifesting itself by the decrease noticeable in the number of "to let" signs on houses to rent; and it is fair to presume that by the end of the summer months, and the return of those who have been off on tours of travel or pleasure, but few empty houses will be found in San Francisco, and these will be the less desirable, old fashioned, "too large," poorly arranged, and undesirable places. The fact is not sufficiently considered in this connection, by those who argue that there "are a great many empty houses;" that the old time, out-of-date buildings are apt to go begging for occupants, while acceptable buildings on the same lots would find ready tenants. Under the general conditions of the times, renters are not willing to occupy houses built many years ago, which are so much inferior in so many respects to those of later construction containing so many more conveniences and modern improvements. Still, in the general count of unoccupied buildings, the merest shanty, with from one to ten "to let" signs posted on its portals, front, and fences, swells the aggregate as much as though displayed on a first-class tenement. This class of houses is somewhat analogous to spavined horses—not in demand; nobody wants them unless they can be had very cheap. Take away all this kind, and there would not be a sufficiency of houses to rent in San Francisco to supply the demand.

A Cubic Inch of Gold.

ONE cubic inch of gold is worth \$210; one cubic foot, \$312,380, and one cubic yard, \$9,796,762 (counting the ounce at \$18).—*Jeweler's Circular.*

Sidewalks.

IN all large cities—as a rule—other than San Francisco, the sidewalks are laid of material more durable than wood—brick, natural or "patent" stone, asphaltum, and other similar materials, consequently a reference to sidewalks laid of wood would seem strange to those of our readers who have never seen anything of this sort on the public streets. Nevertheless it is a fact that many scores of miles of wood sidewalk are still in use in San Francisco, although on nearly all the principal business thoroughfares they have been replaced—mainly by the "patent" or artificial stone pavement, and in the residence portions of the city, the same process of substitution is rapidly going on. In nineteen out of every twenty cases of good class, new buildings, whether erected for personal use or renting, stone sidewalks are adopted.

The reasons why this is done are several,—appearance—"looks"—perhaps, being the first, for they do most certainly add greatly to general effect, and give tone and character to the improvement. Besides this, owners understand the fact that while the stone sidewalk is more expensive in first cost, the additional outlay over wood is fully compensated by increased durability, to say nothing of the greater satisfaction and comfort enjoyed. But the most essential feature and quality of impermeable sidewalks, is sanitation. Any sidewalk material that absorbs and holds moisture should be rejected and condemned from sanitary considerations; and in this particular, there is nothing worse than wood, not even the exposed ground and gravel; for the moisture taken in and stored beneath the planking is detained from contact with the pure atmosphere and the process of rapid evaporation, and remains to decompose, and be drawn out by exhalation by the forces operating under the natural laws of sunbeams, and the warmer free air above, in a vitiated condition; while the impermeable pathways resist absorption, and retain on their surface or quickly shed all fluids and liquids until they are disposed of by the forces acting upon them, without deterioration or prejudice to healthful conditions.

Pressed wood the best. But so long as wood sidewalks are permitted they should in all cases be laid of dressed or surfaced lumber, for the reason that, in the surfacing process, the lumber passes under a certain degree of pressure, which compresses the wood greatly, besides the solidifying effect of the planer; and the fact is well understood that all kinds of wood and fibrous materials are made more solid, tougher, and consequently more durable, by and according to the degree of pressure to which they are subjected.

Dressed sidewalks the cheaper. The cost of surfacing should not be considered, as those that are so treated last and wear much longer and better, to say nothing of the greater satisfaction afforded in their use; and the smoother surfaces shed the water more readily

with less absorption, thereby removing, to some extent, the objectionable features of wood sidewalks.

Contracts as a Whole, or Segregated.

AN abuse which of late years has grown into troublesome proportions is that of letting building contracts in the lump to some one person or firm, who are held responsible for the completion of the work in all particulars according to specifications. The contractor sub-lets the various portions of the work to others, each making a specialty of some particular portion thereof, and each responsible to the general contractor. First comes the excavator, then the stone-mason, then the iron founder, then the stone-cutter, then the carpenter, then the bricklayer, then the roofer, then the plasterer, then the glazier, and finally the painter. The pay of each depends upon the thoroughness of the work performed by those who precede him. For instance, the painter having completed his work—an event for which all the others have patiently waited—it is discovered that the mason, the bricklayer, the carpenter, or some one else has either skimmed, jerryed, or otherwise shirked the details of his part of the contract, whereupon the owner, the architect, and the original contractor confer in regard to the matter. Such conference may continue for a day or for a month, and end in the acceptance of the job or disagreement; but all the time the sub-contractors who did their work well are compelled to wait for their pay, and in many instances their workmen also are put off, thereby entailing suffering upon their families. The system is all wrong, and the sooner it is reformed the better. Let the owner award the separate contracts himself, and settle with each contractor upon completion of his portion of the work. Then, if a hitch occurs, the innocent will not have to suffer for the guilty. Let exact justice be done to all, without favoritism or unnecessary delay. These hints are thrown out because the frequent and bitter complaints we hear from all sub-contractors and journeymen, and we hope that those in a position to rectify the evil will lose no time in taking proper action.—*Western Architect and Builder.*

Experienced lumbermen have always held that timber cut in the spring was not durable for building purposes. Recent scientific investigations sustain this belief. It is shown that the richer the wood is in phosphoric acid and potassium, the more likely it is to rot and mould; wood cut in the spring contains eight times as much of the former and five times as much of the latter as when cut in the winter.

"What a wonderful thing the electric light is!" "Yes, it is wonderful. I expect after a while it will be used to make the crops grow, instead of the sun." "There are some crops now that thrive by electric light." "Nonsense." "No nonsense about it. There are lots of young men who sow most of their wild oats by the electric light."

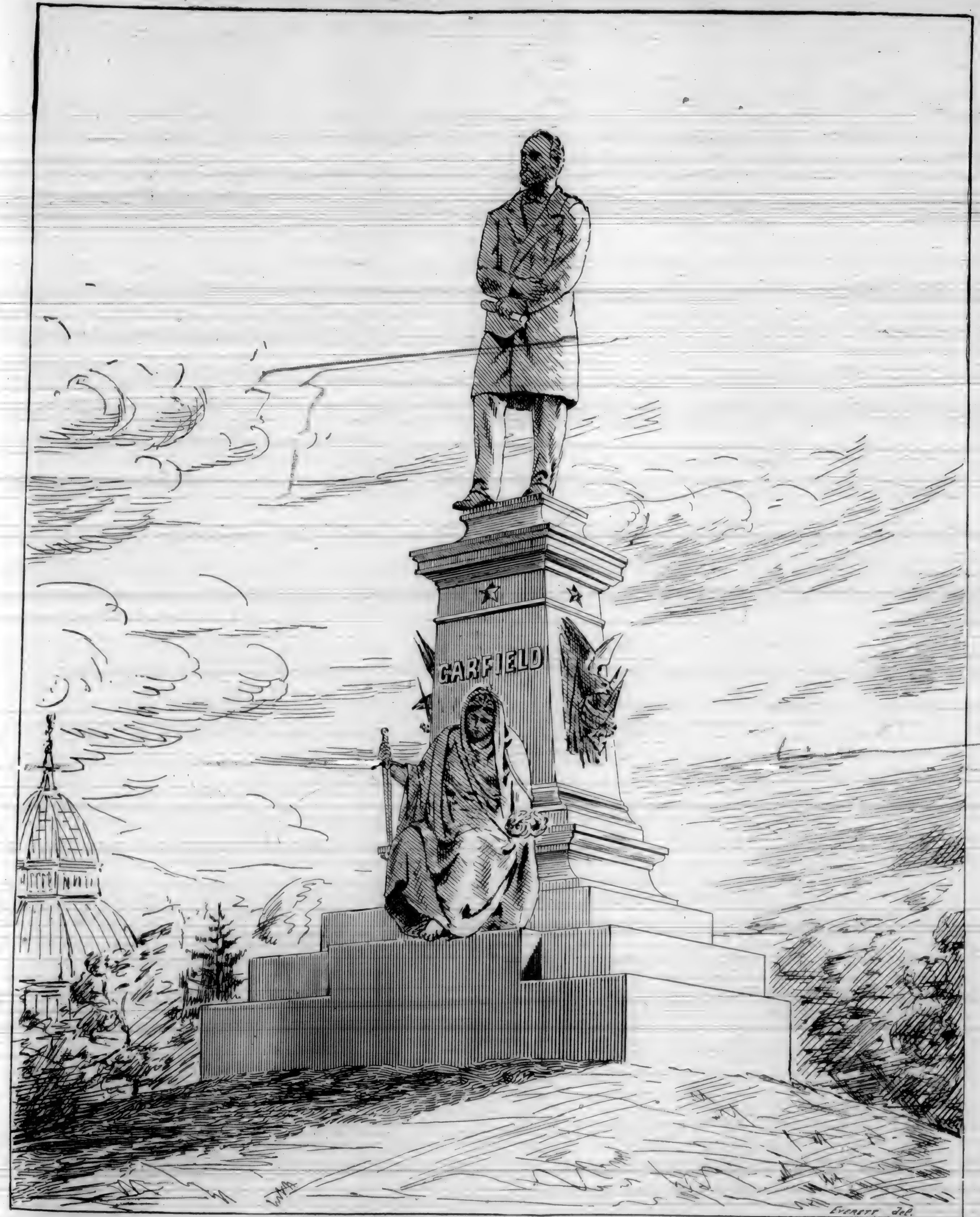


PLATE I.—THE GARFIELD MONUMENT.

Plumbers' Movement.

THE essence of the plumbers' movements, which has, perhaps, attracted more attention for the past two years than any other effort to advance the interests of sanitary science, is well stated by President Allison, of the national association, in a recent interview. He says: "Our objects are simply to inspire and elevate the plumber and the public into a realizing sense of their duties with reference to correct sanitation, and, in order to accomplish them, we require education for both and legislation. The work is necessarily slow. Our difficulties were first to interest the plumbers as a class, and to convince them that, being held responsible by the public for all sanitary evils of bad plumbing (although the fault might lie with architects, builders, and owners), they should make themselves acquainted with sanitary science and capable of shouldering the responsibility. Ignorance, custom, and necessity are the elements we have had to overcome, but we are succeeding, and begin to show signs of a defined purpose and combined unity of action. First, we have sought to smooth away the angularities arising from unworthy competition among ourselves and to arrange the relations between plumbers and manufacturers on a system more just and permanent. This last was covered by what are known as the Baltimore resolutions, which the National Plumbers' Association has confirmed and all but two or three of the manufacturers have assented to. The resolutions requested manufacturers to discontinue the practice of selling material to consumers, whereby injustice to the plumber and increasing confusion were wrought. The architects and doctors have accepted the situation and will co-operate with any reasonable measures to advance the sanitary welfare of cities. The parties alone are responsible for the plumbing work should also have the planning of it. Correct sanitation includes the construction of boards of health, which, in many cities, seem constituted with the express view to their inefficiency. All of these things require judicious building and sanitary laws defining a standard of ability for the master plumbers. It is upon these points physicians and architects are with us, and we are growing more sanguine of success every year. The meeting at St. Louis, in the number, intelligence, and earnestness of its members, is proof positive, and the reception of our fellow-craftsmen, assisted by the municipal and distinguished servants, backed by the unequivocal and lavish favor of the press, amounted to an ovation. It shows how deep an interest will be taken in any movement to secure public health by improved sanitary regulations when the object and its methods come to be realized more generally. The tone and spirit of the discussions, the learning and earnestness of the essays read, and the high character and superior intelligence displayed by the representatives from all parts of the Union, would do credit to any body of men.—*Sanitary News.*

Death of Mr. Joseph Gosling.

SINCE the last issue of this journal, Mr. Gosling, a well-known practicing architect in San Francisco, has passed away. He was among the early arrivals in this State, and a member of the "Pioneers' Association." During the Virginia City excitement he left San Francisco to join in the general rush of fortune-seekers in that section of country, prior to which he occupied his time as master builder in this city; but finding an opportunity at Virginia City to practice the profession of architect, he did so, and in time returned to San Francisco—twenty years ago, more or less—where he remained and enjoyed a fair degree of professional practice.

San Francisco Chapter.

THE regular meeting of the chapter was held August 7th, President Laver occupying the chair. A goodly representation of the membership were present, all of whom manifested a deep interest in the chapter work. Reports from the various committees were received and acted upon; discussions upon that relating to apprenticeship indentures occupying the greater part of the evening, and after a free and kindly expression of views by all present, the report was referred back to the committee for the purpose of legal advice, and to harmonize the various suggestions made.

Owing to the time occupied in other matters, discussion on the "Lien Law" was deferred until the next meeting of the chapter. The by-laws requiring the nomination of officers to be made in August of each year, either by open nomination, or through a nominating committee, a committee of five, consisting of Messrs. Gash, Macy, Whittemore, Sanders, and Eisen, was appointed, to report at a special meeting to be held Friday evening, 21st inst., to which time the chapter adjourned.

Mechanics' Fair.

THE arrangements that are being made by the management indicate that the coming exposition will be one of more than usual interest. This is to be expected, as the gentlemen in charge have had years of experience and should be in every way qualified to develop many new and specially interesting features—those which go far to win public approval, and make the exhibition a decided success, not only financially but in instruction and profit to the tens of thousands of visitors, old and young, who day and night will throng its broad aisles for pleasure, or to gain the knowledge imparted by the many displays that will be made in beautiful and useful things, and the numerous mechanical contrivances and devices, and the exhibition of art, sculpture, and science in the many forms presented.

LIKE SUNBEAMS.—If you have something to say, as a general rule, boil it down. Words are like sunbeams, the more they are condensed, the deeper they burn.

Our Illustrations.

PLATE 1.—A correct and truthful representation of the Garfield Monument erected in the City Park, San Francisco, sketched from real life by Mr. Oliver Everett, of the architectural firm of Huerne & Everett.

The design has received adverse criticism generally, as being faulty in many of its details, and very far from pleasing in general effect. The poise of the central figure is not good, with the fore part of the right foot projecting over the edge of the cap-stone, and the hands compressing the stomach, suggestive of pain within, rather than a natural and free attitude. The pedestal itself, while fair in proportions, is not striking in any of its features, while the much-too-large female figure resting at its base is, to the common observer, cumbersome, and more an eye-sore than a thing of beauty and appropriateness. The shields at the sides are also objectionable, being more conspicuous than graceful.

It would be more pleasing to express all praise and admiration, but the facts do not justify it. And the original designer being a young San Franciscan, it is to be regretted that he has not won greater and fairer laurels. Still the seeds of promise are to be seen, and, hereafter, Mr. Happensberger may prove himself a foe to be feared in future competitions.

Figure 1, Plate 2.—Original plans of a two-story residence, situated on twenty-first Street, between Mission and Valencia, owned by Mr. John L. Boone, as it appeared before alteration; built by the Real Estate Associates.

Figure 2, Plate 2.—Front elevation of the same after alteration, with corner bay window and tower on new section.

Plates 3 and 4.—Main and second stories after alteration. The tower is to be reached by means of a comfortable ladder piercing the ceiling of the bath-room, thence along a passage way to the front of the building.

Is Our Wood Supply Failing?

AT the recent meeting of the Society of Engineers at Deer Park, Md., a valuable paper was read on the "Preservation of Forests." The paper presented a large number of statistics, collected from various sources, to show the necessity of exercising economy in the use of forest products and the possibility of a wood famine. The writer concluded that the supply of white pine in the United States is certain to be exhausted before the end of this century, and probably in Canada also. Of Southern pine, at the present rate of consumption, there is stated to be 150 years' supply of spruce and hemlock. East of the Mississippi there is probably twenty-five years' supply of hard woods. The supply of black walnut and ash is being rapidly exhausted. The supplies of other kinds of wood are, however, so abundant that a famine cannot be predicted. In reference to tree-planting, the writer stated that when intelligently undertaken in regions where timber is scarce a fair return is made on the investment.—*Exchange.*

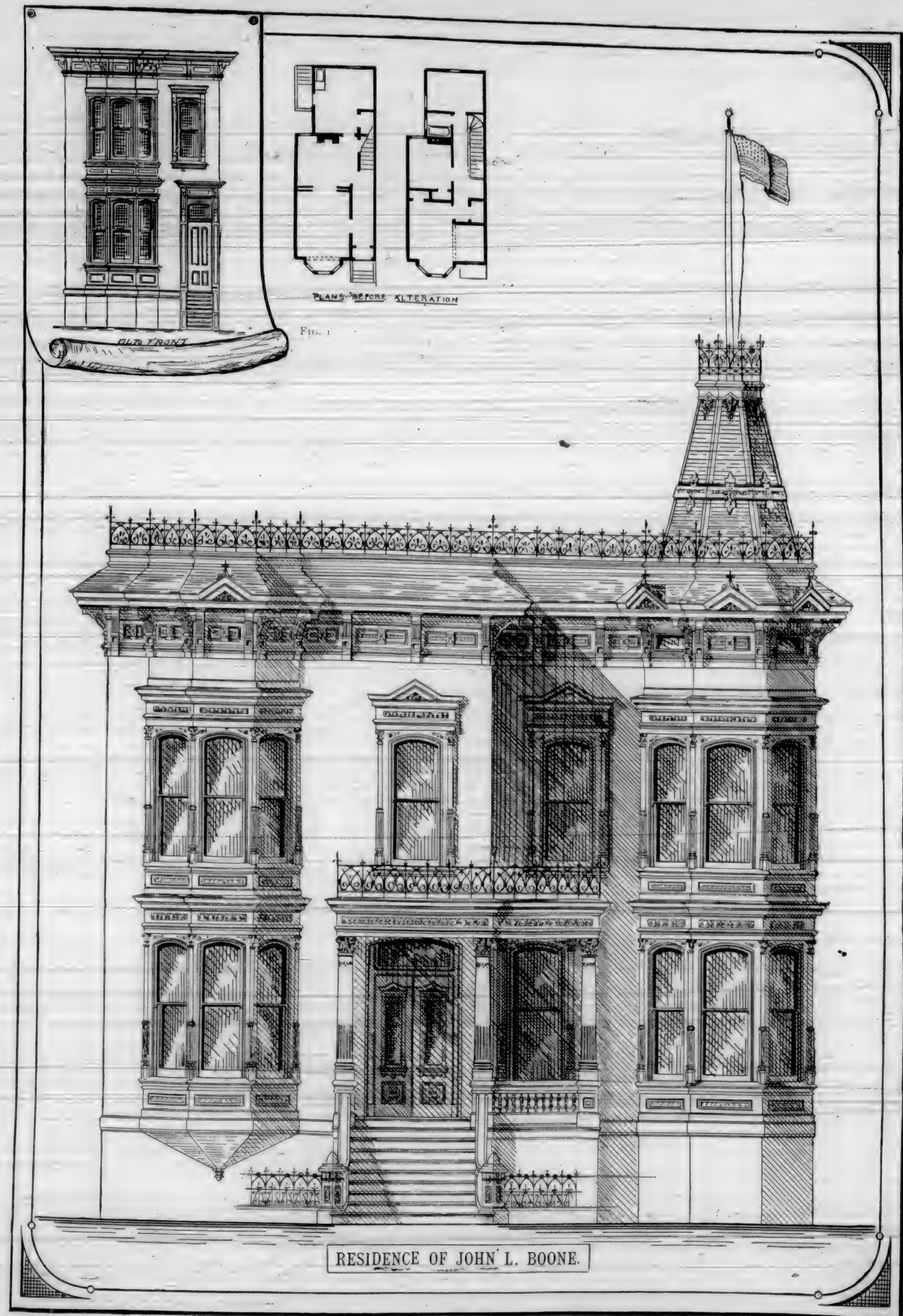


FIG. 2.

PLATE 2.

The Country's Progress.

THE following statistics show the growth of the country since the year 1860:—

Twenty-five years ago we were 30,000,000 of people; now we are over 50,000,000.

Then we had 141 cities and towns of over 8,000 inhabitants, now we have 286 of such cities and towns. Then the total population of our cities was 5,000,000; now it is about 12,000,000.

Our coal mines then produced 14,000,000 tons, now 85,000,000 tons, or six times as much.

The iron product amounted to 900,000 tons of ore; to-day it foots up over 8,000,000 tons a year, almost a nine-fold increase.

In 1860 our metal industries employed about 53,000 hands, consumed \$100,000,000 worth of material, and turned out about \$180,000,000 in annual products.

To-day these same industries employ 300,000 hands, consume \$380,000,000 of material, and their annual product amounts to \$660,000,000 a year.

In 1860 the wood industries employed 130,000 persons; to-day they employ 340,000, while the value of their annual product has trebled.

The woolen industry employed 60,000 persons then, and now employs 160,000, while our home mills, which produced goods of the value of \$80,000,000 in 1860, now turn out an annual product worth \$270,000,000.

Finally there is cotton. In 1860 we imported 227,000,000 yards of cotton goods; in 1881 we only imported 70,000,000 yards.

In the meantime the number of hands employed in American cotton mills has increased to 200,000, and we export over 150,000,000 yards of cotton goods a year, instead of importing 227,000,000 yards as we used to do.

The silk industry employed 5,000 persons, now it employs about 35,000, seven times as many.

We import no more silk goods now than we did in 1860, but our own mills, which produced goods of the value of \$6,000,000 then, now turn out a product of over \$40,000,000 yearly.

In 1860, 12,000 persons were employed in American pottery and stoneware works; to-day about 36,000 are employed in this industry.

The chemical industry, which employed 6,000 persons then, now employs 30,000.

In the meantime we have nearly five times as many miles of railways, and double the number of farms, and yielding more than double the number of bushels of cereals.

In the production of sheep we had 22,000,000 of them in 1860, to-day we have over 40,000,000 of them; and whereas we then produced in this country 60,000,000 pounds of wool, now we produce 240,000,000 pounds.

Finally, the total of our exports has doubled. In 1860 it stood at \$400,000,000, and now it stands at about \$900,000,000.—*Philadelphia Commercial List.*

The City of London.

THIS city was anciently founded on the north side of the river, and down to a time comparatively recent the south bank was not thickly inhabited. As soon as people began to extend beyond the city walls, the phenomena so common in great cities showed itself, and the wealthy moved westward, leaving the poor to extend eastward. Various causes have led to a prodigious increase in the extent of London, and it is now difficult to assign limits to what is almost more a compact province than an extended city. Places that formerly were remote suburban villages have been completely swallowed up, and many outlying districts that are situated outside the metropolitan boundary are really connected with the heart of London by unbroken lines of streets and houses. You may now go from Holloway on the north to Penge on the south, or from Stratford on the east to Putney on the west, without passing an unoccupied field.

It will be easily understood that even the refuse from so large a city constitutes a great difficulty. Much land is now occupied by houses which was once so far out of the way that it was used as a deposit for ashes, dust, and garbage.

London streets, even important ones, are, generally speaking, narrow, and the houses low. In some of the newer districts wide streets have been laid out, and the exigencies of traffic are constantly causing old thoroughfares to be widened and straightened at enormous expense. In many of the oldest parts of London, however, tortuous lanes and narrow alleys, and blind streets abound, and the houses have little or no land in the shape of fore-court or back-yard attached. London enjoys a compensation for her narrow thoroughfares in the number of fine open spaces. The parks have been well called the lungs of London; and, in addition to them, the many squares and the wide channel of the Thames provide a sensible and welcome relief from the crowded and compact mass of dwelling houses.—*Sanitary News.*

Work on the Capitol tower at Albany has made good progress this summer. It has risen thirteen feet, and before cold weather it will reach the point where the cone begins. The first curve of stone for the western staircase has been laid. The electric wires are being carried through all the furnished portions of the edifice, and the legislative rooms are being carpeted anew.

The ten finest buildings in this country, according to the majority vote given in the *Boston American Architect*, are Trinity Church, Boston; the Capitol at Washington; W. K. Vanderbilt's house, Trinity Church, and the Jefferson Market Court House, New York; the City Hall, Hartford; City Hall and State Capitol, Albany; Sever Hall, Cambridge, Mass.; and Town Hall, North Easton, Mass.

The Building Acts in London.

THERE have been building acts in London ever since the period of the great fire, mainly directed to diminishing the risk of another general conflagration. Of the acts now in force, which are numerous, the most important are the metropolis local management act, and the metropolitan building act, with sundry amending acts. The former of these contains, speaking broadly, the regulations as to drains and streets, the latter those affecting buildings. The central authority for drainage, etc., within the ancient and comparatively small limits of the city proper is the city commissioners of sewers, a branch of the corporation. That for the rest of the metropolis proper is the metropolitan board of works—having affiliated to it a series of local boards, each consisting of a group of parishes or a single parish. Beyond the boundaries to which these acts apply there extends a large inhabited zone, forming, so to speak, a third division. Drainage is under the direction of surveyors, who are the salaried officers of the various boards. The building act is administered by a large number of district surveyors, who are architects in practice, and each intrusted with the supervision of the buildings in one locality.

The building act, besides attempting to secure a minimum of strength and solidity in walls, and requiring many precautions against the risk of fire, contains some sanitary regulations of considerable importance and value, though the management act is the one mainly directed to sanitation.—*Sanitary News.*

Evidences are abundant and conclusive in regard to the lasting properties of cypress wood. Hence it is gradually creeping into use more and more each year. Already it is being used in many houses in New York City in finishing, with calls for more. Five million shingles is the estimated amount of consumption in the New York market, with an increasing demand. At least 3,000,000 feet of the wood will be required to supply the market in railroad ties. It is exported to some extent to various ports. Railroad ties have been sent to Cuba, France, and England. Lumber has been sent abroad, but in no great quantities.

The employment of cast-iron columns as main supports has been greatly restricted at Berlin by a regulation issued from the architect's department of the police authorities of that city. The order has been issued in consequence of a discovery made last winter at a fire, when it was found that the cast-iron columns had been cracked by the effect of the cold water playing on them while hot. The authorities now insist that where partition walls rest upon cast-iron columns, the latter are to be covered with plaster or bricked in, with an air space between the bricks and the column.

People who advertise only once in three months forget that most folks cannot remember anything longer than about thirty days.

A Nation's Hero Gone to Rest.

NOTHING that we could possibly indite, would add a single iota to the universal homage paid to the memory of the illustrious dead. It has been the lot of but few men to reach an eminence so high and grand, and secure a love and admiration so devout and universal, as did the honored one who at his death and burial aroused the profound and heartfelt sympathies and sorrow of fifty millions of his own people, and in which millions in other lands united—feeling that a truly great, brave, and good man had passed away.

But while he no longer in person mingles in the active scenes of life, he lives in the memory of present generations, and will live in history through all future ages, as one of the noblest and best of his race; and his examples will pass down through coming periods as a guiding star to millions yet unborn. Truly may it be said, though dead, he yet speaketh.

As in life his influence was powerful, in death it was mighty, serving more than any other one event could do, in breaking down sectional asperities and sentiments, restoring the waste places in our national brotherhood, and uniting the people of our common country in sympathies and purposes never, we trust, to be again interrupted.

National Academy of Designs.

IT is proposed to admit a limited number of leading American architects to the National Academy of Design—a step long since adopted by the British Royal Academy and the French Institute. Several architects are already active members. On this head the *American Architect*, referring to this subject, says: "It is much to be desired that architects and other artists should be brought more together in this country, and every movement for bringing about more intimate relations will be warmly promoted by those who best understand the advantages to be gained in this way. . . . It is true that the simple election of a man as a national academician would not imbue him with artistic feeling, nor secure to him always the co-operation of his brother academicians in his work, but it would do something to interest him in other artists and them in him, while the admission of architectural drawings to the annual exhibitions would do still more; and . . . the mutual acquaintance of persons of tastes so similar could not fail to be in some way pleasant and serviceable to all."—*Ex.*

The manufacture of steel nails has made rapid progress since 1883, in which year this industry may be said to have had its beginning. During the last year there were 393,482 kegs of steel nails manufactured, the production of the three leading nail-making States being as follows: West Virginia, 204,336 kegs; Ohio, 130,636 kegs, and Pennsylvania, 29,224 kegs. In 1883 this country produced only 18,224 kegs of steel nails.—*Mining Herald and Colliery Engineer.*



PLATE 3.

APPROACHING EARTHQUAKES.—The earthquake shocks which were felt recently over a wide area in Yorkshire remind us that an authority on the subject of these phenomena, M. Delaunay, of Paris, is of opinion that next year will see the recurrence of upheavals of the earth's crust in an intensified form. M. Delaunay is a prophet of evil, but unfortunately all his prophecies have hitherto come true. His specialty is earthquakes, and he predicts them only too surely. In 1877 he announced that the year would not conclude without violent disturbances of the earth, and as a matter of fact, two frightful catastrophes on the coasts of South America followed. In 1883 M. Delaunay again pointed to approaching earthquakes, and soon after the volcanic eruptions in the Indian Archipelago occurred, by which thousands of human beings lost their lives, and hundreds of square miles of terra firma were engulfed by the sea. Towards the end of last year M. Delaunay once more raised his warning voice, and the earthquakes in Spain proved how well founded were his warnings. Quite recently he has prophesied very severe volcanic disturbances for 1886. Having acquired a well-merited notoriety in foretelling earthquakes, some weight ought to be attached to M. Delaunay's utterances. He affirms that next year these natural phenomena will be of a very intense character, and that they will show themselves either when the earth is under the direct influence of a planet of the first rank, such as Jupiter, or under that of a group of asteroids, or at a time when the sun and moon are nearest to our planet at the same time.—*Iron.*

Be Thorough.

ONE of the mistakes that young people make oftener than any other, is that of not being thorough, of thinking that it is no matter how a piece of work is done as long as it can be made to serve the purpose. An article in an exchange gives several examples to show how thorough work pays.

It was Carlyle who said, "Genius is an immense capacity for taking trouble," and George Eliot gives us the same thought in other words: "Genius is at first little more than a great capacity for receiving discipline." The most successful have always been the most painstaking. A prominent judge, living near Cincinnati, wishing to have a rough fence built, sent for a carpenter, and said to him:—

"I want this fence mended to keep out the cattle. There are some unplanned boards; use them. It is out of sight from the house, so you need not take time to make it a neat job. I will pay you only a dollar and a half."

However, afterward, the judge, coming to look at the work, found that the boards were planned, and the fence finished with exceeding neatness. Supposing the young man had done it in order to make a costly job of it, he said angrily: "I told you this fence was to be covered with vines. I do not care how it looks."

"I do," said the carpenter.

"How much do you charge?" asked the judge.

"A dollar and a half," said the man, shouldering his tools.

"Why did you spend all that labor on the job, if not for money?"

"For the job, sir."

"Nobody would have seen the poor work on it."

"But I would have known it was there. No; I'll take only the dollar and a half." And he took it and went away.

Ten years afterward the judge had a contract to give for the building of certain magnificent public buildings. There were many applicants among master-builders, but one face attracted his attention. It was the man who had built the fence.

"I knew," said the judge, afterward telling the story, "we should have only good, genuine work from him. I gave him the contract, and it made a rich man of him."

The Hon. Josiah Quincy was at one time conversing with Daniel Webster upon the importance of doing even the smallest thing thoroughly and well, when the great man related an incident concerning a petty insurance case which was brought to him while a young lawyer in Portsmouth. The fee promised was only twenty dollars. Yet, to do his clients full justice, Webster found he must journey to Boston and consult the law library. This involved an expense about the amount of his fee, but after hesitating a little he decided to go to Boston and consult the authorities, let the cost be what it might. He gained the case.

Years after this, Webster was passing through the city of New York. An important insurance case was tried that day, and one of the counsel had been suddenly prostrated by illness. Money was no object, and Webster was asked to name his terms and conduct the case.

"It is preposterous," said he, "to expect me to prepare a legal argument at a few hours' notice."

But when they insisted that he should look at the papers, he consented. It was his old twenty-dollar case over again, and having a remarkable memory, he had all the authorities in his mind, and won the suit. The court knew he had had no time for preparation, and were astonished at the skill with which he handled the case.

"So you see," said Webster, as he concluded, "I was handsomely paid both in fame and money, for that journey to Boston;" and the moral is that good work is rewarded in the end, though, to be sure, one's own self-approval should be enough.

Thoroughness implies attention to details, neatness, and method. A young man who was shrewd and exacting, but whose business habits were careless and unmethodical, succeeded by hard work and economy in establishing a prosperous business, but failed and went into bankruptcy at the early age of thirty-five, because of his carelessness in omitting to put a note for a large amount in his bills payable.—*Western Rural*.

THE GREAT PYRAMID.—Mr. J. B. Bailey writes to the *St. James Gazette* as follows, with reference to the desirability of exploring the great pyramid: "Now that Great Britain is dominant at Cairo, would it not be a good plan to clear away the sand and rubbish from the base of the great pyramid right down to its rocky foundation and try to discover those vast corridors, halls, and temples containing priceless curiosities and treasures with which tradition in all ages has credited the great pyramid? The wonderful building, of such exquisite workmanship, was erected many years before any of the other pyramids, which are only humble imitations, built by another nation, and also for other purposes; for neither King Cheops nor anybody else was ever interred beneath this mighty mass of stone. The smaller pyramids also exhibit neither the nicety of proportion nor the exactness of measurement, both of which characterize the first pyramid. From internal evidence it seems to have been built about the year 2170 B. C., a short time before the birth of Abraham, more than four thousand years ago. This—one of the seven wonders of the world in the days of ancient Greece—is the only one of them all still in existence. The base of this building covers more than thirteen square acres of ground. Its four sides face exactly north, south, east, and west. It is situated in the geographical center of the land surface of the globe. It was originally 485 feet high, and each of its sides measures 762 feet. It is

computed to contain 5,000,000 tons of hewn stone, beautifully fitted together with a mere film of cement. And these immense blocks of stone must have been brought from quarries five hundred miles distant from the site of the building. The present well-known king and queen chambers, with the various passages, might also be thoroughly examined by means of electric or lime lights. The astronomer royal of Scotland, some years since, closely and laboriously examined all that is at present known of the interior of this enormous building. He states that measurements in the chambers, etc., show the exact length of the cubit of the Bible—namely, 25 inches. This cubit was used in the building of Noah's ark, Solomon's Temple, etc. He also maintains that the pyramid shows the distance of the sun from the earth to be 91,840,000 miles.

FIRE-PROOF DOORS.—The most efficient fire-proof doors are of wood covered with tinned iron. The door is made of two thicknesses of tongued and grooved boards, crossing each other diagonally and thoroughly nailed together. The sheets of tin are bent over at the edges, forming locked joints as in a tinned roof; it is important that the edges as well as the sides of the door be covered, as its resistance to heat lies in the fact that the fire cannot burn the wood thus protected against exposure to the air, nor can it warp it, as is the case with an iron fire-door subjected to slight heat. If a fire-proof door is hung on hinges, special care must be taken to insure their security by fastening them to the door by means of bolts rather than screws, and connecting them to the wall in an equally secure manner. The latches should be selected with a view to durability, as such a heavy door is apt to be destructive of weak latches. Where the position of the doorway permits sliding doors, it is preferable to have them on tracks, care being taken that cleats be placed on the floor each side of the doorway, so as to secure the door at its lower corners when shut.

In the Boston Storage Warehouse, United States, there are a large number of such doors in the fire-walls, arranged to close an electric circuit when they are all shut, and the fact is recorded on the paper dial of the watchman's clock at certain intervals. Fire-proof doors are frequently arranged to close in advance of a fire by means of the yielding of an alloy fusible at 160° Fahr. The track upon which such a door is hung inclines about one foot in eight feet, and the door is kept from closing by means of a round stick about one inch in diameter, which reaches from one edge of the door to the opposite side of the door-frame. At the middle the stick is cut in two diagonally, and a ferrule, made of two pieces of thin copper soldered together longitudinally with the fusible alloy, covers the joint in the stick. When this ferrule is exposed to a temperature of 160° Fahr., its yielding causes the ferrule to split open, and the stick separates into pieces and allows the door to shut. In order

that the stick shall not fall in the way of the door, and that the door may be shut at any time, the stick is connected to the top of the door-frame by small chains near to each end. This simple device was designed by Mr. Lewis T. Downes, president of the What Cheer Mutual Insurance Company. Another method of utilizing this fusible alloy to close fire-proof doors and shutters, is by means of a wire extending around the room, and containing in various places links made of two pieces of brass soldered together. When the solder melts and allows the two pieces of brass to separate, the wire allows the shutter or door to close. Mr. Frederick Grinnell has improved the ordinary link by cutting a slot in one of the pieces of brass, and laying a short bit of wire therein, when they are being soldered together; the solder flowing around this wire presents a resistance in three planes, in place of the ordinary joint, which may be imperfect and lies in a single plane, concealed by the sheet brass so as to prevent inspection. Formerly solid links of fusible alloy were used, but the metal has so little resilience that it is apt to gradually lengthen, and finally break at some inopportune time.—*Engineering*.

Preservation of Building Stones.

DR. R. OGDEN DOREMUS, in a paper read before the American Institute of Architects last autumn, said that a result of porosity in building stones is that buildings, after absorbing water, effloresce, or become covered with a coating of salts, especially brick buildings laid in mortar made from sea sand. This means the decomposition of the material, besides a disagreeable appearance. In Philadelphia, after a rain, the houses are generally thus whitened. This efflorescence cannot be prevented by ordinary paint nor oil. Another dangerous result of porosity is that buildings absorb malaria. Hospitals thus become poisoned with a poison so deadly that he remarked he would sooner give his child the most deadly poison in the laboratory, and trust to the antidote, than expose him to such contagion. He mentioned many well-known buildings that were crumbling away, such as Girard College, the College of New York, Trinity Church, New York. He had dined with Goringe soon after the obelisk was set up in Central Park, and the subject of the weathering of the obelisk was suggested. Goringe said that it had stood 4,000 years, and would stand 4,000 years more. But, in fact, the obelisk is crumbling away. He showed several vials full of clippings collected at the foot of it, also specimens of stone found peeled off from inside the new Capitol at Albany.

A simple remedy was suggested, and one which has been extensively applied in St. Louis and to some extent in New York, namely, an application of paraffine mixed with a little creosote. The building is heated by a small furnace, and where there is ornamental work a blowpipe is sometimes required to heat depressions. The paraffine is then applied in a



PLATE 4.

melted condition, and sinks in about a quarter of an inch, giving a beautiful and indestructible glossy finish, and rendering the material absolutely waterproof and air-tight. In reply to a question about fire, he said that a fire would only drive it in a little. It costs on an average about fifty cents a yard, and never needs to be applied a second time, as no chemical agent in the air or in the rain affects it at all. Even caustic potash does not unite with it. If the application is made to marble that has been weatherbeaten, the marble should first be cleaned with steel brushes. Marble thus cleaned, however, unless treated with paraffine, soon becomes covered with a yellow stain. Some of the buildings in New York which have been treated with paraffine are St. Mark's Memorial Church; houses 124-6 South Fifth Avenue; Huyler's, corner Eighteenth Street and Irving Place; and a house No. 18 East Fifty-fifth Street, in a brownstone row. Every house in the row except this has its doorsteps "with verdure clad," and the growth of such mosses is destructive to the building material. The paraffine method is confidently commended by Dr. Doremus as the very best ever used.—*Builder*.

TOUGHENING TIMBER.—This is a new process by which it is claimed that whitewood can be made so tough as to require a cold-chisel to split it. This result is reached by steaming the timber and submitting it to end pressure, technically "upsetting" it, thus compressing the cells and fibers into one compact mass. It is the opinion of those who have experimented with the process that wood can be compressed 75 per cent, and that some timber which is now considered unfit for use in such work as carriage building could be made valuable by this means; and more especially since the rapid consumption of our best ash and hickory will sooner or later render some substitute necessary.

A Minneapolis artist, who has been "doing" Alaska, says that all the members of his party, and there were seventy-five of them, agreed that the Greek Church at Sitka is the finest church in America. It is built on the plan of a Greek cross, and the interior is a mass of gold and silver, of a magnificence of which a writer says he can give no idea. The walls are hung with pictures of royalty and the priesthood, sent by a Russian princess, who took this temple under her patronage.

MILL WORK ABUSED IN HANDLING.—This is a thing of common occurrence in the handling and transporting of finishes, doors, blinds, etc. Sometimes damage is done in passing the work out of the mill; such as spauling the arrises and bruising the faces and edges. But the chief source of injury occurs in the loading and unloading, many of the teamsters being of the "baggage-smasher" type, practicing but little consideration for the thing handled, so that it gets on and off the wagon, and the hauling is paid for. Frequently, by the time the mill work, doors and finishes, reaches a building, there are a great many marks, scratches, indentations, and defacements, which often cause trouble and annoyance alike to builder and architect; the former disliking to use the damaged work, which sometimes is of a character that smoothing up and sand-papering will not remedy; but as it is not always the case that the party damaging the work can be found, to fix the responsibility, as "nobody" is always the guilty party, and the contractor, rather than to discard the damaged work, and at extra expense and cost obtain perfect materials, very naturally seeks to use the imperfect, even at some sacrifice of perfect workmanship in the finishes; unless the defects are too glaringly bad, this is a natural result when dollars and cents, and a scrupulous nicety about small things, are the two opposing factors; the former is looked upon and guarded with a more jealous eye, and obtains the benefit of every doubt. If all this can be without noticeable irregularities, and results not discreditably to the architect, nobody is specially harmed; but often such defects are "fixed up" in such a shape that the architect is expected to pass them, at the sacrifice of his own judgment and ambition in the production of perfect workmanship. Ugly issues often spring from the causes outlined, by reason of the architect objecting to defects caused more through carelessness than design, yet of such character as to mar the completeness and perfectness of the workmanship involved; and although the defects may be of no great magnitude in themselves, simply a scratch or a bruise, the effect produced to the technical and practical eye of the architect competent to appreciate the niceties of perfect workmanship, is disagreeable and repulsive, and fully justifies complaint, and a refusal to accept such work.

A SMALL GREASE SPOT OR STAIN

On the dress suit of either a lady or gentleman is a *small matter* in and of itself, still no *tidy* person would willingly appear in public, or in social intercourse, until that *little thing* was removed; because "it spoils the look of the dress." And so in ten thousand other things, "looks"—appearances—produce effects, and judgment more generally follows and is shaped by the impressions made upon the visual organs. If this is so in matters generally, why not in reference to the finishes in buildings, which are continuously in view, either seen or handled every hour of the day, forming one of the permanent surroundings

of the home circle. In this view of the case, an architect cannot be "too particular" and exacting, as upon him rests every responsibility as to the harmonies and niceties which are calculated to make the abode of his client as nearly perfect as possible, all things considered.

TEAMSTERS MOST AT FAULT.

They are often unpardonably careless, dragging and tossing finished work as though it were of but little more importance than a dry goods box or an empty barrel. It is common to see the face casings of window and door panels laid on the iron bound edges of the sides of wagons, and otherwise crossing each other with no attempt at protection from chafing, and thus rode for blocks or miles over rough streets and roadways, with the friction at every step of the horses grinding away the fibers of the wood at the points of contact; so that by the time the place of destiny is reached, the things transported are in parts not fit for use. Not only the same thing occurs with panel doors, but they are often pushed and dragged on and off the load, when laid flatwise, with ungainly indentations made by the ends of the stiles digging into the horizontal parts. All this is bad, should not be, and could easily be avoided by a little care, and with cushions on the sides of the wagons to prevent the friction caused by the iron and wood coming in contact.

Hints on the Care of Tools.

THE following hints on the best means of keeping tools in good condition, which we take from the *Building and Engineering Times*, of London, cannot fail to be useful.

Wooden Parts.—The wooden parts of tools, such as the stocks of planes and handles of chisels, are often made to have a nice appearance by French polishing; but this adds nothing to their durability. A much better plan is to let them soak in linseed oil for a week, and rub them with a cloth for a few minutes every day for a week or two. This produces a beautiful surface, and at the same time exerts a solidifying and preservative action on the wood.

Iron Parts.—Rust preventives.—The following recipes are recommended for preventing rust on iron and steel surfaces:—

1. Caoutchouc oil is said to have proved efficient in preventing rust, and to have been adopted by the German army. It only requires to be spread with a piece of flannel in a very thin layer over the metallic surface, and allowed to dry up. Such a coating will afford security against all atmospheric influences, and will not show any cracks under the microscope after a year's standing. To remove it, the article has simply to be treated with caoutchouc oil again, and washed after 12 to 24 hours.

2. A solution of India rubber in benzine has been used for years as a coating for steel, iron, and lead, and has been found a simple means of keeping them from oxidizing. It can be

easily applied with a brush, and is easily rubbed off. It should be made about the consistency of cream.

3. All steel articles can be perfectly preserved from rust by putting a lump of freshly-burnt lime in the drawer or case in which they are kept. If the things are to be moved (as a gun in its case, for instance), put the lime in a muslin bag. This is especially valuable for specimens of iron when fractured, for in a moderately dry place the lime will not want any renewing for many years, as it is capable of absorbing a large quantity of moisture. Articles in use should be placed in a box nearly filled with thoroughly pulverized slaked lime. Before using them, rub well with a woolen cloth.

4. The following mixture forms an excellent brown coating for protecting iron and steel from rust: Dissolve two parts crystallized iron chloride, two antimony chloride, and one tannin, in four water, and apply with a sponge or rag, and let dry. Then another coat of the paint is applied, and again another, if necessary, until the color becomes as dark as desired. When dry it is washed with water, allowed to dry again, and the surface polished with boiled linseed oil. The antimony chloride must be as nearly neutral as possible.

5. To keep tools from rusting, take $\frac{1}{2}$ ounce camphor, dissolve in 1 pound melted lard; take off the scum and mix in as much fine black lead (graphite) as will give it an iron color. Clean the tools and smear with this mixture. After 24 hours rub clean with a soft linen cloth. The tools will keep clean for months under ordinary circumstances.

6. Put 1 quart fresh slaked lime, $\frac{1}{2}$ pound washing soda, $\frac{1}{2}$ pound soft soap in a bucket; and sufficient water to cover the articles; put in the tools as soon as possible after use, and wipe them up next morning, or let them remain until wanted.

7. Soft soap, with half its weight of pearl-ash, 1 ounce of mixture in about 1 gallon boiling water, is in every-day use in most engineers' shops in the drip-cans used for turning long articles bright in wrought-iron and steel. The work, though constantly moist, does not rust, and bright nuts are immersed in it for days till wanted, and retain their polish.

8. Melt slowly together 6 ounces or 8 ounces lard to 1 ounce resin, stirring till cool; when it is semi-fluid, it is ready for use. If too thick, it may be further let down by coal oil or benzine. Rubbed on bright surfaces ever so thinly it preserves the polish effectually, and may be readily rubbed off.

9. To protect metals from oxidation—polished iron or steel, for instance—the requisite is to exclude air and moisture from the actual metallic surface; wherefore, polished tools are usually kept in wrappings of oil cloth and brown paper; and, thus protected, they will preserve a spotless face for an unlimited time. When these metals come to be of necessity exposed, in being converted to use, it is necessary to protect them by means of some permanent dressing; and boiled linseed oil, which forms a

lasting film of covering as it dries on, is one of the best preservatives, if not the best. But in order to give it body, it should be thickened by the addition of some pigment, and the very best—because the most congenial—of pigments is the ground oxide of the same metal—or, in plain words, rusted iron reduced to an impalpable powder, for the dressing of iron or steel—which thus forms the pigment or red oxide paint.

10. Slake a piece of quick lime with just water enough to cause it to crumble, in a covered pot, and while hot add tallow to it and work into a paste and use this to cover over bright work; it can be easily wiped off.

11. Olmstead's varnish is made by melting 2 ounces resin in 1 pound fresh sweet lard, melting the resin first and then adding the lard and mixing thoroughly. This is applied to the metal, which should be warm if possible, and perfectly cleaned; it is afterwards rubbed off. This has been well proved and tested for many years, and is particularly well suited for polished and Russia iron surfaces, which a slight rust is apt to injure very seriously.

Rust Removers.—1. Cover the metal with sweet oil well rubbed in, and allow to stand for 48 hours; smear with oil applied freely with a feather or piece of cotton wool, after rubbing the steel. Then rub with unslaked lime reduced to as fine a powder as possible.

2. Immerse the article to be cleaned for a few minutes, until all the dirt and rust is taken off, in a strong solution of potassium cyanide, say about $\frac{1}{2}$ ounce in a wine-glassful of water, take it out and clean it with a tooth-brush with some paste composed of potassium cyanide, Castile soap, whiting and water, mixed into a paste of about the consistency of thick cream.

What Mr. Spurgeon said about advertising in one of his recent lectures: "Advertise, for the life of business is printers' ink." He probably, at the time, had in mind the fact that advertising is the staff of life in trade, just as bread is the staff of human life. For if a man wants his name and business to be known, he must keep them before the people. He must let them know where he is, what he is, and what he is doing. What! you doubt if advertising in trade journals does this so effectually as other methods you might mention? Where do you look to find the names of the most successful men you are acquainted with in trade? In the trade papers? Of course. Is your name beside theirs? A commercial man who gets through life persistently ignoring the value of advertising might have his brains exchanged for the stump of a crossing-sweeper's broom, and get along quite as well. Why, when people see a man advertise they know at once he is a business man, and his advertising proclaims that he is not above business, but anxious to do business.

The new building law for the city of New York, which has just been published, proves to be in many respects better and more convenient than that which it supersedes; and

although we are rather disappointed to find that some of the improvements which might have been adopted have not been, the statute, on the whole, marks a decided advance in the official regulation of construction in this country. Among its other merits, the text of the new law embodies many regulations and decisions of the Inspector, which have hitherto formed, so to speak, a part of the common law in regard to building operations, but, not appearing in the official edition of the statute, were only to be learned by architects at the expense of a good deal of trouble and annoyance; and these, particularly the younger ones, will be glad to have at least the greater part of what they are expected to know presented to them in shape for use. One of the principal points of difference between the new and the old law relates to the thickness of brick walls; stone walls, by the way, being entirely ignored in both laws. According to the former statute, no authority could be obtained for building any brick walls less than twelve inches in thickness. The powers of the law seem to have assumed that no New Yorker, however poor, would condescend to live in anything less imposing than a four-story house; and they oblige the builder of a house ten feet high to make all the walls exactly as thick as if it were fifty-five feet high. This provision, by unreasonably increasing the cost of small dwellings, has undoubtedly tended strongly to drive the poorer people of the city into the tenement-houses, which form the reproach of New York; and the new law, very wisely, as we think, modifies the rule so far as to allow houses not more than twenty feet wide, and thirty feet high, to be built with eight-inch walls above the basement, and so that blocks of houses twelve and one-half feet wide, and not over fifty feet high may be built with every alternate party-wall eight inches thick. There is no question that an eight-inch wall, which is, in proportion to its mass, the strongest wall which can be built with bricks, possesses ample strength, if properly built, for carrying the floors and roof of a dwelling house of such modest dimensions; and although the brick-makers may regret the change, hundreds of independent and home-loving workmen will welcome it as bestowing upon them the long-desired privilege of building and owning houses on terms as favorable as those which their brethren in Philadelphia and other cities enjoy.—*American Architect and Building News.*

The strongest wood in the United States according to Prof. Sargent, is that of the nutmeg hickory of the Arkansas region, and the weakest the West Indian birch (*bur seva*). The most elastic is the tamarack, the white or shellbark hickory standing far below it. The least elastic and the lowest in specific gravity is the wood of the *Ficus aurea*. The highest specific gravity, upon which in general depends value as fuel, is attained by the blue-wood of Texas, *Condalia obovata*.

TIMBER IN WASHINGTON TERRITORY.—Some idea of the great wealth of the timbered lands in the western part of Washington Territory may be gleaned from the following report which we take from the Portland, Oregon, *Journal of Commerce*:—

All that portion of Washington Territory lying between the Cascade Range on the east, Coast or Olympic Range on the west, and between the 47th and 49th degrees of north latitude, is a thickly timbered belt of fir, cedar, alder, maple, and other woods. Of these fir probably represents three-fourths. In the midst of this wealth of forest, nature has placed a broad, deep arm of the Pacific Ocean—Puget Sound—with which it is connected by the Strait of Fuca. Thus not only has nature provided the timber, but the water-way also, by which it is possible for the merchant marine of the world to come and obtain their lumber supplies, much of which sometime in the future must be furnished from these forests. Already the lumber trade with Australia, Central and South America, China, and the islands of the Pacific amounts to fully 75,000,000 feet a year, and employs a fleet of about fifteen vessels every month.

Puget Sound is 200 miles long, and has a shore line of 1,800 miles. This irregular shore line forms innumerable harbors splendidly adapted for the erection of saw-mills and other wood-working factories, and also for the establishment of ship yards. Along this whole shore line, and from thence on both sides as far as the eye reaches, nothing can be seen but the vast and magnificent wealth of timber, save here and there where man has established a mill port, a town, or an occasional farm.

In the timber belt of western Washington there are 20,000,000 acres covered with timber, most of which is included within the limits named—an area nearly equal to the combined areas of the states of Connecticut, Massachusetts, Vermont, and New Hampshire. This timber belt will average 25,000 feet of lumber to the acre, or a total of 500,000,000,000 feet of lumber. Hence the saw-mills of Puget Sound, with their present capacity of 500,000,000 feet per year, would take 1,000 years to cut it down. The fir trees frequently attain the height of 250 feet, and planks of lumber are sometimes turned out of these mills 100 feet in length.

There are now erected in this district, as near as we can ascertain, 24 mills, the aggregate value of which is \$5,320,000, with a daily cut of 1,300,000 feet.

In addition to the foregoing statement of the wealth of the mill corporations, very many of them also own sailing vessels and steamers, which are engaged in carrying lumber from the various mill ports to San Francisco and foreign ports. Many of these corporations have agencies in San Francisco, where they own properties in the shape of lumber yards.—*American Engineer.*