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CHANGE OF TITLE.

NEWS BEING SUBSTITUTED FOR RE- VIEW.

Hereafter this journal will be known as the CALIFORNIA ARCHITECT AND BUILDING NEWS. This change has been decided upon as shortening the title line one syllable, and as more appropriate to the objects and character of the journal. We presume that our readers and friends will cheerfully acquiesce in the adoption of the new name as more appropriate and convenient.

Pacific Coast Association of Architects.

The regular monthly meeting of the Association was held on Friday, the 6th inst., President Laver in the chair. The number present and the interest manifested in the proceedings were exceedingly gratifying, and confirmatory of the hopes of its projectors and founders, that the Association will in time become one of great importance and influence generally, and of special value to the profession on this coast.

After the reading and adoption of the minutes of the previous meeting, the committee appointed at the December session to consider and report upon the designs presented for a front page and heading for this journal, made their report, which will be found in another column of this issue, to which we call the special attention of architectural draughtsmen and students generally upon this coast; hoping that the inducements offered in the way of premiums, and the guide therein furnished, may result in something handsome

in itself, and alike creditable to the successful parties, and the young men of the profession generally. This may fairly be considered as the commencement opportunity for our young men, to be followed by other inducements hereafter to be devised, calculated to stimulate ambitions and open up a broader field to those who have resolved upon the architectural as the chosen pursuit of life.

The committee on by-laws reported progress, awaiting such action as may be adopted in the matter of resolving the Association into a chapter of the "American Institute of Architects."

The Secretary submitted his report in reference to signatures by the architects of San Francisco to the petition in favor of Mr. Laver's appointment as architect of the New City Hall, to which scarcely a single architect in the city called upon had declined to add his name; and those who had declined did so upon other grounds than opposition to the appointment. The petition as signed was, by vote of the Association, handed to Mr. Laver, who with appropriate and earnest remarks returned thanks to the Association and members of the profession generally, for this kindly expression of confidence and professional esteem.

The matter of forming a "School of Designs" was discussed favorably, with unanimous approval of the adoption of measures in the near future calculated to enlist the interest of students of architecture in higher and more perfect architectural culture and attainments. Many of the young men in the profession exhibit qualifications to become competent architects, and will in time enter upon the practice of the profession with the qualifications acquired through the preparatory advantages enjoyed, whether the Association assist them in their studies by establishing schools of designs and otherwise, or refuse the helping hand by barring the doors of opportunities, and leaving them to work out their future unassisted. Consequently we consider a perfected movement of the kind suggested one of vital interest to the profession generally, as through its influence our offices will be supplied with more competent draughtsmen, and the "coming architects"—those who will work the field now occupied by many of us who have grown gray through long years of diligent study and application to the duties of our profession—will be the better qualified to pick up the threads broken by retirements or the hand that severs all earthly ties, and the generous helping of those who are striving to learn will bring its own reward.

The Secretary also reported the acknowledgment of the receipt by the American Institute of Architects, convened in annual session, of the application of Messrs. Wright, Curlett, Welsh, Sanders, Babson, and J. E. Wolfe, to become members, with the information that the applications were hailed with manifestations of great pleasure, as completing the circle of the Institute's influence from the Atlantic to the Pacific shores of our great country. We hope that this coast will be duly represented at the next annual convention, in the person of a representative from the membership in California. We may add, that since the meeting of Friday last the members elect have received their credentials, or notices of election.

A resolution appreciative of Mr. Wright's course in connection with the egresses from theaters and public halls was passed unanimously.

The President then called the attention of the Association to the fact of the death of the late Mr. George Edmund Street, a distinguished Eng-

lish architect, whose exceptionally high reputation placed him in the profession second to none living. Also, President Royal Institute British Architects, a Royal Acadamecian, a Fellow of the Society of Arts, Professor of Architecture at the Royal Academy, London, England, Architect of the New Law Court, London, and many large public and private buildings in Europe. In addition to his splendid qualifications as an architect, he also possessed fine literary abilities, having published a book on Brick and Marble architecture in Italy, and another on Gothic architecture in Spain; and in various ways established his superior abilities as an architect and writer, in the broader and more comprehensive senses. The death of eminent men in any profession causes a feeling of regret and sympathy in all hearts; but in the case of Mr. Street the sentiment of sorrow is more special to the architectural profession, particularly as he has been called away almost in the prime of life, and before his great work was fully completed.

A committee of three was then appointed, consisting of Messrs. Wright, Sanders, and J. E. Wolfe, to prepare suitable notice of the sad event.

The meeting then adjourned, to meet the first Friday in February.

Inventors and Progress.

One who sign himself "Inventor" writes in answer to some strictures passed upon inventors by a Stockton paper, claiming that inventors are idle, designing persons, who are always endeavoring to live without work, always looking for the opportunity to entrap some unwary capitalist into investing money in their inventions. Such remarks applied to the inventors in general is a base, ungrateful slander. One has only to look into the present working of any department of the arts or manufactures to learn the service of invention to industry. Every item of progress, from the rude processes and appliances of the ancients, has been the work of the inventors. As a rule, the improvements have cost a great amount of experiment and effort and actual outlay to those who have achieved them. There is, of course, now and then a happy thought; but the average of effort for each invention is very great. It is but natural that the successful laborer in the field of invention should desire to enjoy a part of the fruits of his labor, and the people of the United States and other civilized countries have decided that his claim is a just one. What would farming be without the triumphs of the inventor? Contrast the labor it is now possible to accomplish by one man's labor with what was done by a man in the early days. Contrast the gang-plow with the forked stick, the self-binding reaper with the sickle, the thrashing outfit with the flail. People who decry the service of the inventor to the industries are relics of a bygone age. They have no part or parcel in the progress of the day. Agriculture has enjoyed her full share of the inventors' attention, and while she has been advanced, they, in turn, or many of them, have become enriched. It is a case of useful labor well requited, and there is much of it to do. Excellent as are our agricultural tools and machines, no one can tell what further improvement may come to them through the inventor's earnest efforts.—*Mining and Scientific Press.*

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The Oakland Hall of Record.

We refer to the recent trial of a case in one of the courts of Alameda County, in which the professional integrity of the architect of the Hall of Records, erected in 1879, was sought to be impeached, mainly in view of its bearing upon the profession generally. Whether justifiable or not, it is the common rule among the masses to criticize, and impose upon the several classes of professions the odiums created by the personal acts of individual members. The great injustice of this rule, however, must be admitted by all reasonable and intelligent men. There can be no profession or calling named in which there are no faulty natures and dispositions—the church of the Most High itself, and the numerous benevolent institutions designed for good to mankind, not excepted. It therefore follows, that individuals alone should be held responsible for their acts, without any reflection upon the class with which, by business or professional relationship, they may be connected.

We do not propose to enter into the merits of the case referred to, in which Mr. Nutting charged that the architect, Mr. Stokes, received money as a bribe, by which the public interests of Alameda County were made to suffer; if such was the fact, the jury decided the charge not sustained, from lack of proof or otherwise, as the case may be, and so far vindicated the defendant, leaving him at least legally exonerated from the charge. Still, the fact that the charge was made, with many presumptions of the occurrence of some irregularity, which, whether justified or not, has created a public sentiment for and against each of the respective parties to the suit: as the theory is universally accepted, that where there is smoke there must, in the nature of things, be some fire. Consequently, it is an unfortunate affair, as, beyond all possible prevention, some will cling to the probability of moral guilt, although the acquittal removes all legal responsibility. The case suggests two considerations worthy of notice: First, as sustaining the recent efforts of the architects of this coast in founding and sustaining an architectural association, designed to cultivate and bring into practice a higher sense of duty among its members, and the adoption of such regulations as shall deter those who might be unmindful of the responsibilities which rest upon them from violating good faith and honest performance of every trust. With this as the foundation, the beauties of the structure should be further exemplified by rules and regulations which would render irregularities by members a dangerous and venturesome expedient. We have an exemplification of this proposition in a recent exposure of an attorney in this city, who, seemingly having committed some irregular professional act, was subjected to investigation by the Bar Association, and being found guilty, the case was reported to the higher court, which, having the power to do so, suspended the offending party from certain privileges for a term of six months. The mere suspension, however, is but a small proportion of the penalty inflicted, the greater being the impairment of his hitherto good name and reputation. As far as the individualities of the parties to the irregular transaction were concerned, we presume that the members of the bar had no special interest; but realizing that if they sustained the gentleman who, for the time being at least, disregarded the purity of obligations resting upon him as an attorney, by continuing him in undisturbed fellowship as a member of the bar, they would thereby assume, in effect if not in fact, the responsibilities of the questionable transaction; and as a necessary protection to their common interests and the reputation of the bar, the course pursued was adopted.

The Architectural Association, however, has no powers above its own organization, whose authority may be invoked to inflict punishments.

But this it can do: Establish unimpeachable rules of practice, admit to membership none but worthy and qualified men, and exercise a mutual watchcare over the general interests of the profession, holding to strict accountability every member who shall be found guilty of wrong-doings. And in cases where it is fully deserved, follow the example of the Bar Association, so far as to let the public understand the estimate in which the association holds its members when guilty of crooked procedures. By such a course, and other wise and self-protecting regulations, the honorable men in the profession will surround themselves with defenses which must prove personally beneficial; while the community will be advised as to who are unwilling to assume or have violated society rules and regulations, leaving it to owners to choose between men of recognized competency and integrity, and those who prefer not to bind themselves under obligations which furnish at least reasonable assurance of faithfulness and honesty. But space will not permit enlargement upon the many suggestions which naturally arise in the consideration of the matter in hand. Again: the subject-matter of this article presents strong arguments in favor of the position assumed by this journal upon the matter of "competitions." The plans in the case in question were competitive; and those presented by Mr. Stokes being approved, upon merit or through personal influence, as the case may be, he was naturally awarded the superintendence, which led to the suit referred to. Had it been otherwise, and the gentlemen having the matter in hand devoted as much time to the selection of a recognized competent and responsible architect as they did in the matter of competition, they would at least have secured a far more handsome building at the same outlay, and quite as likely avoided the unpleasant issues which have developed from the course pursued. Mr. Stokes might have been the selected party, but if so, it would have been under widely different circumstances; and with integrity on the part of the managing powers, he would have held himself above all money approaches from those performing the work of construction. The system of competition for plans involves and invites departures from rectitude on the part of all concerned, and the sooner it is entirely abandoned, and the "cat's paw" use that is so generally made of the profession in such cases dispensed with, the better it will be for all parties concerned and the common interests of the profession.

A Curious Building.

A writer in the *British Advertiser* makes mention of a little church in Essex, built in the early part of the eleventh century, of which the walls are composed merely of portions of trunks of trees—thick outside slabs—split or roughly hewed off, measuring twelve to eighteen inches across, and ten to twelve inches thick, roughly joined with tongues, but smooth on the inside. These uprights, never more than five to six feet high, were originally tenoned into a head and sill, but in restoration, carefully carried out some years ago, the sill had to be removed, and the lower ends of the timbers cut off as far as they had rotted, and a new sill on brick work substituted. Substantially, however, we see a wooden chapel of the eleventh century, and the timbers sound and healthy, standing as they were then set up. One of them on the north side, where there was an original doorway, has a notch cut into it for the purpose of holding a holy water vessel. It seems pretty certain that this chapel was erected for the purpose of receiving as a temporary resting place the body of St. Edmund, the King. So here is an open book on the earliest wooden construction in England, which anyone may read.—*Southern Manufacturer and Builder.*

A Lesson In It.

Although the recent falling of two brick buildings in the city of New York was attended with fatal consequences, the occurrence has had a wholesome effect in other connections. It has at least aroused and vitalized the attention and energies of the Building Bureau of that city, the "inspectors" of which have found well-nigh two hundred unsafe buildings, which the occupants have been warned to vacate, the owners notified to tear down immediately, and the police placed on watch over them, to give timely warning in case of sudden imminent danger. There has also been found nearly as many other buildings so much out of repair that the owners have been notified of the necessity for further investment on repair account.

The fact that the greater number of the condemned buildings are not old, dilapidated affairs, but of more modern construction, illustrates the departures from right rules and practices in constructive science so generally practiced in almost all cities during the last ten or twenty years. In numerous cases, the old idea of "building well" has given way to the shoddy class of constructions, particularly those erected for rent or sale. It is astonishing how little value is placed on human life and health by those who build houses for other people to live in. The controlling purpose of such owners is economy, cheapness of construction, with but little regard to the many bad consequences which so generally follow in such cases. It is well and ~~advised~~ for owners of real estate, and all others, to use legitimate and wise economy in all things; but no one should be permitted to practice savings which endanger the life or health of others. And as we know of nothing in the common order of things which is more dangerous to life and limb than buildings so constructed that they are liable to tumble down at any moment, and that, too, as a rule, with no preceding warning to those unfortunate enough to be found under their roofs.

There are three special reasons why the matter of house building should be legislated upon, and laws and ordinances passed regulating the manner of construction, and the quantity and quality of material to be used. The first of these is that already mentioned, the great desire of owners to secure large returns upon their investments. This is all right and proper, when fair and just considerations control in all other directions. But when sought at dangerous risks to others, and with no regard to common rights, there should be some means provided to regulate matters. Again: there are thousands of reckless men claiming to be practical mechanics, who should be under such control as would prevent them perpetrating the bad things so often done to the disgrace of mechanical pursuits—men who care nothing for consequences, however sad and terrible they may be, so that by the operation they pocket the larger amount of filthy lucre. It is no uncommon thing to hear such men express their entire indifference to all that may happen as the result of their imperfect work, so that they "get it off of their hands" and obtain their pay. The third special reason is, that there is to be found in every city of any note men professing to understand the science of architecture, who are almost profoundly ignorant of all right architectural knowledge, and incapable of determining the compressive, tensile, or any other quality or value of the material employed, simply gaining positions as architects by means of misrepresentations or the sale of their worthless services at a nominal price. It is not to be wondered at, that buildings erected under such circumstances should tumble down, nor should their falling cause regret or sympathy upon the part of others, so that those who caused, designed, and executed their erections, and no others, should be occupants at the time of the tumbling.

Description of the Steel Square.

Being a History and Description of the Square. Methods and rules given by which the length and bevels are obtained of all kinds of rafters, braces, collar-beams, brackets, etc. Its application to the various cuts in stair-building. The whole designed to be a complete help to mechanics, by which they can work in a systematic manner all the various problems in regard to the cuts in carpentry.

After satisfying yourself that every line and figure is perfect, then prove your square, and see that it deserves its name. For this purpose get a board above five feet long and eighteen inches wide. Have one side of the board smoothly dressed. Also one edge. The latter must be perfectly straight, so as to insure the best results. Lay the inside of the "body" of the square against the straight edge of the board, so that the "tongue" will be about the middle of the board, and the blade to your left. Hold the square very firmly against the straight-edge, and with a sharp penknife, inscribe a line the full length of the "tongue," on the outer edge; then reverse the square and bring the outer edge up to the knife-mark. If both mark and edge agree perfectly, you can be sure your square is correct, taking the inside of the square as the guide. But to be very exact, place the outside edge of the square perfectly true with the straight-edge, and the outer edge of the tongue to the knife-mark. Observe if both square and mark agree; then reverse the square, and repeat the operation. If you find the edge of the square has been in exact concord with the knife-mark through all the different trials, you can be sure that the square is perfect. It would be well to test the inner side in the same manner. *Be sure to have your straight-edge perfect.*

The above is the usual method used in proving a square true. It often happens, however, after much time has been spent in the operation, the supposed-to-be-true square is still found to be inaccurate. By following the accompanying plan, all inaccuracies may be remedied, and the square be made so as to produce perfect work.

Make a straight-edge, one that is what it purports to be, of any width from 3 inches upward. Secure this to the face of a board of proper width, or the top of a work-bench may be used, if in proper condition.

Then, by grinding or filing, if need be, straighten the outer edge of the blade, and reduce its width to exact parallels. This being done with precision, place the straightened edge of the square against the straight-edge, and mark along the edge of the tongue with a penknife; reverse the position of the square, and the slightest variation that may exist will at once be exposed; such variation may be corrected with the necessary grinding or filing, leaving the square a perfect right-angle. Of course, it will be necessary to notice

that the two edges of the tongue are perfect parallels. It would also be well to notice that the square has a true taper from the "heel" to the point. At the heel the blade should be 3-16ths of an inch in thickness, and 1-16th at the point. This fact is important, and should receive careful attention.

The width of the blade being in even inches (2), the inch mark on both edges of the tongue correspond. But the width of the tongue being uneven, viz., 1 1/2, the inch marks along the two edges of the blade do not correspond.

Along the face of the "tongue" will be noticed two parallel lines, with a row of dots, interspersed with figures between them. The figures simply show that the dots are numbered by tens. This is known as the "eight square," or octagonal scale. This scale is based upon the fact that each face of a regular octagonal scale is almost exactly five-twelfths of its shortest diameter.

In using the scale, the timber is first squared to the diameter desired for the octagon, and a line drawn from the center of each face to the center of the opposite face; then, with the dividers, as many spaces of the scale are taken as there are inches in the diameter of the timber, and the distance thus obtained is set off each way from the center line upon each face, which gives the position of the angles of the octagon.

For instance: let A B C D be the square end of a stick of timber six inches on a side. Draw the center lines A B and C D from the center of the faces A and C. Now with the dividers take from the scale 6 spaces, and lay off this space on each side from the center of each; as, A 1, A 8, D 2, D 3, B 4, B 5, C 6, C 7; join by a line the points 1 2, also 3 4, 5 6, and 7 8; and you have the outline of the largest octagon stick that can be cut from this piece of timber.

Along the center of the face side of the blade will be noticed a row of figures at right angles to those marking the inches. These are used to find the depth of mortices, etc. We have also heard these set of figures denominated the *water gauge*, the arrangement of the figures being such that if the end of the blade is inserted in a narrow box or tank with water in it the depth is easily seen.

TO BE CONTINUED.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Unightly and Damaging Sand-Hill.

The most objectionable "sand-hill" remaining within the populated portion of San Francisco is that bounding on and extending west from Franklin Street, with the line of O'Farrell Street as about its center; its altitude being about sixty feet above the grade of Franklin Street. By it, nearly two full blocks are rendered worthless for all practical purposes, while its existence retards the grading and improvement of other valuable property between Franklin Street and Van Ness Avenue, north of O'Farrell Street. Why this hill is permitted to remain is a matter of general remark and surprise. There are but few if any more eligible and beautiful building sites within the city limits than the two blocks referred to would be, if reduced to a building grade. Why the owners of such desirable property should permit it to remain in its present wretched condition is not explainable by any practical business theory. It is commonly understood that economy is the real cause—the hope that the public will need the sand for various purposes, and in time, by degrees, will cart the hill away, without expense to the owners thereof. In the mean time, the expenses are heaping up cost, far in excess of the fancied economy, in the shape of interest, taxes, etc., while time and waiting are not likely to add anything to after value. Desirable building property has already been sold at a high value, and it is not likely that five or ten years hence building lots in the blocks referred to will be worth any more than they would bring at the present time if the sand-hill was removed. It is also an assured fact, that the cost of grading will be greater in the future than it would be at the present time, as the "fills"—places of deposit for removed material—are fast disappearing, and becoming less every day; and even admitting, for argument's sake, the unlikely possibility that labor may be less, the decrease in "dumps" will more likely increase instead of diminishing cost of grading in the future. The practical facts in this connection are, that grading and excavations, which twenty years ago were effected at from 15 to 20 cents per cubic yard, cannot be done now for less than 30 to 40 cents, and as high as 50 and 60 cents have been paid within the past six or eight years, when "times have been lively." Those who delay grading their property until Mission Creek and the water front fillings are completed will pay a considerable advance on present cost, as "dumps" miles away will have to be found. Besides this, the maintenance of this sand-hill is an injury to the surrounding property. If it was removed, many fine residences would be erected upon lots at present covered by sand drifted from the hill in question, while the graded property itself would doubtless be improved. Consequently, we hold that the hill is, and should be declared by the authorities of the city, a great public nuisance, and its removal compelled by legal process, if there is sufficient law for that purpose; and if there is not, there should be. Property owners should no more be permitted to maintain nuisances in the shape of sand-hills, which compromise the improvement of an entire neighborhood, than other citizens have to violate the regulations enacted to prevent like offenses in other forms. The owners of the property in question may claim that they have a right to do as they please with their own, and that they will grade when it suits them. Such is their legal privilege, with this qualification: that *personal rights and privileges* cease at the point where infringement upon the rights and interests of others, or the city and community at large, begins. And there exists no shadow of question that the matter under discussion is detrimental to all immediate surroundings, injurious to many who own valuable adjacent property, and subversive of the city's and taxpayers' rights generally. We

wonder at the patience and submission of owners of the surrounding property, and that they have not moved in efforts to abate the nuisance, particularly City Assessor Badlam, whose elegant residence stands at the south-east corner of Franklin and O'Farrell streets, at the base of the obnoxious sand-hill, from which, during the windy season in particular, he receives "abundant showers of sand." And although his house stands at a high elevation, and faces the west, never once has it been his pleasure to behold the sun sinking beneath the western horizon, except, perchance, from a perch upon the roof. West from this hill, between Gough and Octavia Streets, there are two other less objectionable hills, separated by the O'Farrell Street cut, but being mainly rock formation, they are less injurious to the adjacent property; but their unsightliness is a great drawback to improvements in the neighborhood, and they should be removed.

We again repeat, that the section of city in question has no superior in point of eligibility and desirableness for first-class residences, being well elevated, on the "southern slope," and lying between two, and within convenient access to three or four, lines of street railroads; and all the arguments favor immediate grading, while present facilities for deposit of the material exist. And in view of the improbability of a compensating rise in the value of the property by delaying operations, and the continuous loss in interest and tax expenses from year to year, divests the case of all feasible arguments in favor of a continuance of these unsightly and damaging hills.

The Plank Sidewalk Nuisance.

Ever since the personal injuries received by us in April last, through the defective condition of the sidewalk in front of property owned by Mr. John D. Spreckels, and at which that gentleman has not so much as expressed a regret, although the occurrence to us was a most serious one, we have very naturally noticed the like "stumbling-blocks" in various parts of the city, and have seen many men, women, and children stumble over them, with greater or less injurious effects. Hundreds of children at play are tripped up and thrown violently on the hard planking, and sometimes they have to be assisted to their homes, with bleeding noses and lacerated or bruised hands and faces. Many ladies, too, in "delicate conditions" are made to stumble; and fierce oaths from time to time issue forth from many lips, under the provocation of sudden shocks and jars occasioned by these cruel and mean obstructions in our public thoroughfares.

We have a society for the "prevention of cruelty to animals," and there should be one, the objects of which should be the arrest, conviction, and punishment of every owner of property maintaining, permitting, or failing to remedy every defect in the sidewalks in front of his property, of the character referred to. It is but little less than *unfeeling brutality* on the part of persons who, by any means, whether neglects or positive acts, causes injury to another. The shooting down and killing of another who inflicts a blow with the fist is generally accepted by juries as a justifying provocation for the act; but the effect of one or many fist-blows are harmless compared with the injury of a limb for life, a wrenched back, or other severely painful happening occasioned by the willful and deliberate neglects of property owners.

These stumbling blocks abound more or less all the year through, but with the setting in of the rainy season they become more numerous. The rains cause the planking to swell, and if the resistance is sufficient within a given space, the planks which are the less firmly spiked bulge up and form ugly ridges, measuring from a fraction

of an inch up to three, four, five, and in some cases six inches. It is unnecessary to repeat, that these ridges in sidewalks are exceedingly dangerous affairs.

The Mission section of the city is particularly cursed in many parts with this kind of sidewalks. There are a number on Valencia street, with several fearfully large "tripper ups" between 22nd and 23rd streets. On Capp street, between 20th and 21st streets, there are many bad ones, besides innumerable lesser specimens on every street. There ought to be a "privilege act" passed by the city—a law that would establish the right of the poor in such neighborhoods to tear up and use for fire-wood or otherwise the planking of all sidewalks not kept in perfect repair by their legal owners. We understand that this is rather an absurd proposition; but if there could be some peremptory measure provided which would impart a forcible lesson upon negligent owners, it would exert a wholesome influence. The slow process of law to recover damages for sprained ankles, dislocated limbs, split or displaced knee-caps, sprained backs, etc., makes many submit to their injuries rather than seek redress by the way of the legal tribunals, and thoughtless and *unfeeling* men, who should be made to pay for their neglects, become hardened in their indifferences.

Mutilated Coins.

Not until people fairly refuse to take mutilated coins, remarks the *Banking and Mercantile Register*, will the nefarious practice of clipping them die out. A coin with a hole bored in it is not worth its face value. It is easy to understand that the clippings, filings, and borings, melted together, amount to a valuable consideration, and it is apparent that the old coins have lost all that this new piece amounts to. This is the reward of the coin clipper, and his trade pays well. During Queen Elizabeth's reign, in England, the coin clippers drove a flourishing trade. Clipping coins to save the metal clipped off had become such a source of loss, that it was declared high treason, and made punishable with death. The penalty continued long after, but it seemed to accomplish no staying results. In one day, for example, seven men were hanged in London, and one woman burned, for clipping. Still the clipping went on. One coin clipper, when about to be hanged, offered thirty thousand dollars for a pardon; and Macaulay says, that this evidence of how the crime paid did more to encourage it, far more, than the hanging of the men did to discourage it. Public opinion was against the hanging, and favored the clippers, as they took so little from each piece that it amounted to almost nothing.

To show how the abuse of the coins went on, it is related that in 1695, a lot of coin that should have weighed two hundred and twenty thousand ounces was weighed, and really showed one hundred and fourteen thousand ounces. Nearly half the value had been abstracted.

The penalty for coin clipping in the United States, at the present time, is a fine of two thousand dollars and two years in prison. How soon the practice will die out altogether it rests entirely with the people to decide.—*Leffel Mechanical News*.

The term "charcoal" on tin plates is a fraud, and always was. None but coke irons have ever been used in the manufacture of tin plate. In fact, the most ductile irons made in England or on the continent of Europe are smelted with coke. This country produces brands of iron better adapted, to making tin that any in the world. Our best West Tennessee and Alabama irons are as much superior to British brands for tin plate as they are for boiler iron or carwheels.—*Chattanooga Tradesman*.

"First-Class."

The indiscriminate application of the term "first-class" to almost everything done or produced divests it of any practical, defined, or certain meaning. Yet people are deceived by it, and frauds of the most shameless character are perpetrated by promises and pledges that the thing proposed is or shall be "first-class." That portion of the old adage, "that fools build houses," etc., is fully exemplified in most cases when people pay their money to some preacher of the "first-class" doctrine, who makes his way through life by practicing "first-class" deceptions. The man who intends to cheat and defraud is quickest to parade his "first-class" promises, and those who talk most about their "first-class" abilities are generally the least qualified to do anything correctly. The term certainly means superiority; but there are tens of thousands of things done and sold as "first-class" which do not possess a single superior quality. It is used in common practice as a decoy—a cloak or covering so elastic in character as to fit anywhere and everything—and those who are deceived by it simply expose their innocence and inexperience, if not their weakness and want of common sense.

Those who build houses on speculation, and save in their construction every dollar there can be saved without prejudice to disposal, and who almost scrupulously avoid everything of really first-class character, never attempting to introduce more than the absolutely necessary and feasible, will fairly swear that such buildings are "first-class," built by day's work, etc.; in all of which there is but the one purpose—to sell. And we rather strongly incline to the opinion that there are but few of that race of people living now who used to consider it a sin to lie; and the form which the new departure in moral rectitude assumes is shaped altogether by the circumstances surrounding. The general rule of restraint is limited to the gravity of the occasion. If a little twisting will serve the purpose, it is made to answer; but when "great big whoppers" are necessary, the majority of people are not afraid to resort to them.

Many also seek deception. The larger number of owners of property contemplating the erection of buildings, if they happen to interview a qualified and capable architect who talks of matters and possibilities intelligently and practically, become scared at the actual facts presented, and go in search of some pretender, who at once begins to talk "first-class" everything, when nothing better than the slop-shop standard is either contemplated or understood by him. Still his talk is "first-class," inasmuch as it serves to deceive the party who prefers deception to facts; and the sequel in innumerable cases has been attended with irremedial regrets to those who have danced to the music—"first-class."

The same rule runs through all lines of mechanical operations, and in all classes of dealings. The man who attempts to sell an article, and has the temerity to suggest the possibility of defects, will often miss a sale; while his neighbor who recommends identically the same article as *first-class* will find ready customers.

Thousands of really "first-class" goods, wares, and merchandise are known and protected by the producer's "trade-mark" and "label," and those who desire the standard articles are governed thereby in their purchases. But the tereos in business bore into the sound timbers of trade, and basely imitate the "trade-mark," by which they dispose of terrible impositions as "first-class"—original; and the masses of purchasers who are governed only by the sense of cheapness seek the imposition, rather than exercising good judgment and finding, and being willing to pay the price for, the genuine.

In architectural and mechanical pursuits, it may be safely accepted as a rule, that those who

in reality enjoy "first-class" qualifications refer to "first-class" buildings and workmanship cautiously, knowing that the term implies much more than one in five hundred desire to pay for; while the lesser classes, who understand absolutely nothing about the practical application thereof, resort to its use for the purpose of deceiving and cheating. During our practical, and by no means limited, experience, we have proven the rule as invariably correct, to doubt if not despise every boaster of "first-class" qualification, not one in a thousand of whom could, if their lives were the penalty of failure, define the proper meaning of the term "first-class" in house-building.

Injurious Resorts.

With no intention to overstep the legitimate lines which should control in the conduct of a journal of this character, and recognizing that the moral aspect of the subject-matter alluded to may not be strictly in keeping with its special purposes, we nevertheless feel justified in noticing the matter referred to, in the light of its damaging effects upon the young mechanics and working-men generally of this city. Our mission is to elevate and ennoble mechanical as well as architectural pursuits, and to rebuke, as far as our influence may extend, everything of evil character calculated to demoralize and work harm to those whose best interests we profess and hope to serve.

The matter alluded to is the almost innumerable lager-beer cellar resorts which abound in San Francisco. It is painful to contemplate the work of moral, mental, and physical degradation and destruction which is nightly conducted in these places, designated by various classic, poetical, patriotic, and fanciful names, and surrounded within and without by all the allurements which uncultured men can conceive, to allure the unthoughtful to low revelries; falsely denominated pleasures.

It is no matter of surprise that the low-minded, vulgar, and unrefined should seek these places, and accept as pleasurable the low order of vulgarities dealt out as amusements; but it is both astonishing and lamentable that so many men, young and old, who are qualified by nature and intellect to aspire to and attain a much more refined and elevated manhood, should settle down into and encourage by their presence and applause that which, in every tendency and influence, is demoralizing and injurious to the intellectual, moral, and physical nature. Apprentices, journeymen mechanics, and working-men of all classes should remember and contemplate the fact, that earnest study—mental and moral culture—is the only sure road to pre-eminence in any line of art or mechanism, and that every hour wasted under influences calculated to contaminate and corrode the better sentiments of mind and heart is just so much of positive loss.

The injuries imposed by these places are manifold—the two prominent being, first, the physical and moral effects upon the parties themselves. The breathing of "cellar air," air naturally impure, and rendered still more so by the heat and smoke emitted from gas and other lights, with impurities increased by repeated use—passage through human lungs, only to be thrown out and again re-breathed—and all this intensified by the smoke and fumes of cheap cigars, sold "5 to 10 for a quarter"—the offensive odors of clothes impregnated with grease and other substances, which would require many days of sunshine, if they were exposed thereto, to remove the smell and purify them—these must and do work terrible injury physically, while the blasphemies, vulgarisms, low jests, and indecent conversations indulged in are equally injurious to morals and the finer sentiments.

Secondly—Those who thus spend the hours of evening, and more generally until the clock strikes twelve, or later, must and do become less qualified for the duties of the succeeding day. From weariness and want of proper rest, both the physical and intellectual powers are enfeebled, and the labors of the succeeding day are performed with a burdened sluggishness, sometimes amounting to a hatred of life itself.

In view of these things, and the many others which naturally enter into an extended review of the subject-matter under notice, we appeal to the mechanics and working-men, and especially to the apprentice classes and youths of our great city, and of all other cities and places where this journal is read, to reflect upon and measure the value of what we have stated; and as they hope for advancement and comfort here, and a better life beyond, to turn away from every place and pleasure, as from a great and dangerous evil, which is calculated to impair or imperil their better manhood and morals, and to seek those which in effect shall improve and ennoble every emotion and sentiment of the soul. Seek the good, for the jewels which adorn life are only found in the paths of prudence and virtue.

Selecting Timbers.

Rankine says that there are certain appearances characteristic of good wood, to what class soever it belongs. In the same species of wood that specimen will in general be the strongest and the most durable which has given the slowest, as shown by the narrowness of the annular rings. The cellular tissue, as seen in the medullary rays (when visible), should be hard and compact. The vascular or fibrous tissue should adhere firmly together, and should show no wooliness at a freshly cut surface; nor should it clog the teeth of the saw with loose fibers. If the wood is colored, darkness of color is in general a sign of strength and durability. The freshly cut surface of the wood should be firm and shining, and should have somewhat of a translucent appearance. In wood of a given species, the heavier specimens are in general the stronger and the more lasting. Among resinous woods, those which have the least resin in their pores; and among non-resinous woods, those which have least sap or gum in them—are in general the strongest and more lasting. Timber should be free from such blemishes as "clefts," or cracks radiating from the center; "cup shakes," or cracks which partially separate one layer from another; "upsets," where the fibers have been crippled by compression; "wind-galls," or wounds in a layer of wood, which have been covered and concealed by the growth of subsequent layers over them; and hollow or spongy places in the center or elsewhere, indicating the commencement of decay.—*Mining and Scientific Press*.

An enormous amount of railway construction is now in progress in this country. It is estimated that 8,000 miles will be added to our railway system this year, against 7,174 miles last year. If all the projects now under way are completed, next year will see a still greater addition. The list of railroads now under construction comprises 15,886 miles of new road, to be completed by October 1st, 1882, which would make about 12,000 miles to be built next year. Most of these new roads are in the Southern and Western States. *Bullion*, in commenting on this enormous increase, says: "If the nearly 16,000 miles of road proposed to be constructed will cost, say, \$40,000 a mile to build, making an aggregate cost of \$640,000,000, and that enormous sum will pay a fair income yearly, the principal, though sunk, is not wasted." In 1880, the 84,225 miles of road in operation in this country paid on their aggregate capital dividends to the amount of over 3 per cent.—*Industrial News*.

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCTERI."

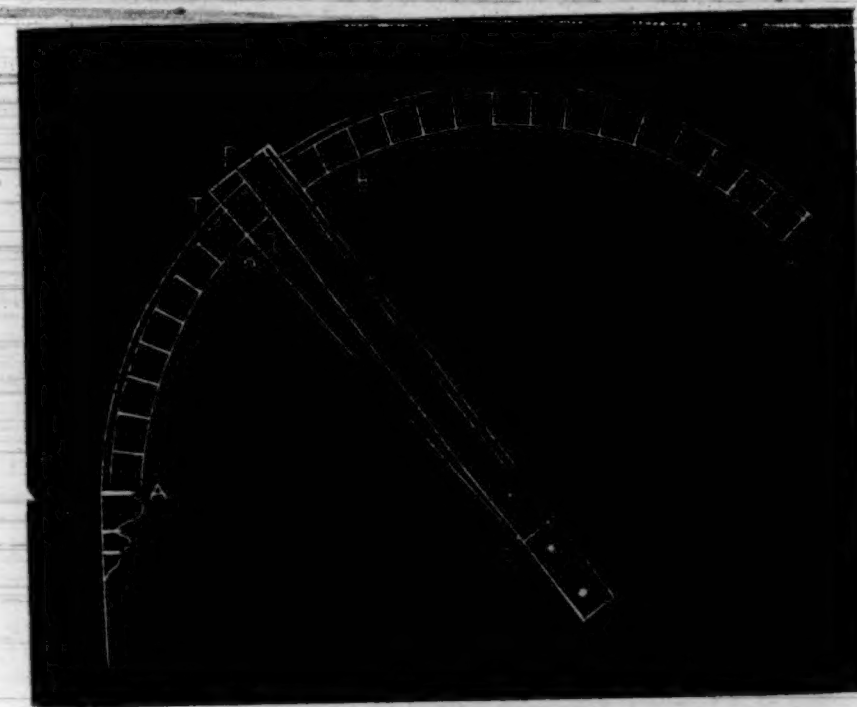
[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.]

We want it distinctly understood that the responsibility of signed articles rests with the authors. Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

BUSINESS MANAGER OF ARCHITECT: In putting on a molding around a circular head of a window, it is necessary, of course, to kerf the molding in order that it may bend without breaking. Is there any rule by which we may know just how much solid wood to leave between each kerf?

G. F., Healdsburg.

ANS.—There are many solutions to this problem, but for simplicity and exactness, the following rule, by the author of *MECHANICS' GEOMETRY*, is better than any other which I can at present call to memory:



"Let A B C be a curve to which a molding or other work is to be bent. Supposing the stuff to be one inch thick, take a strip equal to this, and run a gauge line on to the thickness of a veneer; then make a cut down to veneer. This done, lay a strip on the drawing, keeping the cut opposite S the center of the given curve. Fasten the lower part of strip; its face is now on line S P. Move it to the left until cut at S closes, which causes its face to be on line S T and gives for solid wood between each kerf 2 3. Here it must be kept in mind, that the same saw with which the cut was made in strip must be used for kerfing the work."

BUSINESS MANAGER OF ARCHITECT: I have always noticed that the ends of the joist in a brick building are always beveled where they rest on the walls. Is there any particular reason for such bevel? **PROPERTY OWNER.**

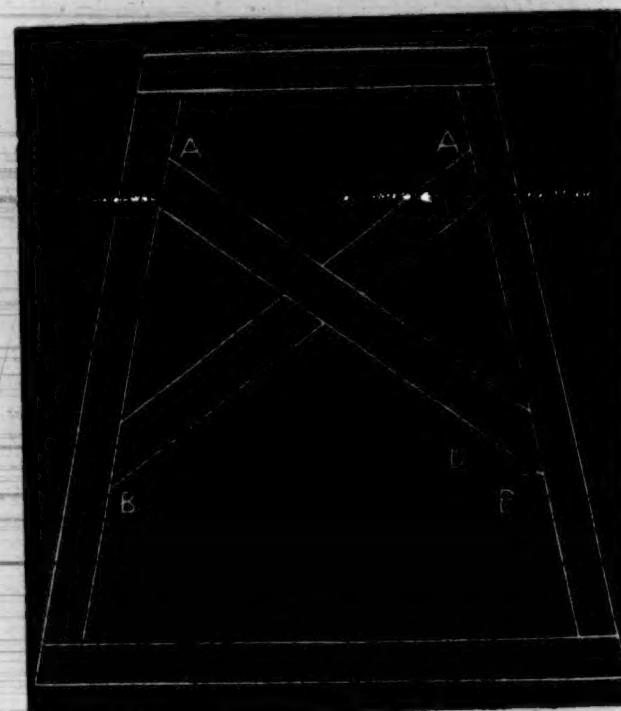
ANS.—One of the principal reasons is, that in case of fire the joists may burn and fall out without pulling the wall down. Also in case of long spans, the springing of the joists will not endanger the wall.

BUSINESS MANAGER OF ARCHITECT: What is a lancet window? By answering you will oblige a workman in **SAN MATEO.**

ANS.—It is a narrow window, with acutely pointed arch head. Seldom used except in churches.

BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise. **L. R., Berkeley.**

Our correspondent is rather indefinite, but we think the following will explain his wants:



The cut represents a frame, the posts of which incline one foot in six feet rise. Let the distance B B represent seven feet. The braces are run at an angle of 45°. The post inclining one foot in six, leaves the distance at A A six feet. We have given the rule in a previous number. In this case the brace would be 8 ft. 5 13-16 inches.

The New Odd Fellows' Hall.

Some months since the building committee of the Odd Fellows' Hall Association issued an invitation to architects to compete for the plans for a new building, to be erected on the lot forming the southwest intersection of Market and Seventh streets.

The premiums offered were respectively \$500, \$300, \$150, for the three best plans. The size of lot is 150x165. The limit of cost was fixed by the committee at \$200,000.

Six architects competed: Messrs. Wright & Sanders, McDougall & Son, W. Schrof, J. J. Newsom, Newsom Bros., and P. Portois. The plans presented by Wright & Sanders were awarded the first premium, McDougall & Son the second, and W. Schrof the third.

As yet, the committee have not fully determined upon the course to be pursued in reference to the plans, as modifications affecting cost and the arrangement of building may be found advisable.

The matter will likely be fully settled at an early day, as it is the intention to commence operations during the spring months, provided a satisfactory disposal of the old property can be effected.

The Tensile Strength of Glass.

Traulionie gives the tensile strength of glass at from 2,500 to 9,000 pounds per square inch, according to kind; crushing strength 6,000 to 10,000 pounds per square inch; transversely, by his own trials, Millville (N. J.) flooring glass, one inch square, and one foot between the end supports, breaks under a load of about 170 pounds, consequently it is stronger than granite, except as regards crushing, in which the two are about equal. It is suggested that glass will shortly be used for many purposes where other and much inferior materials are exclusively employed. Glass may be used as water conduits to better advantage than cast-iron or terra cotta, as it is impervious to moisture, and proof against corrosion or chemical action. It is already considerably in use for flooring, and it has lately been successfully experimented with for railway sleepers under exceptionally severe conditions. — *Mining and Scientific Press.*

Illustrations.

Plate A. As promised in our December issue, we present in Plate A the design of the "Tabor Grand Opera House and Hotel," Denver, Col. It is unnecessary for us to add more at this time in reference to this handsome edifice, as a very full description was given last month.

Plate B represents a neat and not costly design for a country residence, the plans for which are shown by **Plate C.** It contains, besides halls and bath-room, eleven rooms, including library off of parlor and dining rooms, 7 ft. 6 in. by 11 ft., and children's or dressing room on second floor, off of main chamber, 7 ft. 6 in. by 9 ft. 6 in., with laundry, pantry, and closets additional. The plans were prepared for erection at Reno, Nevada, for Mr. R. L. Fulton, of the *Reno Gazette*. Its cost, complete, erected in a good and substantial manner, may be fixed at \$4,500, with the contingency of something less, if plainness and cheapness of finish are observed, and twice or thrice that amount by the adoption of expensive finishes.

Plates D and E represent a convenient one-story cottage, capable of erection anywhere from \$1,600 and upward, according to manner of construction and other circumstances.

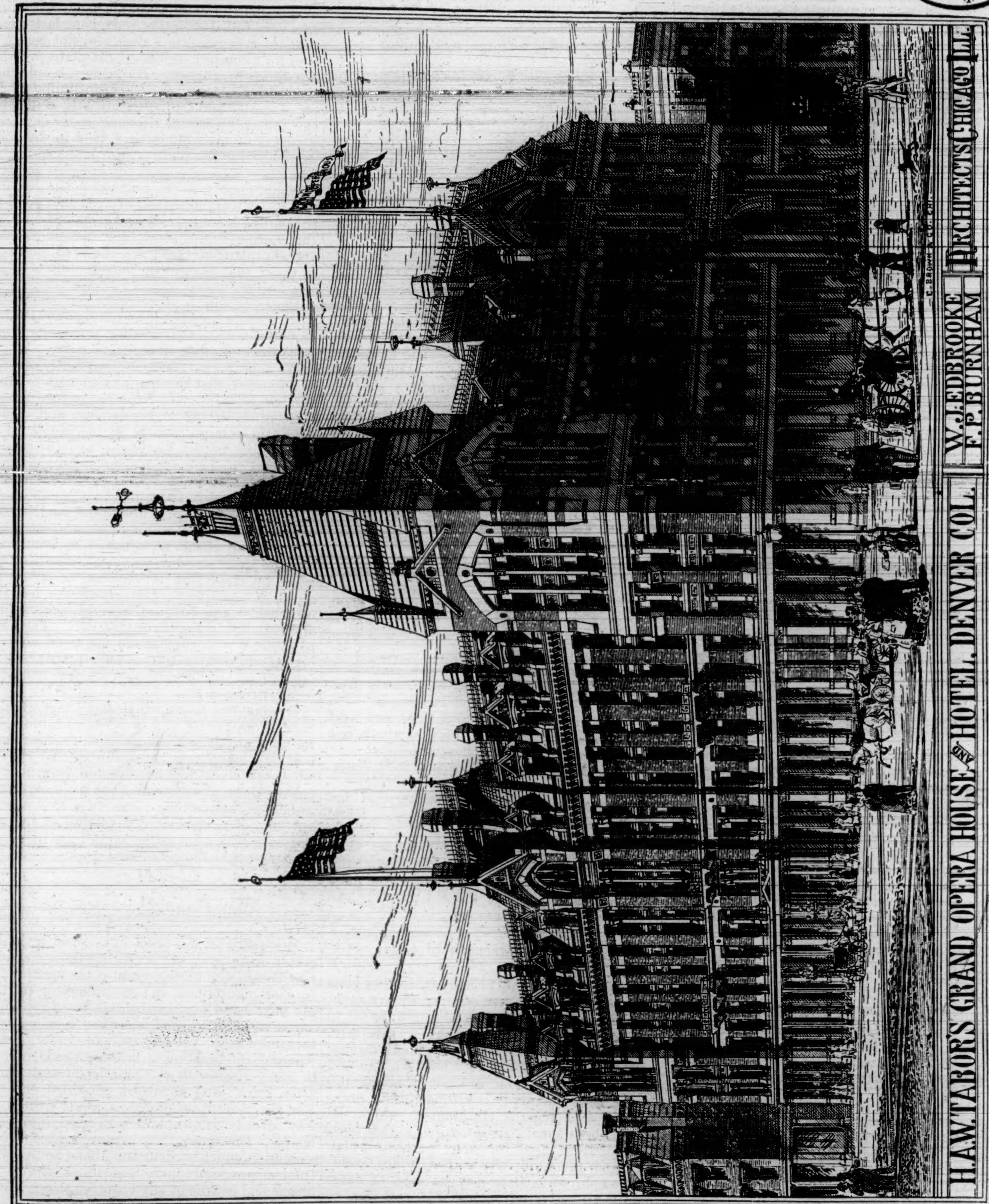
We repeat what has been frequently stated in this journal, that the margins in cost of buildings are large, varying from ten to five hundred per cent. for those of similar size and convenience, the enlarged cost being in the class of materials and finishes employed, and the grade of workmen engaged. Some house-builders throw work together, while others execute it in a skillful and workman-like manner; and those who desire good work can only obtain it from the hands of competent men, while those who want what is known as cheap buildings, i. e., those that cost the lesser amounts, can best serve their purposes by employing the *botches*, as far as first outlay is concerned. But experience has fully established the folly of shoddy workmanship and material in house construction. Far better to contract with responsible and good contractors, as after expenditures for repairs and keeping things in order outweigh all first considerations of economy.

Owners may rely upon this as a fact, that the class of architects and builders who indulge in representations of their abilities to effect great results at small cost, mean simply that they are adepts at producing inferior building, and deceiving those who have had but little experience in house construction. The "*Cheap Johns*" in any line of operations do not deal in things of intrinsic value, but at the same time will swear that the *trashy* things offered by them are *first class*.

Cotton and Straw Houses.

It is said that fire-proof houses can be built of cotton and straw. In preparing these materials, raw cotton of inferior quality, the scattered refuse of plantations, and sweepings of factories are mixed and converted into a paste, which becomes as hard as stone, and then is called architectural cotton. It may be made in large slabs, whereby the building of a house would be rapid in comparison with the practice of laying brick after brick, and at about one-third the cost. For the other part, wheat straw is treated in a way already known, and converted into paste-board. The sheets thus prepared are soaked in a solution which hardens the fibers, and they are then compressed under enormous power into beams and boards of any required size. The effect of the soaking is said to render them difficult of combustion. — *Southern Manufacturer and Builder.*

Subscription price of this journal is \$2.00 in advance.



HAWTABOR'S GRAND OPERA HOUSE AND HOTEL, DENVER, COL. W. J. E. BURNHAM, F. P. BURNHAM, ARCHITECTS, CHICAGO, ILL.

PLATE A.

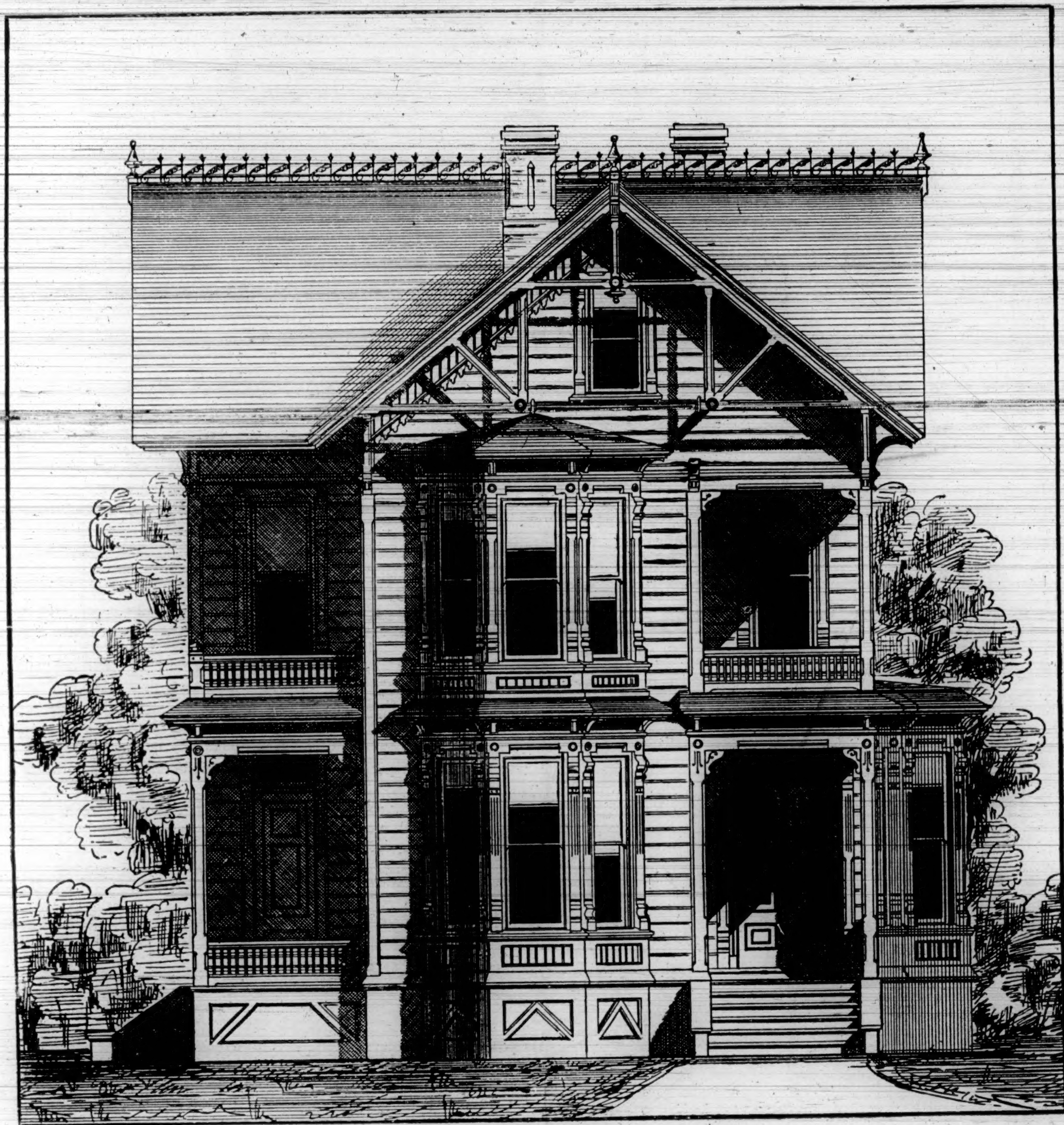


PLATE B.—DESIGN FOR COUNTRY RESIDENCE.

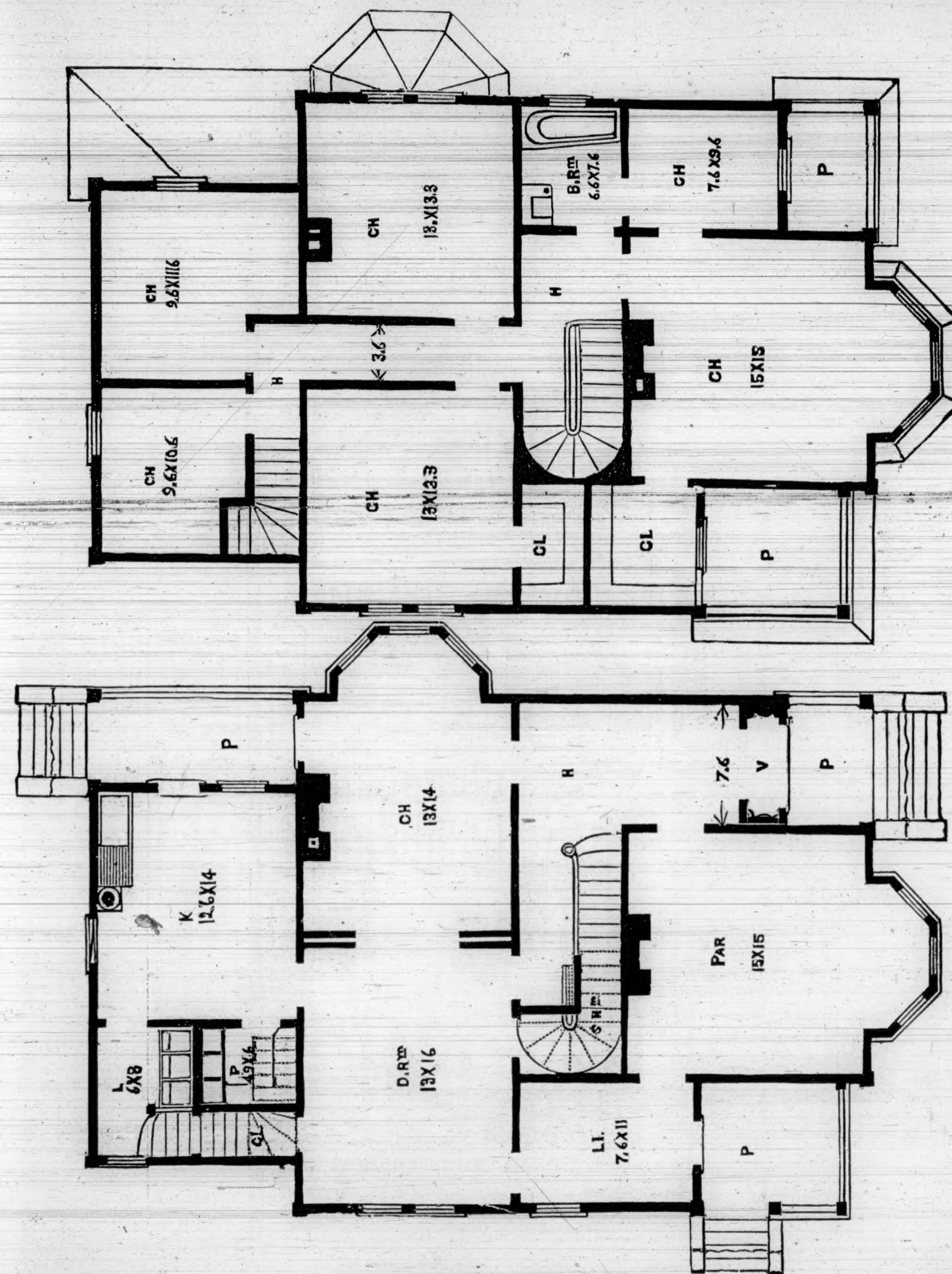


PLATE C.—PLANS FOR COUNTRY RESIDENCE.

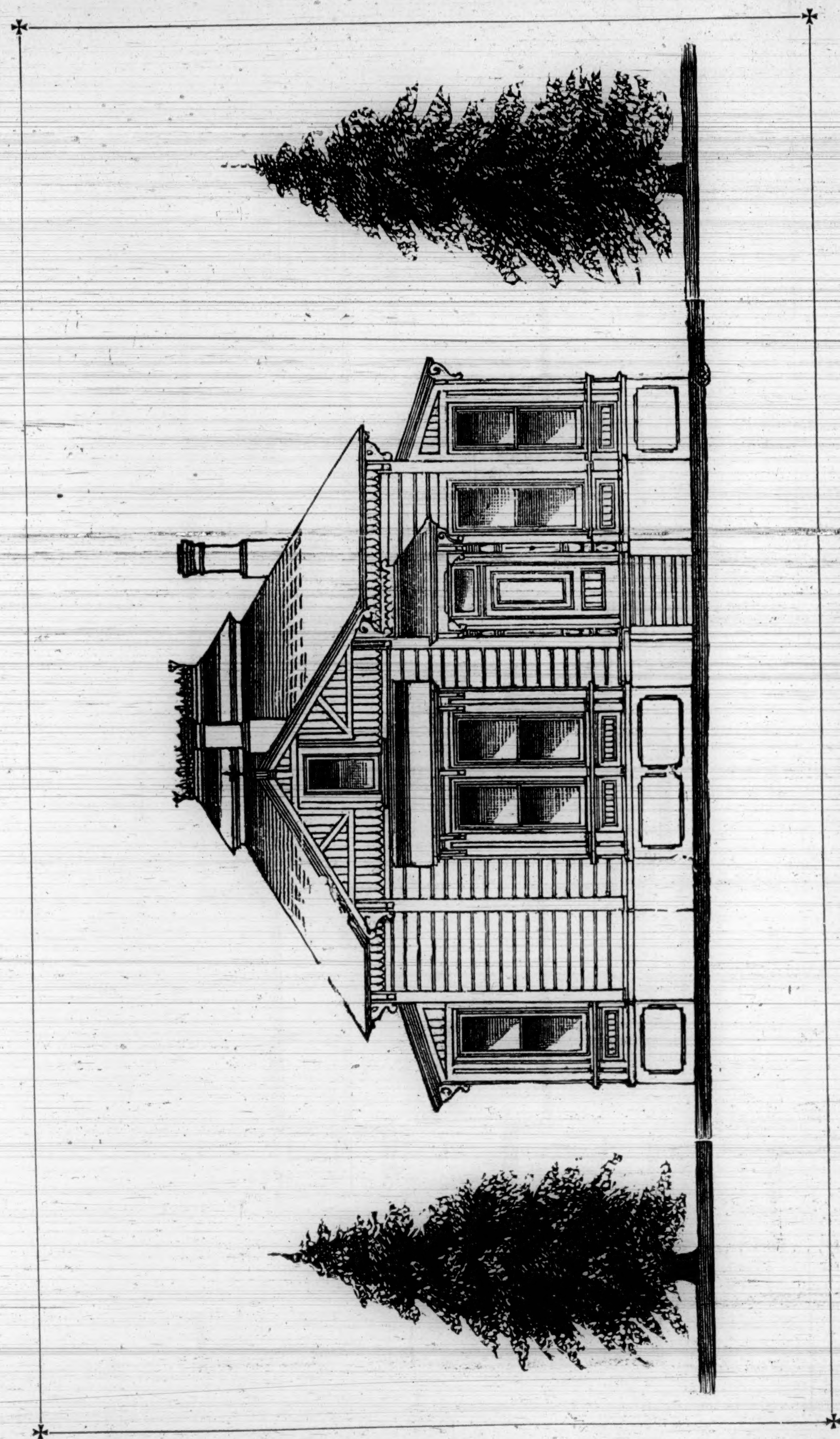
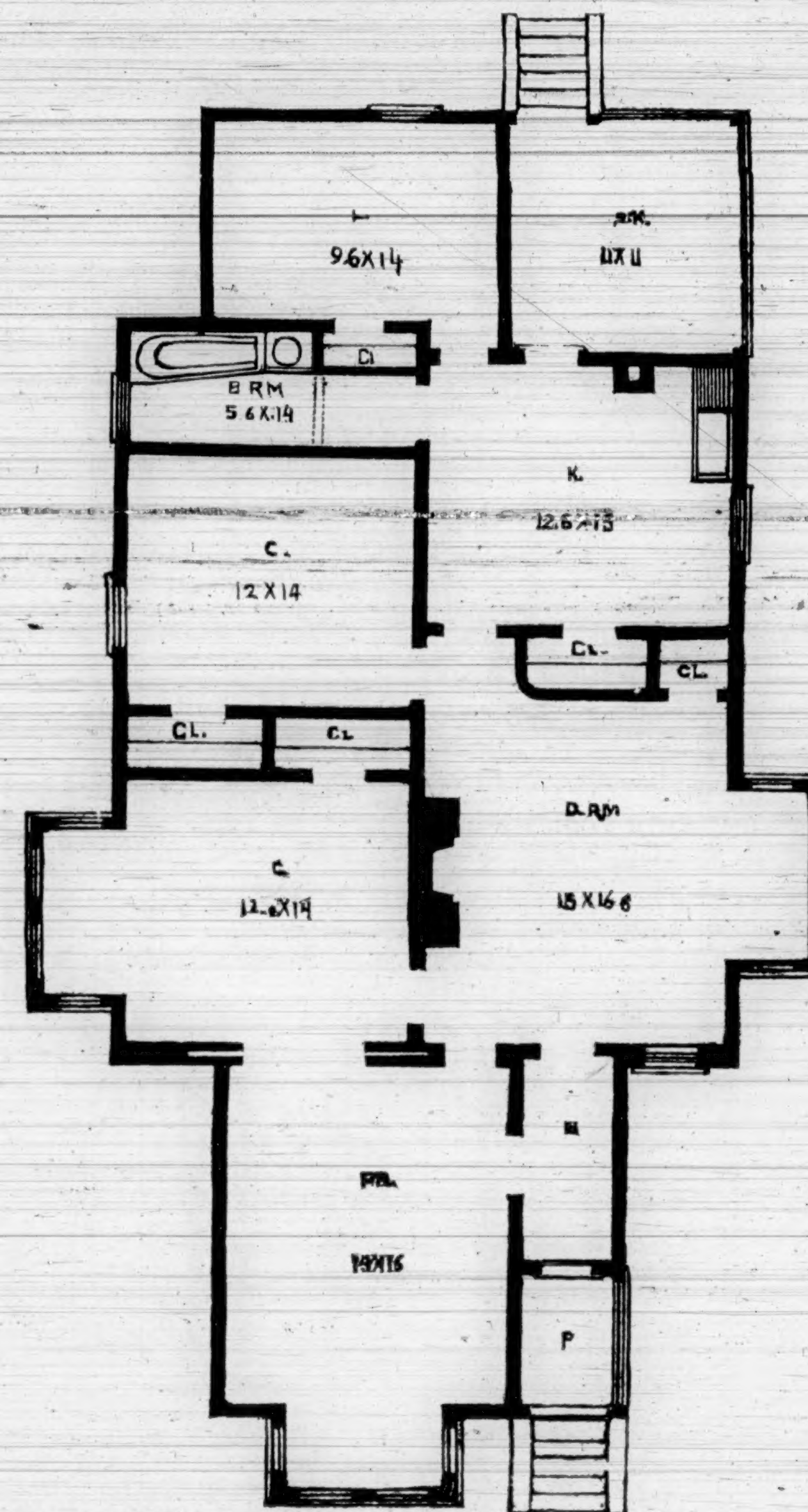


PLATE D.—DESIGN FOR ONE-STORY COTTAGE.



GROUND PLAN FOR ONE STORY COTTAGE.

Leaky Roofs.

There can be no other excuse given for leaky roofs than absolute carelessness or bad workmanship, except in cases where the materials of which they are constructed have yielded to the laws of wear and tear, and fail longer to serve the purposes for which they were originally intended. If the roof work of buildings is properly executed, they should remain perfectly water-tight so long as the material will last. Yet it is a common occurrence that leaks develop themselves with the first rain that falls after their completion, and more or less tinkering is found necessary, for the reason, that when work of any kind is defective in its first execution, continual repairing or renewal as a whole becomes a necessity.

Under such circumstances, owners are apt to complain, and feel almost revengeful toward the parties by whom the work was done; and in an abstract view of the case, such feelings are sustained by the provocations experienced. But behind this there is another fact, which seldom enters into the consideration; and that is, that owners are more generally guilty of very unwise procedures in the premises, in practicing the almost universal rule of seeking cheapness, and presuming competency on the part of cheap workers; while all the facts in mechanical operations demonstrate the utter impossibility of obtaining good things at a low price, except by mere chance. Cheapness and good quality do not run in the same channel. And it is only so far as owners are careful to engage or enter into contract with thoroughly competent mechanics—aiming more to secure good work than to save a few dollars in expenditures—can they reasonably expect to obtain good work, either in roofs or anything else. This is as true in reference to building houses as it is in relation to goods and merchandise; and so long as owners follow the practice of admitting botches in competition with competent mechanics, and accept their low estimates with favor, making no distinction between mechanics in a proper sense and mechanical frauds, no right or intelligent cause of complaint can exist. If men undertake to do work for ten or twenty per cent. less than a right and paying price, it is but natural that they should seek to compensate the discrepancy by doing the work undertaken in quality on a par with the price for which the work is undertaken. And more than this, there are thousands who call themselves mechanics, who could not, if paid ten right prices, execute good work.

We do not justify this course on the part of mechanics, but it is a natural and rational sequence, under the order of things that prevail; and neither imperfect roof work nor any other class of work is to be wondered at. If the rule prescribed the lesser class upon the basis of lack of competency, instead of good men, because of higher demands for more perfect and valuable services, the condition of things would be changed, and in the long run to the advantage of those having work done at a fair price, as the after expenses made necessary by poor workmanship would in many cases more than compensate the difference in first execution.

We assert it as a fact, beyond successful contradiction, that roofs in all cases can be made entirely impervious to the rains, and that all leaks in them result from the causes enumerated—except that occasionally, men who receive a proper compensation, and claim to be good mechanics, are possessed of the mean disposition of excessive greed, and sometimes do "rascally things" for the sake of enlarging the sum of profits on their operations. But under no circumstances does there exist a single good reason why the roofs of buildings should not always be entirely water-tight.

It is also true that the party selected as architect may possess no really practical knowledge

of roof work, nor of any other feature of practical construction; but this fact does not excuse the mechanic for defects in workmanship. Neither ugliness of design nor inconvenience of arrangement precludes good work; and if the architect in the superabundance of his stupidity shall have betrayed his total unfitness, as many do, to perform architectural services, the mechanic is not thereby relieved from the faithful performance of his duties. In some parts of the world the mechanic is held to strict accountability for defects, although he may have faithfully followed the instructions and requirements of plans, specifications, details, and the personal orders of the architect—the presumption being that those who undertake the construction of buildings as "master mechanics" understand more completely the necessities involved; and the laws do not permit the shifting of responsibilities from those who do to those who direct the doing. We wish it were so in this country, as such laws would drive away from the architectural profession thousands who assume its practice, without any of the qualifications necessary to a fair or perfect knowledge of its great and grand principles, theories, and practical demonstrations; and with them would go thousands more of men who use mechanical pursuits as means by which to make money, while in fact mechanical science is to them as little understood and as mysterious as would be the dead language to an untutored heathen.

The Agricultural Ant in Texas.

The existence of ants who carried on some of the processes of agriculture was known as far back as the time of Solomon, as proved by the well-known passages in the Book of Proverbs, in which he praises their exceeding wisdom, and bids the sluggard to consider their ways; but as investigations of the habits of European ants led to the discovery that they none of them make provision for winter use, for the good reason that as they hibernate they do not require to do so, it came to be believed that Solomon had only adopted a popular fallacy; modern research has, however, proved that, after all, Solomon was correct, for there are two species inhabiting the countries bordering upon the Mediterranean that harvest seeds, and now we have from the other side of the Atlantic a full description of the mode of life and operations of farmer ants. Mr. McCook, a Presbyterian minister of Philadelphia, provided by the liberality of his congregation with time and means for careful investigation, records that the *Pogonomyrmex barbatus* of Texas carries on what may be well and justly called "farming," like a true backwoodsman. As soon as a new colony is founded, the settlers proceed to clear the ground. This they do by biting through the stems of the grasses, allowing them to wither, and then pulling up the roots, and having cleared a circular space varying in diameter from one to ten feet, according to the strength of the community, this is afterwards kept free from all growth save of one particular species of grass, the seeds of which form their favorite food. It has been surmised that they sow the crop, but Mr. Cook's investigation failed to establish the proof of this; but they do not rely solely on the produce of their own clearing, but make diverging roads—in some cases upwards of 60 feet in length and 2 inches in width—into the surrounding jungle, and send out foraging parties in search of various grass seeds. These are borne home and deposited in their subterranean dwellings, the work being carried out from early morning till sunset, but with a rest of some hours during the heat of the day, when the busy workers retire underground for protection from the sun's rays. They possess advantages and disadvantages as compared with the human worker, one advantage being that they always carry their tools, reaping-hooks and rakes, with them, whilst the disadvantage is that

these implements once injured cannot be replaced. This is graphically portrayed by a row of toothless queens. Their care of the garnered stores is shown by their careful drying on the surface of their nests of grain, which has been rendered damp by an inflow of water, and their rejection of grains which may in consequence show symptoms of sprouting.

The clearings affected by these industrious insects sometimes seriously interfere with man's culture of the land, and he is driven to waging war with them. Repeated plowings of the surface fail to extirpate them, and recourse must be had to poison or to traps. Nor are they destitute of the means of defense, as the pain inflicted by the sting of these emmets is equal to that caused by a wasp's sting.—*Journal of Applied Science.*

If in the past, in the conduct of this journal, we have in anything erred, or been unjust or unfair toward any one, we shall frankly acknowledge, and as far as may be in our power correct, every act of unfairness or injustice, so far as they may be made to appear. We have had neither enemies to punish nor friends to serve, in the past, and shall strive to maintain in the future a faultless integrity in everything appearing in this journal. Inspired in our editorial work by neither envy, jealousy, nor malice in any connection, it will always be more pleasing to make favorable and kindly references to matters and things in general, but duty will compel us to even severe criticism of such as may be irregular, harmful, and monstrous in character. We have and shall dispute the right of any architect to pursue professional practices which shall tend to demoralize and disgrace the profession as a whole. And we regret the fact that there are some in San Francisco, disguised as architects, who do reflect discredit upon an honorable profession, and by their unprofessional course, and ignorance of all correct understandings of the science of architecture, bring upon the profession reflections among property owners which work injury to good and competent men. And we also regret that there exists among mechanics, in the various branches, a much too general undervaluing of correct principles; an inclination as much to succeed and prosper by intrigue and cunning device and scheming, as by honorable and square dealings.

Seeking and securing advantages by the lesser, instead of assuming the higher and better, courses of action, is more the rule than the exception. And to such an extent has this disposition grown in California, that scarcely anything that will win is considered by the majority too monstrous for application. Consequently there will necessarily arise cases which will demand severe comment from us, and we shall deal with them plainly, for the sole purpose of correcting the wrong and defending the right; at the same time, not forgetting that perfection is not possible in men, and that the best may err. But if with one accord, and with strong earnest purpose, each and all shall aid in checking the impure currents in both architectural and mechanical pursuits, it may confidently be anticipated, that in the future better conditions and increased benefits will be enjoyed by all.

The mechanic who reads a paper published in the interests of the trade he is engaged in is sure, in the end, to command better wages than the workman who plods away in the same old ding-dong style of his forefathers, and takes no paper pertaining to his trade. It is easy to pick out of a shop the men who read from among the workmen. The well-read man gets all the best work, greater pay, and is nearly always constantly employed, and he deserves these advantages, for his extra readiness is sure to be a source of profit to his employer.—*Builder and Wood-Worker.*

Some Great Engineering Projects.

The shortening of commercial routes by means of ship railways and ship canals seems to be the great ambition of the engineers of to-day.

In addition to the De Lesseps ship canal at Panama, the Eads ship railway at Tehuantepec, the Florida ship canal, the Chesapeake and Delaware ship canal, the Cape Cod canal, and others in the interior of this country, there are several other important projects of like nature under way or in prospect in various parts of the world. The old project of connecting the bay of Fundy and Baie Verte, on the Gulf of St. Lawrence, across the Isthmus of Chignecto, has lately taken new form. It is now proposed to make the connection by a ship railway eighteen miles long, thus making a short cut for navigation between the United States and the ports on the St. Lawrence gulf and river, and saving the long and dangerous voyage around Nova Scotia.

The projector of the ship railway, Mr. H. G. C. Ketchum, writes us, that the plan grew out of a desire to save lockage and a deep channel in the design of the Baie Verte canal. His first plan was to lift vessels by hydraulic power on pontoons, and then float them through the canal. The idea then occurred, that they might as well be lifted to the surface of the ground, and hauled across the neck of land on rails. The road may be level and perfectly straight from end to end. The plan has been submitted to the Dominion Government, and is favorably entertained. Mr. Ketchum has issued an interesting pamphlet relative to the project, which may be considered at greater length elsewhere.

Across the ocean, the construction of the tunnel under the British channel, connecting England with the continent, is being prosecuted with an energy which is indicative of ultimate success, and thus far no obstacles have been encountered to the undertaking a difficult or exceptionally hazardous one.

In France, the connection of the Atlantic with the Mediterranean by a ship canal, to save the long and stormy voyage around the Spanish peninsula, is under serious consideration, and the Council-General of the Seine have just adopted a resolution approving of the project.

The ship canal across the Isthmus of Corinth, in Greece, to shorten the route to Constantinople and the ports of the Black Sea, has, we believe, been definitely determined upon.

In the far east, a bolder and more important project is in contemplation, with a view to shortening the commercial route to China and Japan by 600 miles or more. At the head of the Malay peninsula is the Isthmus of Kraw, connecting Upper with Lower Siam; and by the cutting of a ship canal at this point, about 30 miles in length, the need of sailing around the peninsula might be obviated. At Kraw, the Malayan peninsula, which stretches southward for 500 miles to Singapore, is at its narrowest breadth, and the distance across from the side of the Indian Ocean to that of the China Seas is further decreased by the existence of natural water ways for some distance inland from both shores. From side to side, it is no more than 50 miles, and the Pakchan River, on the western coast, and the Htassay on the eastern, afford the ready means of further reducing it. The distance, therefore, over which it would be necessary to cut a canal would probably not exceed 30 miles. The neighboring districts are known to be fertile, and to contain great mineral wealth. A tin mining company has been established for more than ten years at Malewon, on the Pakchan, and gold has been found in the neighboring stream of the Lenya. So far as known, the engineering difficulties are not of a stupendous character, and political drawbacks and considerations fortunately do not exist.

The French appear to have taken the lead in proposing this important commercial short-cut,

and if the opinion of the London *Times* is well founded, the Government of British India will not decline to actively participate in its execution.—*Scientific American.*

Texas Coal and Iron.

As Texas has never yet had a geological survey, the extent of her coal strata is not well defined. It is supposed, however, to embrace about thirty thousand square miles, in the northern and western portions of the State. Over this great area, coal has been found at a great many places, but at no place has it been mined except to a very small extent. It is a bituminous coal, and almost, if not quite, precisely similar to the McAllister coal of the Indian Territory. Some anthracite has also been discovered in this coal territory. The railroads are now penetrating the coal formations of Texas, and this great source of wealth will now doubtless be rapidly developed. So far, it is a virgin field.

In addition to the true coals of Texas, there is an immense bed of lignite, which extends apparently across the entire State from northeast to southwest, in the eocene formation. It is said to be at some points twenty feet thick. This lignite much resembles cannel coal, and doubtless would be made quite equal to it by a process of pressure by machinery. It is very fat in various oils and gases.

Texas is peculiarly blessed with iron. In eastern Texas, there are immense deposits of hematite or brown oxide of iron. It runs through many counties, often forming high hills, which are literally filled with it. These ores contain from forty to seventy-five per cent. of metal. In some places they are worked to some extent. The region in which these ores are located is heavily timbered; so that charcoal for reduction can be had at a nominal figure. The iron turned out is of excellent quality. In Robertson, Limestone, and other counties of central Texas, the same quality of ores exist, and generally in close proximity to immense beds of lignite. But perhaps the grandest accumulation of iron ores in Texas, and probably anywhere else, are in Llano and Burnett counties. It is here in connection with primitive rock, and appears mostly as magnetite. It rises out of the granite in immense seams and dikes. It has been wrought to a small extent, and found to yield from seventy-five to ninety per cent. of metallic iron, equal to the best Swedish. There is plenty of timber for charcoal and limestone for flux. Besides, coal has been found near by, and it is known to be abundant a little farther to the north. Soapstone is abundant in the same localities, valuable for furnaces.—*Chattanooga Tradesman.*

Mr. Warren H. Williams, well-known to the architects generally in this city, paid us his usual annual holiday call, on the 5th inst. We were pleased to see him in person, and exchanged congratulations and good wishes for mutual continued health and prosperity. As is well known, Mr. Williams is practicing the profession at Portland, Oregon, with marked success. He reports gratifying prosperity at Portland during the past year, and a favorable outlook for 1882. In his behalf, we state to those of his large circle of friends in this city upon whom he failed to call, that an early return to his field of labor rendered it impossible for him to extend his personal visits as much as he desired.

In common with all the older established architects in San Francisco, we entertain the most kindly feelings toward the gentleman named, he being the son and student of one of the most worthy, in his lifetime, and highly esteemed members of the profession, whose death was chronicled in Volume I. of this journal.

The Female Inventors of Antiquity.

Netocris, the spouse of Nebuchadnezzar, is described by M. Baudrillart as the soul of his works, and to her is attributed the design of the lake named after her, which served the double purpose of a fortification, and a dam against the Euphrates when in flood. The famous hanging gardens are also attributable to female influence: to the longing of a Median princess, born in a more elevated region, for the coolness and shade of her native mountains. There were five of these gardens, about four English acres each, on terraces supported by columns, and covered with mold thick enough for the largest trees to take root in it. One of the columns was hollow, and contained a hydraulic machine to raise the required quantity of water. In fact, the art of gardening, with all its modern appliances, including irrigation and the transplantation of grown trees, was practiced in Babylon as effectively as in the Bois de Boulogne or Hyde Park. The Roman writers speak of silk as a product of India, and it was unknown in Europe, except as an imported and rare article, prior to the sixth century; but the Chinese claim for an empress named Siling-Chi, who lived B. C. 2650, the discovery of the art of breeding and domesticating silkworms, that of winding off their cocoons, and the fabrication of stuffs of silk. She was deified as the discoverer in the threefold capacity, and down to our time, according to M. Baudrillart, the Chinese empresses, attended by their maids of honor, have been in the habit of making annual sacrifices to Siling-Chi, and have deemed it a duty to rear silkworms. The export of the seeds of the mulberry tree and the eggs of the worm was prohibited under pain of death, and the prohibitory law was rigidly observed for ages, till a Chinese princess, betrothed to a king of Khotan, unwilling to dispense with silk, contrived to smuggle some of the seeds and eggs across the frontier in her hair. But the secret did not reach Europe till A. D. 552, when two monks of the order of St. Basil made a present to Justinian of some of the seeds and eggs, which they brought from China in the hollow of their pilgrim staves.—*Quarterly Review.*

How to Obtain this Journal Free of Cost.

To any of our subscribers or other parties who will forward to this office four new names in addition to their own, and eight dollars in cash or by postal money order, bank check, or other circulating medium, we will send this journal for the year 1882, and a copy of the *Steel Square and its Uses*, free of charge. Single subscription price, \$2.00 per annum; steel square and its uses, 75 cents.

Or we will furnish ten copies for one year, sent to separate addresses, for fifteen dollars to the parties securing the ten new names; in addition to which we will send or give a copy of *Palliser's Useful Details*, price \$3.00, or either two of the following named books: "Palliser's Model Homes," "100 Useful Designs," "Stepping-stone to Architecture," "Practical Draughtsman," "Proportions," or "Saw Filing."

To Imitate Black-Walnut.

A new process by which ordinary wood has imparted to it the appearance of walnut, suitable for office, steamboat, and other cabinet work, has been recently described. Birch, beech, alder, or similar woods, are first thoroughly dried and warmed, then coated once or twice with a liquid composed of one part by weight of walnut peel, dissolved in six parts of soft water, by heating it to boiling, and stirring. The wood thus treated is, when half dry, brushed with a solution of one part by weight of bichromate of potash in five parts of boiling water, and, after drying thoroughly, is rubbed and polished.—*Druggists' Circular.*

Retrospect.

In looking back over the course of prices for the past year, there has been nothing discouraging to the legitimate dealers in real estate. There has been no extraordinary advance, but property in every part of the city has been firmly held, and scarcely any losses can be recorded against those who bought wisely. It was supposed that the great rise in the stock market during the fall and winter of 1880 and 1881 would lead to an excited real estate market during the spring of the latter year; but such did not prove to be the case. At no time during the year was there any evidence of a general speculative movement. Property has been very firmly held in the business and fashionable quarters of the city. If there has been any disappointment, it has been in the lack of interest in West Side property, especially on the Riverside Drive and the streets adjacent.

The past year has been distinguished by a very great building movement. The Nineteenth and Twelfth Wards have increased, of course, more largely than any others. The new building has followed the line of the backbone of the island, that is, up Lexington, Madison, and Fourth avenues. A notable building movement is that which has sprung up on the flat grounds above One Hundred and Twenty-fifth Street. It is evident that the building activity for the coming year will be largely in that direction, and that the time cannot be far distant when all the low-lying ground north of the Central Park up to the Harlem River will be covered with houses.

One of the special features of the building of the past year has been the construction of immense buildings for offices on the lower part of the island and of great apartments and flats on the central zone of the city. The use of the elevator is changing the architecture of New York. While less space is being taken up, buildings of greater height are everywhere in course of erection. This change in our method of house construction bids fair to make New York in the course of time the most densely populated city in the world; that is to say, it will have the greatest number of inhabitants to the square mile. There seems to be no end to the demand for suites of rooms. Apartment houses cannot be erected in sufficient numbers to supply the demand.—*New York Real Estate Record.*

Our Redwood Proposition.

We of less experience than our veteran brethren of the pen and press, who have passed over the shoals and snags of early training, sometimes fail to make our intent and meaning so clear and plain as to preclude misconception by others.

The Humboldt Times takes us to task as follows:

"The California ARCHITECT will publish a series of articles early in the year on the redwood and its uses. It informs its readers that many erroneous notions exist about this tree and lumber, which it hopes to correct from an experience of more than thirty years. The ARCHITECT asks its contemporaries to 'reserve further statements in reference to this matter until its articles are printed.' When we reflect that there are thousands of men in various callings who have known nothing but redwood for a quarter-century, we are inclined to think the announcement is a shrewd advertising dodge. In this county it is well known that redwood is used for building anything and everything from a board fence to a fortune. The particulars will not be eagerly sought for."

Our contemporary exposes an aptness to jump at conclusions; and if in all cases its leaps are as distant from the correct as in our case, its course must be as irregular and circuitous

as the Northern Pacific Coast Railroad. There was not the slightest attempt conceived on our part at "a shrewd advertising dodge," nor did we propose to furnish any new light upon the redwood question to those who live in or near redwood forests, and are so thoroughly familiar with all the facts of the case that they cannot be further informed.

We had in mind the simple purpose of correcting erroneous statements which have appeared in several Eastern journals in reference to California redwood.

We trust that our good brother of the Times has been one of those who has reaped a "fortune" from the use of redwood, and if he has not, we hope that fortune will smile upon him, and strew the remaining portion of his life's pathway with as many golden eagles as there are redwood trees around or in sight of his *sanctum sanctorum*.

Thirty odd years in the practical use of California's most prominent wood, for all purposes for which it is used, including proprietorship in a "redwood sawmill," erection of buildings, etc., etc., certainly furnishes us a basis upon which to found the conclusion of competency to "know whereof we speak."

Machinery and Mechanical Skill.

The wonders of mechanism, says the Boston *Journal of Commerce*, have furnished material for essays, anecdotes, sketches, for lectures and lessons without number. The close imitation of sentient human judges by insensate material when formed into acting machinery; the microscopic wonders of production in watch-making machinery—screws so small that to the unaided eye they appear like grains of minute seeds; the automatic handling of metals in process of conversion from mass to individual shapes; the exact reproduction of periods of time or of acts by machines which count, and register, and measure, and return;—all these are admirable and admired.

But the skilled workman makes possible the wonder-working machine. He must first make the initial screw, the first wheel, form the first gear tooth, lay out the first congeries of levers, inclined planes, rotating wheels, and reciprocating movements that make a completed machine. It should always be borne in mind that the machine never improves itself; it is simply a reproducer; and even to continue to be a reproducer it must have its own waste supplied and resupplied by continual additions made by the trained hand, backed and guided by the intelligent brain. So, when we are inclined to argue the progress of the race by the achievements of machinery in our day, let us never forget that these achievements are not only primarily the outgrowth of individual human skill, but must also be kept up to their present standard by individual human skill; and that no progress whatever can possibly be made without the perpetual presence and active operation of the skill of the individual workman.—*Leffel Mechanical News.*

Green and Red Lights in Vegetation.

Why will grass not grow under our trees? M. Paul Bert has shown that green light hinders the development of the plants. Plants enclosed in a green glass frame wither and die as though they were in darkness. M. Regnard finds that plants especially require the red rays. If sunlight is deprived of the red rays, the plants soon cease to thrive.

Send for a copy of the "Steel Square and its Uses," handsomely bound and illustrated. Price, 75 cents.

The Boston Society of Architects, with whose co-operation the recent test of fire-proof building materials was made in that city, not satisfied with the information obtained from the first trial, has taken steps to secure, if possible, a second and much more comprehensive test, in which the different kinds of fire-proof construction shall be subjected to strains such as they would endure in actual practice, and each material shall be used over a considerable surface, and exposed to a fierce and long-continued heat, the fire being kept up, if possible, until all the varieties of construction have succumbed. By the side of these, and subject to the same conditions, it is proposed to place one or more examples of the ordinary so-called fire-proof structure, consisting of naked iron beams, carrying brick arches, and supported by unprotected cast-iron columns, as well as corrugated iron-work, with and without concrete filling, brick vaults and various kinds of fire-resisting shutters and doors. The subject is one of vital importance to all who own or insure warehouse, office, or banking buildings, or the property contained in them. At this moment, the United States Government has some fifty millions of dollars invested in freestone or granite piers and unprotected iron columns, supporting bare wrought-iron girders, which in their turn carry the brick arches of the floors and roof; and private individuals in the city of New York alone have about as much more; yet the unanimous opinion of experts, sustained by some private tests, is that in point of security against fire these costly edifices are little better than frames of timber and plank, and far inferior to timber frames covered with wire-cloth and plastered. The accumulation of costly goods in our great cities is now so enormous that it has become a matter of imperative necessity to discover some mode of constructing buildings which can be depended upon to contain them safely. Scores of patentees claim to have solved the problem, but a thorough comparative test of the various inventions has never been made, and it would be much for the interest of all underwriters, owners, or lessees of buildings for the reception of valuable goods to respond to the appeal of the Boston Society of Architects, and contribute toward the fund which must be raised before the project can be carried out.—*The American Architect and Building News.*

Slate and Glass.

The problem as to the best material for building purposes is, perhaps, as remote of solution as ever. But we notice that considerable discussion is being had in this matter, and two articles, not generally esteemed worthy of mention in connection with the subject, are coming to the front. These are slate and glass. It is said that the former is a good substitute for marble and granite in public buildings. Builders assert that slate is more lasting than either marble or granite, and is impervious to heat. Slate, it is said, will absorb the rays of the sun, can be planed, sawed, or ground like wood, grows harder by exposure to the weather, and is a building stone that will last for ages. There are four colors, green, red, and variegated, and purple, and it is proposed by parties interested in the development of the use of slate to erect a building as a specimen, to be inspected by all whom it may concern. A Pittsburgh paper, which has given some attention to glass as a structural material, says that perhaps not one builder or contractor in ten, if told that the common grades of glass have a crushing strength nearly four times as great as that credited, by experienced engineers, to the strongest quality of granite, would accept the statement as true. Yet it is said to be a fact, and being so, the query as to why glass has not received more attention from architects as a structural material, naturally suggests itself.—*Chattanooga Tradesman.*

The Woods of Columbia.

We learn, says the *North-western Lumberman*, from consular reports forwarded from Cartagena, United States of Colombia, the following information relating to the timber of that republic: Besides cedar, mahogany, lignum-vitæ, nispero, limoncillo, and colorado timber, there exists an abundance of other valuable woods, such as vivaseca, lancewood, rosewood, guayba uraba, dividivi, and santa-cruz. There are also a number of wood, of the first quality for naval construction, such as corazon verde (green-heart), etc.

There is a wood called olleto, out of which piles can be made that cannot be destroyed by the teredo. Of the woods mentioned, the supply of cedar and mahogany is inexhaustible; of ebony, rosewood, colorado, and lignum-vitæ, nearly so. A cargo of timber can be procured that will average nearly 800 ft. per stick. The writer has a hewed stick of cedar which measures 42 x 48 in., 19 ft. long, and a hewed stick of mahogany which measures 24 x 34 in., 32 ft. long. He has seen a canoe 63 ft. in length by 4 ft. 4 in. in width, that had been hollowed out of the heart of a cedar tree, and one of 70 ft. in length by 10 ft. in width that was hollowed out of the heart of a campana tree. There are several trees standing in the forests near Monteria that have a circumference of 30 ft.—*Timber Trades Journal.*

The Sanitary Science of the Pentateuch.

A writer in the *Journal of Science* thinks that the knowledge of sanitary science possessed by Moses was in advance of that of to-day. He says: "So peculiar is human progress, that it has taken three thousand years to bring the civilized world to a point less advanced than that occupied by Moses. Less advanced, we say, emphatically; because, if we now admit the value of personal cleanliness, the importance of avoiding putrescent and loathsome matters, and of expelling them rapidly from our cities, and if we are theoretically aware of the disinfecting and deodorizing power of earth, we are far from embodying this, our knowledge, in the practice of actual life. As to the avoidance of blood of the flesh of foul-feeding animals, and of such as are liable to introduce entozoa into our systems, we do not recognize, even verbally, the importance of the Mosaic teachings. We eat 'blood puddings,' we feed swine with blood and with foul-smelling offal, and then we eat the animals which have been gorged on this revolting diet. And we pay the price of this uncleanness in shortened lives and in waning vigor. We again call attention to the remarkable physiological insight displayed in the sanitary code of the ancient Israelites, and we repeat the question, Whence did it spring?"—*Sanitary Engineer.*

No State in the Union is in better condition than Tennessee. The census returns show a steady improvement in the last ten years, both in the variety and amount of the products of the soil, in manufactures, mining, and business generally, and a very gratifying gain in the population. It is safe to compute the gains to the State in new homes, new farms, stocks, bonds, new business undertakings, and in cash capital since 1865, at \$500,000,000. This, over and above the mere expenditures for the generally comfortable living of the people, ought to be very satisfactory, and should silence those who would prevent capital and immigration from coming into the State, which, after more than one hundred years of labor by an honest, hard-working, and thrifty people, they declare to be so pauperized that the poor man cannot pay for their daily bread.—*Chattanooga Tradesman.*

Intending house-builders should be most careful in attending to the bedroom department.

We make no objection to the house being well provided with entertaining rooms, and those of ample dimensions; but we do most strongly object to the system, too often adopted, of obtaining these at the expense of cramped passages, stairways, and confined bedrooms. Nothing adds so much to the comfort of a man's life as good roomy bedrooms, and nothing to the convenience of a family as plenty of them. Architects, in claiming, and unfortunately getting, ample space for reception, dining, and other rooms, and giving the least dimensions to the bedrooms, seem to forget that in no room does a man spend so much of his time as in the latter. It should, therefore, be so large as to give plenty of room, and to have the bed so placed that when the window or door is open it will not be in the line of direct draft. Ask a physician, and he will tell you, that in cases of severe illness, there is nothing he dreads so much as the confined room in which his patient is placed; the air in it is always foul, and can only be made fresh at a fearful risk. Looking at the question from all sides, we are strong advocates for large bedrooms, indeed, for their comprising the best rooms in the house—for the confined closets which our architects and builders often deem it right to give us have a profound contempt. There can be no real health enjoyed when a person lives more than half his time in a little cramped-up room.—*Builder and Wood Worker.*

Dark Houses.

A dark house is always unhealthy, always an ill-aired house. Want of light stops growth, and promotes scrofula, rickets, etc., among the children. People lose their health in a dark house, and if they get ill, they cannot get well again in it. Dr. Edwards, of Paris, says the action of light tends to develop the different parts of the body in that just proportion which characterizes the species, and that in warm climates, the exposure of the whole surface of the body to the action of the light will be very favorable to the regular conformation of the body. Humboldt confirms this in the account of his voyage to the equinoctial regions. He says: "Both men and women (whose bodies are constantly inured to the effect of light) are very muscular, and possess fleshy and rounded forms. It is needless to add, that I have not seen among this people a single case of natural deformity."—*Builder and Wood Worker.*

There is nothing new under the sun. Luminous paint, which produces beautiful effects in the dark, is being introduced as a novelty, when in fact the Emperor of China, in the year of grace, 976, possessed a painting, the subject of which every morning left its frame to go and take a walk, and was only on view at night. The Emperor naturally thought there was something peculiar about the artist, but it turned out that he made his paints of a luminous substance extracted from the oyster. To-day, a thousand years later, oyster-shells and sulphur are astonishing our grown-up minds.—*Industrial News.*

The *American Manufacturer* says: "The industrial development of the South is advancing by leaps and bounds, and the beauty of it is the fact that the other sections of the country have no feeling of jealousy, but, on the contrary, have only words of encouragement. We are glad that this feeling exists—glad in behalf of the South, glad in behalf of the other sections, and glad in behalf of our common country, in whose greatness and progress we all take pride."—*Chattanooga Tradesman.*

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The Strength of Wood.

At the late fair of the Massachusetts Charitable Mechanics' Association, held at Boston, there were exhibited interesting tests of constructive material, among these, of pine columns, which had in some instances supported remarkable pressure. One of these columns, originally twelve feet long, yielded to a pressure of 190,000 pounds; the weak spot being a large knot, which acted as a wedge, and caused the destruction of the column at less than the proper figures for a sound piece. Another column was twelve feet long, and tapering from seven and three-fourths to six and a half inches in diameter. This stick showed its weakest point at the smaller end, the crumbling of the fibers taking place in that part. A seasoned hard pine girder, eleven inches square and ten feet long, bore the astonishing load of 751,000 pounds.—*Southern Manufacturer and Builder.*

Tramps.

Fifty years ago there were no tramps, but there were plenty of apprentices. Then everybody could learn a trade; now boys are shut out by the arbitrary laws of trades' unions; manufacturers dare not employ any boys, and the beneficent, time-honored apprenticeship is entirely abolished. Boys without trades grow up without education, and become idle members of society, living upon their relatives when times are good, and when they cannot keep them longer, the youngsters are turned loose upon society perfect outlaws. If the apprentice system can be again introduced, which means the destruction or modification of trades' unions, we shall see a wholesome change. Tramps are the result of the abolishment of the apprentice system; let us encourage home manufactures and home manufactures by teaching trades to the young.—*Manufacturer and Builder.*

Growth of Portland, Oregon.

The *Oregonian* reports \$1,150,075 expended in building improvements at Portland, during 1881. The larger operations are reported: one of \$85,000; one of \$50,000; two of \$43,000; three of \$40,000; two of \$25,000; one of \$22,000; one of \$15,000; two of \$12,000; four of \$10,000; and so on down to small amounts. The \$50,000 building was "the largest and handsomest residence erected during the year, for Hon. J. N. Dolph, containing twenty-two rooms, all finished in oak and black walnut. Mr. H. W. Cleveland of San Francisco, architect. Street improvements are reported at a total of \$283,538.37. Anticipations for 1882 are large.

Subscription price of this journal is \$2.00 in advance.

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We cannot refrain from repeating our disapproval of the too common practice of seeking to obtain the artistic and skillful labors of architects at unfair and insufficient pay, and using their productions with as little advantage or profit as possible to those whose mind work is unchecked except by the slumbers of night.