

**LIEN LAWS AND CONTRACTING.**

THE general tendency of business for some years past, says the California Architect and Building News, has been, for a smaller number of individuals, as principals, to do a larger business at a smaller profit. But in the business of contracting to build, the tendency has been, on the contrary, for a larger number of individuals to do a smaller business, at no profit at all, and often at a loss. This does not often fall upon the contractor, because a large majority have nothing to lose. These conditions have naturally reduced the number of responsible and experienced contractors, many of whom have abandoned the business, while others have been obliged to do so, after sacrificing their legitimate accumulations in the throat-cut purse scramble we call competition.

It is claimed by some sufferers that the prevailing conditions have been the result of a grasping disposition on the part of owners; others again insist that architects are to blame in encouraging incompetent irresponsible bidders. But it must be remembered that the system, if we can call an anarchistic state of things a system, has encouraged incompetent, irresponsible people who have failed at other employments, to adopt the calling of contracting or the profession of architecture; and it is not wonderful if these disturbers of the peace and prosperity of a community should combine to get a living at other peoples' expense.

We believe that no improvement can be hoped for as long as the "Lien Law" is in force. The law relieves everybody connected with the building operation of responsibility, though it is ostensibly intended to fix responsibility and protect innocent parties. In practical operation it enables any impecunious person to get credit and bonds, in order that he may have the handling of the funds to be distributed, often pro rata; in consequence of the impossibility of doing the work at the contract price, or because in the handling, too large a percentage has adhered to his sticky fingers. Sound business principles are always, in the long run, stronger than any statute which conflicts with them, and that attempts to prevent their action. This is what might be expected, because business principles are the result of the experience of the world for ages, and have become a natural force that can be counted on, like the laws of gravity; and any attempt to ignore or defeat it, brings confusion to the man or class who make the attempt. It has been believed that the Lien Law was a necessary protection, first to the journeyman mechanic against the misfortunes or dishonesty of his employer, the contractor; then to the sub-contractor against the same. The business community has, however, discounted the practical working of this elaborate machinery to entrap an unwary owner into paying for twice as much as he receives. A counter machine of bonds, and retention of contract money, together with time limits and other technicalities, was soon set up; and while the expenses and uncertainties of building, for all concerned, have been increased by this legislation and counter legislation, the inevitable net result has been to increase unscrupulous competition, or, rather, to turn the business into a gambling scheme, as devoid of business principle as a bluff in a game of cards.

The fact is that the Lien Law is class legislation, and as such has been pronounced unconstitutional by the supreme courts of more than one state. The Supreme Court of the state of Ohio used this language in a decision in 1897:—"No court can see that it is for the

common public welfare that the liberty of contract should be taken away from the owner of a building to enable the seller of materials to collect their value from a man who never purchased them, and who has already fully paid the one with whom he contracted for all that he received."

It will be seen that without a lien law, business would be transacted on the usual basis. Bonds would not be expected, because owners would take only the usual business risks in employing contractors—and these risks would be mutual. Hence only responsible parties could engage on either side, and remuneration would be adjusted as real compensation.

**STRUCTURAL IRON AND STEEL WORK.\***

In setting iron work, great care should be observed to have the top and bottom and the bedding plates of stanchions perfectly level and truly fitting together closely without the need of wedging to bring them to a vertical position, so that the entire of the surfaces shall be bearing the load equally distributed throughout; also that bedding plates of stanchions upon stone pier blocks shall be evenly bedded with Portland cement; also that the bearing surfaces of girders upon cap plates and other supports shall be in full contact all over, without resorting to wedging. Be it observed, that when wedges are used the actual bearing surfaces are reduced to the sum of the areas of only the portions of them which may be in close contact with the upper or under surfaces, whereby greatly intensified stresses are brought upon these parts which may produce danger. The head and foot plates are planed smooth and truly square to the vertical axis of the stanchions. Cast iron, in the absence of stone, may be used for templates to receive the wall ends of girders, beams, and trusses, which should never be laid directly upon brickwork. In the best systems of construction the structural iron or steel framework of large buildings is made quite independent of the stone, brick, terracotta, or concrete casings by which the stanchions or columns are surrounded and the intervening bays of light walling, and each successive floor is supported independently by those below it, instead of several upper floors and partitions being carried by the trussed girders of one of the lower floors, usually of the first or second floor. The methods of making joints and connections between stanchion and girder framework are various, and many of them more or less ineffective in attaining rigidity, especially when a fire has taken possession of a building and the girders are liable to be bent or distorted by the heat. Many lives and much property are then often sacrificed because of the insufficiency of the details of the fastening and connection.

Steel (mild) for joists and girders, lintels, bressummers, and other structural purposes, in price and adaptable sections in stock between 3 in. and 16 in. deep, is, considering its greater strength and better properties, generally preferred to wrought iron for the more important classes of structures. Its safe tensile strength is about one-half greater than wrought, and between five and six times greater than that of cast iron. Its compressive strength is three times that of wrought iron, and nearly two-thirds greater than that of cast iron. Steel plates, joists, angles, and channels, which by riveted combinations are made into girders and trusses for floors and trusses for roofs, are now much used.

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