

# THE Canadian Contract Record

A Weekly Journal of Advance Information and Public Works.

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## THE CANADIAN CONTRACT RECORD,

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The purpose of this journal is to supply Contractors, Manufacturers and Dealers throughout Canada, with advance information regarding contracts open to tender, and to furnish Architects, Municipal and other Corporations with a direct medium of communication with Contractors.

Information from any part of the Dominion regarding contracts open to tender will be gratefully received.

### ADVERTISING RATES ON APPLICATION.

At its Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

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### CARCASS-ROOFING.

In small buildings all the rafters are of one kind; but in great buildings the whole weight of the covering is made to rest on a few principal rafters, which are connected by beams placed horizontally, and either mortised into them or scarfed on them. These are called purlins. Small rafters are laid from purlin to purlin, and on these the laths for tiles or the skirting-boards for slates are nailed. Thus the covering does not immediately rest on the principal frames. This allows some more liberty in their construction, because the garrets can be so divided that the principal rafters shall be in the partitions, and the rest left unencumbered. This construction is so far analogous to that of floors which are constructed with girders, binding and bridging joists. It may appear presuming in us to question the propriety of this practice. There are situations in which it is unavoidable, as in the roofs of churches, which can be allowed to rest on some pillars. In other situations, where partition walls intervene at a distance not too great for a stout purlin, no principal rafters are necessary, and the whole may be roofed with short rafters of very slender scantling. But in a great uniform roof, which has no intermediate supports, it requires at least some reasons for preferring this method of carcass-roofing to the simple method of making all the rafters alike. The method of carcass-roofing requires the selection of the greatest logs of timber, which are seldom of equal strength and soundness with thinner rafters. In these the outside planks can be taken off, and the best part alone worked up. It also exposes to all the defects of workmanship in the mortising of purlins, and the weakening of the rafters by this very mortising; and it brings an additional load of pur-

lins and short rafters. A roof thus constructed may surely be compared with a floor of similar construction. Here there is not a shadow of doubt that if the girders were sawed into planks, and these planks laid as joists sufficiently near for carrying the flooring boards, they will have the same strength as before, except so much as is taken out of the timber by the saw. This will not amount to one-tenth part of the timber in the binding, bridging and ceiling joists, which are an additional load, and all the mortises and other joinings are so many diminutions of the strength of the girders; and as no part of a carpenter's work requires more skill and accuracy of execution, we are exposed to many chances of imperfection. But, not to rest on these considerations, however reasonable they may appear, we shall relate an experiment made by one on whose judgment and exactness we can depend. Two models of floors were made, eighteen inches square, of the finest uniform deal, which had been long seasoned. The one consisted of simple joists, and the other was framed with girders, binding, bridging and ceiling joists. The plain joists of the one contained the same quantity of timber with the girders alone of the other, and both were made by a most accurate workman. They were placed in wooden trunks eighteen inches square within, and rested on a strong projection on the inside. Small shot was gradually poured in upon the floors, so as to spread uniformly over them. The plain joisted floor broke down with 487 pounds, and the carcass floor with 327. The first broke without giving any warning, and the other gave a violent crack when 294 pounds had been poured in. A trial had been made before, and the loads were 341 and 482; but the models having been made by a less accurate hand, it was not thought a fair specimen of the strength which might be given to a carcass floor. The only argument of weight which we can recollect in favor of the compound construction of roofs is, that the plain method would prodigiously increase the quantity of work, would admit nothing but long timber, which would greatly add to the expense, and would make the garrets a mere thicket of planks. We admit this in its full force; but we continue to be of the opinion that plain roofs are greatly superior in point of strength, and therefore should be adopted in cases where the main difficulty is to insure this necessary circumstance. - J. Robinson, in *The Architect*, London, Eng.

### CHIMNEYS.

For those parts of a chimney which are supported throughout, stone may, under some circumstances, be admissible, but brick is always preferable for the purpose. The abutments of a chimney should be tied into the walls by wrought iron bars of sufficient number and strength, turned up and down at the ends, and built into the jambs for several inches on each side. No part of a flue should be of less thickness than half a brick, or 4½ inches. Where slabs of stone or slate are placed level with a floor before the opening of a chimney, they should invariably be laid in sound mortar, cement or other incombustible or non-conducting substance, and it should be at a distance of not less than 4½ inches from the joints, flooring or any other woodwork. A chimney built only up to the roof, and stopping at that point, is always dangerous. Every chimney in a house should be perfectly distinct and separate from every other chimney, from the hearth to the external opening. Chimneys may safely be built in stacks, but they should on no account have any connection within the stacks. Brickwork around flues should not be less than 4½ inches thick in any part. By the Code Napoleon it was not permissible to build a chimney against the wall of another house without isolating it by an intermediate wall of sufficient thickness to prevent heat passing to the neighboring premises.—*Builder and Woodworker.*