

**FIRE-PROOF CONSTRUCTION.**

What looks like a very promising innovation in fire-proof construction has been introduced by a Swiss architect, Herr Siegwart, of Lucerne. In this method iron beams are interly dispensed with for spans of sixteen feet or less, and in place of them, the floor is formed of what may be called box girders, made of concrete, reinforced with iron, and laid close together. The joint between the girders is made with grooves, and is left a little open at the top, so that it can be filled by grouting. The advantage of the system is that, the concrete beams being made at the factory, much greater uniformity and strength can be obtained in them than is possible with concrete laid in place. The concrete boxes are, moreover, comparatively light, and can be laid without centering. Where a wood floor is to be laid over the fire proof construction the joint is recessed on top to admit a wooden sleeper, which can be held by a simple method of dovetailing. On account of the high price of structural steel in this country, any method of meeting the demand for fire-proof construction without the use of metal is of importance; and, on a large scale, hollow flooring blocks of this sort could be manufactured very cheaply. It would only be necessary to make a few stock sizes to be able to furnish at once the material for any floor, thus avoiding the delays which seem to be inevitable in procuring iron-floor beams ready for use, and the floor, when set, could be plastered beneath, and the wood flooring laid on top, immediately, without the necessity of waiting for mortar to harden before removing centering, or the delay and annoyance inseparable from our present system of filling up between the sleepers with wet concrete, and thus saturating the whole construction with moisture, just before laying the finished floor. We should like to see the new system tested by actual fire before approving it unreservedly for spans as great as sixteen feet; and certain details of framing around staircase and other openings will need study; but there is not likely to be any insuperable difficulty in adapting the construction to our needs, and a form of fire-proof floor so simple and cheap, presenting, also the great advantage that it can be penetrated in any direction by pipes or electric conduits, is worth developing.—American Architect.

**PORTLAND CEMENT CONCRETE.**

The cost of Portland cement concrete, for railroad work, seems to be now about the same everywhere in this country, making allowance for local variations in cost of stone and sand, ranging from seven to eight and one-half dollars per cubic yard, with the average, perhaps, about eight dollars; and there seems to be little differ-

ence in cost between hand and machine mixing, the former being cheaper for small work, and the latter for work on a large scale. In regard to quality, says the American Architect, the railroad engineers find no practical difference between the hand-mixed and the machine-mixed concrete, and architects will probably agree in this view, the machine-mixing being, perhaps, a little more regular, but any carelessness in machine-mixing involving worse consequences than in hand-mixing. As between wet and dry concrete, meaning by the latter a concrete on which water can be brought to the surface only by heavy ramming, the railway engineers, as a rule, prefer a moderately dry material, such as will not quake under the rammer, but on which water will show after a few minutes' tamping. No doubt, a dryer concrete may, theoretically, be better, but it is quite possible for concrete to be put in so dry that it will begin to set, in hot weather, before the water is brought to the surface, so that the tamping injures it by breaking up the initial set; and, as one engineer remarks, concrete that is too dry is worse than if too wet. Concerning concrete work in freezing weather, again, the practice of the engineers does not quite support the theories. We are treated several times every year to demonstrations that freezing does not injure Portland cement concrete; but nearly all the railway engineers, it seems, while

they do not contradict the demonstrations, prefer not to do concrete work when the thermometer is below twenty degrees Fahrenheit. In any case, they find it much more expensive in cold weather, and even when the sand and water are heated, they think that the concrete is unsatisfactory, inclining to crumble on the surface, if nothing worse.

**REAL ESTATE TRANSFERS.**

The following transfers of vacant property in Toronto are reported since last issue:

Walker avenue, s. s., Canada Permanent and Western Canada Mortgage Corporation to Charlie Peart, 25.3 x 139, being part lots O and N, plan 820, assessed at \$379; no improvements.

Carlaw avenue, e. s., Thomas Williams to Mary O'Hara, 19 x 119, being part lots 10 and 11, plan 705, assessed at \$228; no improvements.

Glen Road, e. s., M. H. Ludwig to C. R. S. Dinnick, 60 x 156, being part lot 5, plan 433, assessed at \$2,700; no improvements.

Meredith Crescent, s. s., Hospital for Sick Children to Henry Hutson, 50 x 96, being lot 10, plan 24 E, assessed at \$1,250; no improvements.

Shudell avenue, n. s., Patrick Norton to Thomas Little, 20 x 103, being part lots 9 and 10, plan 46 E, assessed at \$60; no improvements.

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