

### CEMENT WASH FOR PROTECTING IRON WORK.

Coatings of cement have been employed by certain railway companies in France for some years past to protect the metallic portions of bridges crossing their lines from the rapid destruction to which such parts are liable by reason of oxidation, through being continually exposed to the action of steam and gas, products of combustion escaping from the locomotives. A method of applying the cement which is used in Austria, and is highly spoken of, is described in "La Revue Technique." It consists in brushing down the ironwork with a leather broom, damping it with a whitewash brush, and afterwards applying two coats of Portland cement wash made rather thick, and having added to it a proportion of fine sharp sand. At Zeebrugge, in Belgium, where a deep-water harbor is now in course of construction, a portion of the pier of 300 metres in length is being formed of open work, and the steel piles of this part are covered with a coating of semi-fluid cement mortar, applied by means of an apparatus worked by compressed air; the piles having first been subjected to a preliminary cleansing by means of a sand-blast projected by the same air pressure apparatus.

## MUNICIPAL DEPARTMENT

### PAVEMENTS BETWEEN STREET RAILWAY TRACKS.

An account of the paving between the street railway tracks at Toronto, Ont., was given by Mr. Charles H. Rust, city engineer, in a paper presented to the recent convention of the American Society of Municipal Improvements, from which the following abstract has been taken:

In 1891 the exclusive privilege of operating the street railways in Toronto for a period of thirty years was disposed of to the Toronto Railway Company. The agreement made between the city and the company included, among other things, that when a street on which the tracks were then laid was to be paved in a permanent manner on a concrete or other

like foundation, the company should remove the old tracks and substructure and replace them under the supervision of the city engineer and to his satisfaction. Also, when the company desired or was required to change any existing tracks or substructures for the purpose of operating by electricity or other motive power, approved by the city engineer and confirmed by the council, the city would lay a permanent pavement in conjunction therewith on the track allowance to be occupied by such new tracks and substructures. Under the terms of the agreement the company pays the city \$1,600 per year per mile of double track and eight per cent. of the gross receipts. When the receipts exceed \$1,000,000, ten per cent. is to be paid.

A great diversity of opinion has arisen as to the meaning of the word permanent used in connection with pavements. It was finally agreed that, in connection with the agreement between the city and the railway company, it should refer to pavements with a concrete foundation. In the spring of 1892 plans and specifications for paving the track allowance on a number of streets were prepared and 29.9 miles of track were taken up and relaid that season. The method then adopted is shown in the illustration on next page.

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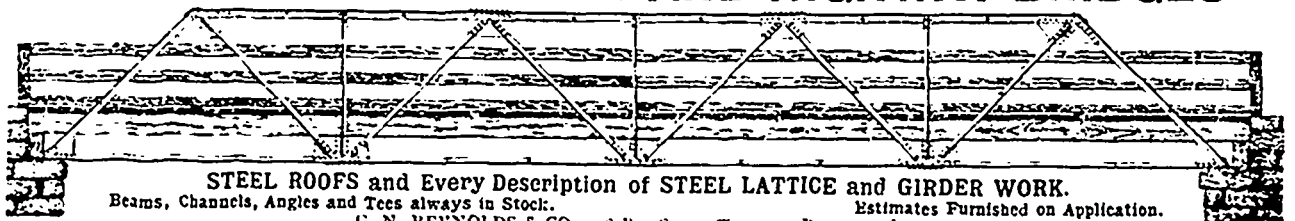
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