(2) Make certain that the joints are broken so that one-third or more of the brick of one course overlaps the brick of the next course.

(3) Be sure that every fourth course is driven up to a straight line.

(4) For the sake of appearance, keep the line of the brick at right angles with the curb.

Next in order is culling. Care should be taken to see that all soft brick or brick that are burned too hard are removed. Those so heavily kiln-marked that they will cause unevenness in the pavement should be turned. Caution should be exercised in this, for many a kilnmarked brick is thrown out which, if allowed to remain would have been of more value to the pavement than others that are retained.

After the brick are thus placed in the street, their slight unevenness should be ironed out by the use of a roller not exceeding 5 tons in weight. If a horse roller is used at all, it should have a diameter of at least 5 feet. Rolling should begin on one side and pursue a course parallel to the curb. The roller should return over the same course. The next trip should lap the first, the roller again returning over the same course. This should continue until the centre of the pavement has been reached when the roller should be moved to the opposite curb and continue as before until the centre is reached from the other side.

The roller should then start at one side and work diagonally across the pavement. This diagonal rolling will have a tendency to bed the brick in such a manner as to avoid "rocker." The pavement should then be culled again for broken brick, after which it should be handrammed with a paver rammer weighing not less than 50 pounds. Interpose a plank not less than 6 feet long, 10 inches wide and 2 inches thick, between the surface of the pavement and the rammer. The plank should be laid parallel to the curb.

For filling joints, the next process in order, use a grout filler composed of equal parts of sand and cement. It seems hardly necessary to state that the cement should meet the standard specifications for Portland cement as adopted by the American Society for Testing Materials. The sand with which we have had much success has been taken from the lake and, although not very sharp, is nevertheless fine and clean and has given good results. In any event the sand to be used should be free from sewage, acid or soil, and should be sharp and fine.

A watertight box, standing on uneven legs so as to afford a "lower corner," should be used as a receptacle for the grout. In it place one cubic foot of sand and one bag of cement, mixing the mass until it assumes a uniform color. Add water and stir the mixture until it assumes the consistency of thin cream. The mixture should then be applied to the pavement by means of scoop shovels and thoroughly swept into the joints. After this has had sufficient time for setting a second coat, slightly thicker, should be applied and later a third coat, which will assure filled joints. This last coat should be worked either with a specially prepared broom or a rubber squeegee, and swept across the joints at an angle of 45 degrees.

After the initial set has taken place, the pavement should be covered with a half inch or more of sand and this kept saturated with water for at least 5 days. The pavement should not be opened to traffic for at least 10 days.

We have not undertaken any special provision against possible thermal effect, such as contraction and expansion due to low and high temperatures, but have relied mainly upon the condition of our structure by avoiding moisture underneath the roadway and by an endeavor to have our cement-filler of the greatest possible strength. These provisions, together with a rigid curb, enables us to hold in compression, the expansion occurring in our narrow roadways. In this respect, we have not been entirely successful. A few cracks in the pavement have appeared, but so far, they have not ravelled out so as to injure the traffic worth of the road, and have not been thought of sufficient importance to require repairs.

## COAST TO COAST.

Montreal, Que.—The fourth and last 270-foot span of the C.P.R. Lachine bridge has been placed in position.

**Toronto, Ont.**—The Hon. Robert Rogers, when inspecting the city harbor, made the statement that it is planned to have the Great Lakes watercourse for ocean freighters completed in 1918.

**Regina, Sask.**—The sewer work contracted for by the Regina City Council early in the year is nearly all completed, and already the city engineer and his staff are busily engaged on planning the extensions for next year.

**Vancouver, B.C.**—The contractors have announced that within 30 days, work will commence on the erection of the Dominion Government dock in East Vancouver, which has let at an estimate of three-quarters of a million dollars.

**Edmonton, Alta.**—The city council has instructed the city commissioners to apply to the Dominion Government to have lands reserved for the source of the city's gas supply in the gas district at Vegreville. A pipe line of 90 miles, the cost of which would be \$946,500, would be necessary to carry the supply to Edmonton.

**Saskatoon, Sask.**—At the recent convention of Canadian municipalities held at Saskatoon, a movement was see on toot to urge the establishment of a local government board, whose particular function will be to keep in constant touch with the finances of each city and municipality within its jurisdiction on lines similar to the system in vogue in England.

Montreal, Que.—The first C.N.R. train to make the through trip from Toronto to Quebec, covered the road early in October, bearing the president and Lady Mackenzie to the "Royal Edward" steamship. The track is pronounced in first-class condition, though regular passenger service will not commence until the ballasting is fully completed.

Ottawa, Ont.—The Conservation Commission will support the recommendation of the Ontario Municipal Electric Association that the water powers along the rivers and canals of Ontario be handed over to the Ontario Hydro-Electric Commission. It has been urging this policy for some time, though it is not particular whether the development is carried out by the federal or by the provincial government.

**Edmonton, Alta.**—A deputation of 70 farmers called upon Premier Sifton to ask that he urge upon the government the necessity of considering the question of assisting in the building of light railways to connect with settled districts removed from main lines of railway. The deputation was particularly concerned with the construction of a railway in Blindman Valley in the Lacombe and Ponoka districts.

Montreal, Que.—Mr. T. S. Darling has stated that between the 20th and 30th of December, the completion of the tunnel through the mountain will be announced. Two thousand feet of distance remain to be cut, but there has been little trouble so far and none anticipated until the work <sup>15</sup>