

it was entitled to free entry. When these exemptions were granted a couple of years ago it was distinctly stated by Mr. Bowell that the exemptions applied to classes or kinds of machinery that were not yet produced in Canada. But the contention that because Smith's pump is not made here, therefore Smith's pumps should come in duty free, though Canadian pumps serve the same purpose, is a self-evident absurdity, and the mining men will weaken their cause by attempting to include too much in their exemption list.

THE annual convention of stationary engineers to be held in Montreal this autumn will be one of more than usual interest, and we are glad to learn that the city council has granted a sum of money towards entertaining the members, besides giving the use of the city council chambers for the convention meetings. The attendance from distant points will be large if the railways make generous terms for the trip.

ENQUIRIES have been made within the past few days by capitalists, one representing a company in Montreal and one from the Maritime Provinces, as to the conditions on which smelting works may be established in Toronto. For the information of these and others it may be mentioned that the city propose to give to any company starting a smelter a site 100 acres in extent on the Ashbridge Bay marsh, with a bonus of \$75,000 and exemption from taxes for a period, provided the company expend in the proposed works \$400,000, which was their estimated cost. It is proposed to draw the ore from the Southern States, and use the ore of the Marmoras, Ont., mines as a mixing ore; but Mr. Geo. E. Drummond, of the Canada Iron Furnace Co., points out that this would be a mistake from an economical, as well as a patriotic standpoint, as the labor of mining and the money that would pay for the ore would go to the United States.

A FRESH break, discovered this month, in the Toronto waterworks conduit pipe, outside the bay, has re-opened the subject of a pure water supply for Toronto. The people of the city are tired of the time-enough policy shown in dealing with a question which may truly be called one of life and death. Within the past few days no less than four companies have offered to supply the city with ample pure water, and give apparently good guarantees for the performance of the work. The good name and character of Toronto depends upon the early and thorough solution of this matter, and a picayune or temporizing policy will work incalculable damage to the reputation of the city.

COL. TISDALE'S scheme for cutting a canal from Lake St. Clair to Lake Erie, though received with indifference in the House of Commons last session, is not without its friends. Conway Wyatt, an English engineer, now resident in Minneapolis, is prepared to build the canal and has friends who will invest in it. The cost would be about \$4,000,000, the canal—which would run through Kent and Lambton—being 13 miles long and having a depth of 21 feet. Mr. Wyatt has been to see Col. Tisdale within the last few days, and is prepared to start work as soon as a Dominion charter is given.

It used to be said that the only substance capable of cutting diamonds was a diamond itself. Now, however, a purely artificial material has been manufactured which does the work equally well. It is called carborundum, and is the result of the passage of a current of electricity through an intimate mixture of sand and

carbon. The silicon combines with a portion of the carbon, forming a porous, cinder-like mass of crystals; and these, after being separated, one from the other, by means of crushing, are sorted out according to size. So far as we know, carborundum has only been used in the cutting and polishing of diamonds, but doubtlessly as time goes on other uses will be found for it as well.

A HIGH-SPEED locomotive has been sent from England to the World's Fair, the driving-wheels of which are seven feet, six inches in height. It was built for private use, and is said to have covered ninety miles an hour. There are four cylinders on the front of the engine, and the driving-rods are so arranged that each driving-wheel is connected with a different cylinder.

It is pleasing to know that some Canadian manufacturers have, in the course of recent years, not only gained supremacy in the home market, but have been able to ship to foreign countries in the face of the competition of the world. An instance of this is afforded by Samuel Rogers & Co., proprietors of the Queen City Oil Works, who four years ago sent a trial shipment of their oils to Australia. The quality of their goods was so well appreciated in the antipodes that a steady demand arose, not only in Australia, but in New Zealand, until now the amount of this firm's export of oils there amounts to several thousand dollars annually. The Australians appear to have found that the Canadian oils are not affected by the change of climate to the extent other oils are, and do not get thin by reason of the heat.

A STILL more conspicuous instance of the march of Canadian industries has been brought to our notice from Newfoundland. Tenders were recently invited there by R. G. Reid, the well-known contractor, for the bridge work of the new railway running from St. John's to Hall's Bay. From twenty to twenty-five streams had to be bridged over with iron bridges, and the contract has fallen into the hands of the Dominion Bridge Co. of Montreal, though tenders had been received from England, Belgium, and other countries. The Dominion Bridge Co., who erected the celebrated C. P. R. bridge over the St. Lawrence, have begun the work, and will have all these bridges erected during the present summer, replacing the temporary wooden structures. It may also be mentioned that another Canadian firm, the Crossen Car Works, were successful in obtaining the contract for the passenger cars for the same railway. It is pleasing to note these things, not merely as evidences of Canadian enterprise, but as tokens of the growing intimacy of commercial relations between the Dominion and her insular neighbor.

SIR OLIVER MOWAT has assured a deputation of locomotive engineers from the railway corporations that the legislation threatened by a member of the Ontario Parliament last year with a view to compelling engineers to take out a government license, will not be acted on, as such matters may be dealt with by the Dominion Parliament only.

DELALOE & PIAT, of Paris, have made a machine for riveting by electricity, which is fully described in a recent number of the *London Engineer*. The piston is moved forward in a horizontal direction by the action of the electric motor working through speed-reducing gear, and compresses oil on the upper surface of the ram up to 300 kilograms per square centimeter—two tons per square inch. The ram, which acts vertically, has an area of 16 square inches, and therefore the