rate is only a paper rate, and that no traffic moves under it. The iron and steel rates of the country stand in a certain relationship one to the other. The commodity moves, speaking generally, under the 5th and 6th class in carloads; and, while there may or may not have been any traffic to move out of Sarnia and none moving from that point, there is no doubt at all that traffic of this character moves and is moving freely. The same 86c. rate applies from Hamilton and Montreal, and also from Walkerville, where there is also a bridge plant. The large viaducts and bridges in the west, many of them fabricated in the east, need only be instanced. At present, it is true, that a large portion of this business, perhaps indeed most of it, is now fabricated in the west for the west. The large plant of the Manitoba Bridge Co. and the branch factory esab-lished by the Dominion Bridge Co. in Winnipeg, may be taken as evidence of this fact. While this is true, no new tariff structure can be justified, the effect of which would be to favor the eastern fabricator of iron and steel as against his western competitor in the western market

Before the Board can give effect to the application, the unreasonableness of the present rate must be established. If unreasonable ex Sarnia, they cannot very well be reasonable ex Hamilton, with its shorter mileage. The simple fact that well be reasonable ex frameter, in the shorter mileage. The simple fact that the Imperial Oil Co. has a specially large shipment to make and on which large traffic returns could be earned cannot be considered by the Board as overruling other considerations. It is true that under the act the tolls for larger quantities may be proportionately less than the ties may be proportionately less than the tolls for smaller quantities (s.315, s.s.3). Effect has been given to this section in the lower car lot rates—in the lower rate basis given the carload as against less than carload movements. Further than this the Board has not, and in my opin-ion ought not to go. There is no real handicap on the smaller manufacturer or dealer under this system. Practically all engaged in the handling of the different commodities that move in carloads have enough business to provide for a carload movement, which in turn represents a greater transportation facility and les-sens railway expenses. On the other hand, were rates for movement of 5,000 tons, for example, less than for 2,500 tons, it would be simply handicapping the smal-ler dealers and bonusing the larger. If the system were applied to the movement of any commodities moving in large volume, such as coal, the only effect in the long run would be to work the extinction of the smaller dealers and place the business of the country in the hands of large distributors. must be dismissed. The application

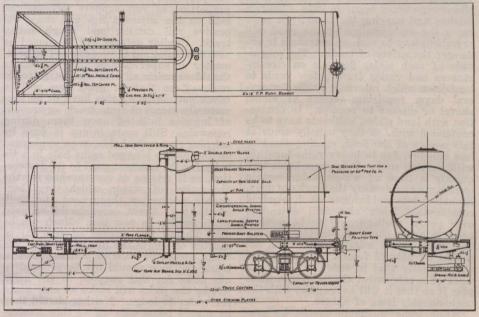
To Protect Bottom Flanges of girders over railway tracks from the rapid deterioration due to the chemical action of smoke and gas, together with the erosive effects of engine blasts, it was found, after trying several other devices, that 7%-in. plain oak sheathing held firmly in place by iron clamps, the sheathing being first covered on its upper side by a paste composed of red lead and Portland cement, was very satisfactory. As stated by L. M. Hastings, city engineer of C. mbridge, Mass., the oak sheathing showed surprising resistance to the destructive action of the blast. Some pieces of oak taken from the bridge after 10 or 12 years exposure showed a loss of thickness of not more than <sup>1</sup>/<sub>4</sub> in.

## Tank Cars for Canadian Northern Railway.

The centre construction consists of two 15 in. 55 lb. rolled steel channels, spaced 12% in. apart, running continuous from end sill to end sill and reinforced on top by two cover plates  $20\frac{1}{2}$  in. x  $\frac{1}{4}$  in. running from bolster saddle to anchor. The end sills are formed from 8 in. 13.75 lb. rolled steel channels, with flanges facing inward, connecting at the corner through  $\frac{1}{5}$  in. gusset plate, forming a tie for the 3 x 3 x  $\frac{3}{5}$  in. rolled steel diagonal brace

The tank proper is made up of 5 circumferential sheets of  $\frac{1}{4}$  in. plate and 1 bottom sheet of  $\frac{3}{5}$  in. plate. Longitudinal seams are double rivetted and circumferential seams single rivetted. The dome is fitted with malleable iron cover, and ring  $\frac{5}{5}$  in. double safety valves. The base of the tank is also provided with 6 in. outlet nozzle and cap. Sill steps formed from 2 x  $\frac{3}{5}$  in. steel are provided and located according to Interstate Commerce Commission requirements. The draft gear is of friction type, the air brakes, New York schedule H-C, 1012. The trucks are of 50 tons capacity, having top bars  $4\frac{1}{2} \times 1\frac{1}{2}$ , bottom bars  $4\frac{1}{2} \times 1\frac{3}{5}$  and tiebar  $4\frac{1}{4} \times \frac{5}{5}$ . Wheels are 33 in. diameter, 725 lbs. each. The bolsters are fitted with class D. M.C.B. springs.

bar  $4\frac{1}{4}$  x  $\frac{5}{6}$ . Wheels are 33 in. diameter, 725 lbs. each. The bolsters are fitted with class D, M.C.B. springs. Each end of tank is provided with a head 7/16 in. thick, flanged and dished and single rivetted to shell. The dome sheet is of  $\frac{1}{4}$  in. plate flanged and single rivetted. The dome head of  $\frac{1}{4}$  in. plate is



Canadian Northern Railway Tank Car.

and side sill, the latter being of the same section as the end sill.

The bolster construction consists of two pressed steel diaphragms formed from  $\frac{1}{4}$ in. plate and tied, at the bottom by a plate 24 x  $\frac{3}{8}$  in., at the top by a plate 10 x  $\frac{3}{8}$  in. The two tank saddles consist of 10 x 15 lb. rolled steel channels, located with flanges facing upward and having yellow pine filler to suit contour of tank. The four bottom anchors for tank, extending between the outside and centre crossties, are formed from  $3 \times 3 \times \frac{1}{2}$  in. U-shaped bracings. The three crossties, one being located at the centre of the frame, the others being spaced  $5 \times 8\frac{1}{2}$ in. each side of centre, consisting of  $\frac{1}{4}$  in. steel plate pressings, and are connected to the side sill with  $3 \times 3 \times \frac{1}{4}$  in. angle plate. The running bars consist of  $2 \times$ 12 in. yellow pine and hand rails are provided 12 in. above the centre line of the tank, formed from 1 in. pipe. The end sill is reinforced at striking plate by a steel plate  $\frac{3}{4}$  in. thick. The bolster is reinforced between centre sills by a malleable iron filler. Four hold down straps, formed from  $2 \times \frac{3}{6}$  in. steel bars, terminating in  $\frac{1}{6}$  in. rods, are provided and located each side of centre of tank and 7 ft. 4 in. centre to centre of outside straps. flanged and dished and single rivetted to dome sheet. The 5 in. double safety valve is rivetted directly to the dome sheet, and the tank outlet nozzle is fitted with valve and operating rod, valve being operated from dome with a malleable iron can. The tanks are tested before erection to 60 lbs. pressure per square inch, all seams being caulked.

Canadian Ticket Agents' Association. The next annual meeting and outing will be held at Port Arthur, Ont., June 12. The party will start from Sarnia by Northern Navigation Co.'s steamship, returning by Canadian Pacific steamship to Port McNicoll.

Public Ownership of Public Utilities.— The Royal Commission on the high cost of living, in its report presented recently, advocates public ownership of all public utilities, including electric railways, water, gas and electric light in cities and towns.

The Montreal Warehousing Co's annual meeting was held at Montreal, Mar. 1. The directors for the current year are E. J. Chamberlin, President; H. G. Kelley, Vice President; J. E. Dalrymple, Frank Scott and John Pullen. The Manager and Secretary is C. J. Smith.