furnace by such means. As in the test for refractoriness, the cone should be placed in such a position relative to the sample under test, that both may be subjected to the same temperature.

Inspection and Testing.

Clause 7.—It has been pointed out by the representatives of the manufacturers that, owing to the high cost of carriage, they may be involved in serious loss if material is extensively condemned after delivery. They agree that the purchaser must have entire freedom to test, and reject, if necessary, any material delivered to him; but it is suggested that until all the manufacturers have suitable arrangements and appliances for constantly testing their goods, it may be possible to render them some assistance by allowing a fairly large sample of their material to be sent in for testing and general approval before extensive deliveries are made. This is in no way, however, to be construed as removing the right of the purchaser to test material in any subsequent consignment.

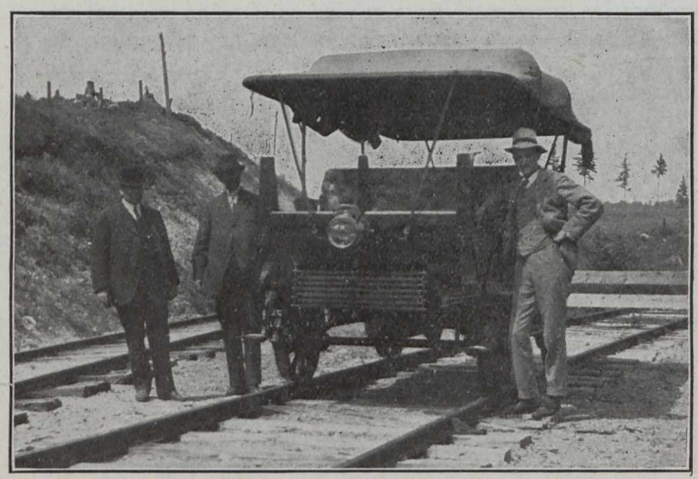
GASOLINE RAILWAY MOTOR CARS.

A new type of gasoline railway motor car has recently been introduced into this country by the Drewry Car Company, Limited, of London, England. This firm manufactures railway motor cars of various types, which they have supplied to over ninety railways in all parts of the world. One of their directors is now in Canada on a visit, and has brought with him a 20 horse-power car to carry six passengers. This car is one of the Drewry Company's most popular models, and is fitted with a four-cylinder water-cooled engine and a three-speed gear and reverse, giving all the speeds in both directions. Two sets of control are provided, one at each end of the car, and the seats are reversible. This enables the driver to sit in the front, and the passengers to face the direction of travel in whichever way the car may be running. This is one of the special features of the car, and entirely obviates the use of a turntable. The body is comfortably upholstered, and is fitted with a Cape cart hood and side curtains, and a folding wind-screen at each end. The car is well sprung, and is fitted with heavy steel wheels and axles, which make for steady running at all speeds.

By the courtesy of the Canadian Pacific Railway a demonstration was recently given on this car, which we illustrate, from Montreal to Mont Laurier and back, a total distance of 316 miles. This is one of the most difficult sections of the road, having a considerable length of 2½ per cent. grade and a large number of short curves. The grades were all taken on top gear at over twenty miles per hour, and on the level the car gave a speed of fifty miles per hour, while at the same time it is capable of running at a slow speed of about five miles per hour, which greatly facilitates track inspection. At the high speeds the running is wonderfully steady, and the railway engineers who were in the car expressed their great appreciation of the capabilities, smoothness of running, and freedom from vibration of the car. Throughout the run an average speed of just under thirty miles per hour was maintained, which, on a heavy line such as the Laurentian branch of the Canadian Pacific Railway, can only be described as a very creditable performance.

The Drewry products are manufactured throughout in England, and their up-to-date models are the result of years of experience and the application of high-grade English methods and materials. Should any further testimony be required of the high standards attained, the following, which was communicated to an English engineering contemporary by their special correspondent in South America, will be found interesting. He reported in part as follows:—

"In many different parts of the world I have heard railway engineers complain of the difficulty in finding a thoroughly satisfactory type of automobile for inspection purposes, and even the most experienced among them have hitherto failed to secure what they want in this respect. Upon the Paraguay Central Railway I have come across what seems to be as perfect and as satisfactory an automobile as has yet been introduced. This is a reversible, six-seated Drewry car, type "K." The car referred to is 16 horse-power, and it has been running now for some six months at an average of 90 to 100 miles a day. Upon numerous occasions it has attained and maintained a speed of 90 kiloms., say, 56 miles an hour. Both the owner, the chairman of the Paraguay Central Railway, and the chauffeur speak enthusiastically of the car and the work which it does. I have travelled many miles over roughly-laid temporary track in this Drewry car, and I must add my testimony to that above quoted, since it would be difficult to find a smoother-running or a more admirably-built automobile than this."



Drewry Railway Motor Car.

The above referred to a similar car to the one herein described. Various models are marketed, ranging from a light car of 4 horse-power to seat two up to cars of 40 and 50 horse-power to carry forty passengers.

Their business in Canada is being handled by Messrs. Peacock Brothers of 68 Beaver Hall Hill, Montreal, and No. 406 Dominion Trust Building, Vancouver, who will be pleased to give anyone interested further particulars.

HOOPS FOR WATER TANKS.

Round iron hoops for wooden water tanks are advocated as preferable to flat hoops, in the report of a committee of the American Railway Bridge and Building Association. Wrought iron is considered as the best material for this purpose, and is more easily obtained in this form than in flats. One argument in favor of the round hoop is that fully 90 per cent. of its surface is exposed to view, hence deterioration is more easily discovered and painting is more effective. Objections to the use of the round hoop are raised on account of its small bearing surface against the staves and the ledge offered by the upper surface for the accumulation of dirt and moisture. The report states that experience has shown that if properly placed the small bearing surface does not induce crushing of the fibre, and suggests the caulking of the round hoops with oakum and filling the top space with roof cement to obviate the second objection.