

The Canadian Engineer

An Engineering Weekly

RAILLESS TROLLEY CARS.

The railless trolley system which of late has undergone severe development, forms a link in modes of transportation between the automobile and the familiar central power driven street car, in use throughout many cities and districts on the North American continent.

The railless system of street transportation has many advantages over the pre-existing type, among which might be mentioned the disposal of track expenses and the diminished possibility of a block on the right of way.

The many municipalities throughout Great Britain have probably done more to encourage the development of this system of transportation than any foreign communities. In fact, the municipalities of Leeds and Bradford lay claim to being the possessors of the first commercial railless lines in the United Kingdom. A description of these lines has been given by the "Tramway and Railway World," and with their permission we publish the photographs accompanying this article.

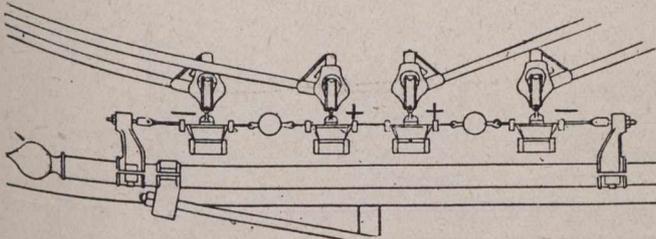


Fig. 1.—Bracket Supports for Overhead Wires.

The corporation of Leeds a few years ago gave serious attention to this system of transportation, owing to a district situate to the southwest of the municipality which was in need of transportation facilities, but too sparsely populated to make a regular tramway system remunerative. A thorough investigation of railless trolleys was made by the Tramways Committee and a report was made. The investigation included a visit to Austria, Northern Italy and Germany.

Shortly after the issuing of the report the corporation applied for powers in the session of 1909-10 to equip the route for railless traction.

A consideration of this system will show that the main points of departure from the ordinary tramway system are the tires, the methods of trolley contact, and the method of trolley wire support.

The poles of the Leeds Tramways are 8 in. diameter at the base, with a top diameter of 6 inches, and 7 inches at base, with a top diameter of 5 inches; the weight of these are 1,213 pounds and 890 pounds each.

The overhead wires (+ and -) are of 0000 S.W.G. grooved, hard drawn, copper. Fig. 1 shows the method of wire support from the bracket; the two outer ones being negative and the central ones positive.

The bracket arm supporting these extends 18 feet from the pole. This method of construction gives double insulation between the two positives and treble insulation between the bracket arm and the negative.

This system is arranged in such a manner as will allow the extension of the existing track tramway system, should pecuniary circumstances call for such; the current is supplied to the feeders from the pre-existing power station, the pressure being 525 volts, direct current.

Section boxes and section insulators divide the positive wires into half-mile sections as in standard tramway practice, but the negative wires are continuous from end to end of

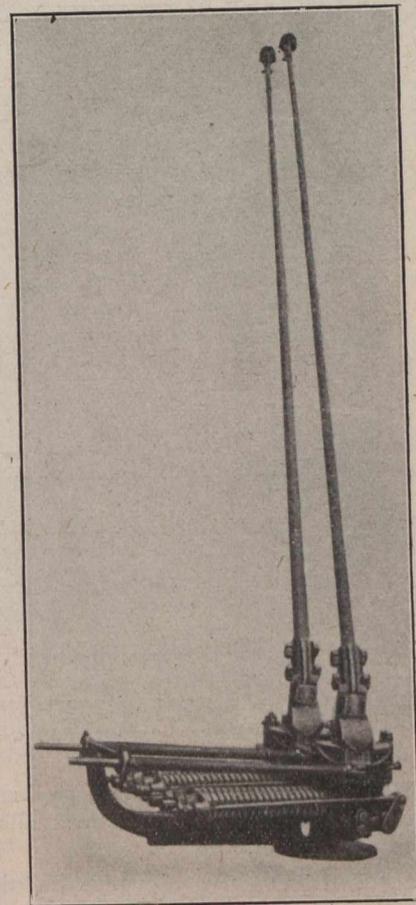


Fig. 2.—Railless Trolley.

the route, and cross connected at intervals of half a mile to minimize losses, and for the same reason the negative wires are bonded to the existing tramway rails near the terminus.

The method of completing the circuit between the trolley and motors is illustrated in Fig. 2. This, of course, is the critical feature of the system.

The trolley is of the under-running type, capable of allowing the vehicle to run at a distance of 15 ft. from the centre of the wires, measuring from the centre of the vehicle. It is so arranged that the negative trolley may be put out of action, and thus allow the vehicle to run with the positive trolley only on the line.