

must have a quick and reliable rapid transit system to its suburbs. This object is attained by electricity, and it has opened up and enhanced in value a vast section of suburban property, which cannot fail to be immediately beneficial in its effect, as is shown by its ready sale for homes.

The overhead wire system in use here is the best known to electrical science at the present day, the various storage battery and conduit systems having not yet reached a point where they are reliable and economical. Should the time come when they are, Portland will keep up to the times and adopt them, as it will be a simple matter to tear down the poles, and wires, as the motors used on the cars at present can be utilized as they are.

Electric roads have come to stay and have been universally adopted throughout the East, as they have solved the rapid transit problem, leaving little more to be desired.

Overhead wires and poles are considered unsightly by many, but they are far more pleasing to the eye than a tired and jaded horse toiling up hill.

The electric cars climb a 10 per cent. grade with perfect ease, and herein is one secret of their great success, while on a level road they can run any speed up to twenty-five miles an hour, the speed varying with the gearing.

With the cars in use here twelve turns of the motor shaft, or armature, causes the car wheel to turn once.

Portland has reason to congratulate itself in the rapid adoption of this most improved method of street car propulsion, and also on the bright outlook for still further improvements in the next six months.

Another reason of its success is the fact that it can be used on street railroads without tearing up and relaying the track. The rails are simply connected with copper wires and are used for the "return circuit," the closed circuit being made through the motors on the cars and the trolley pole, on top the cars, to the overhead wire suspended about twenty feet over the track. It will thus be seen that it is impossible to get a shock without getting contact with both ground and overhead wire simultaneously, to complete the circuit, and with the present conditions it is extremely improbable.

Watches are not affected in the least by the motors and there is perfect security from receiving any shock while riding in the car, as all parts are thoroughly and effectively insulated.

## Electric Street Railways 2

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