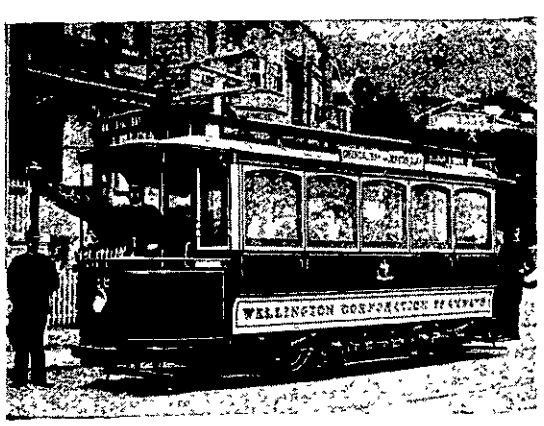
tools, including a heavy turning lathe, wheel lathe, and press. At the entrance to the car shed there has lately been erected a spacious brick car-building shop, for which the wood-working machinery is en route.

South of the sheds is a neat brick building affording accommodation for the traffic staff and employees, but the engineer-in-chief, accountant and clerical staff have their offices in the Town Hall.

Since the completion of the city tracks a year ago, considerable progress has been made in extending the lines to Greater Wellington. The Island Bay section is now open right down to the water; Kilbirnie tunnel (¼ mile long) is in the hands of the contractor, and is steadily moving on to completion; while the grading of the road to Brooklyn is nearly finished. The latter work has entailed heavy cutting and embankments, and even then a grade of 1–12½ has had to be used. Sleeper construction is being adopted for the extensions.

The volume of traffic on this system is daily increasing. The biggest total reached for any one day in 1905 was 54,000 passengers, representing £311 revenue. An estimate of the number of passengers to be carried during 1906 is set down at 15,000,000, which is 100% greater than a similar sized town in the Old Country would attain. The car mileage for a year is now about 1,200,000 miles. A feature which the Wellington public ought to more fully appreciate is the cheapness of fares; the average distance for a penny ride being greater than that obtaining in any of the other three centres—this in spite of the fact that employees wages are higher and that the system is to prove a necessarily expensive one to run if anything like a fast and efficient service is to be maintained. The permanent way and overhead construction were carried out by Messrs. MacArtney, McElroy & Co., of London, whilst the plant was installed by the Electric Construction Company of Wolverhampton, England; and there can be no doubt that the contractors have given the city a highly efficient installation capable of carrying on an increasingly heavy traffic to the full satisfaction of those directly concerned in it. We desire to thank the engineer-in-chief for these particulars, and for the various illustrations which have so considerably enhanced the value of this article.



SINGLE-TRUCK BOX CAR. [*Sarony, Photo.*

Sawing Stone by Wire.

Stone sawing by wire is done successfully in France, according to a paper by Mr. E. Bourdon in the *Bulletin* of the Society for the Encouragement of National Industry. A complete plant comprises an endless wire passing round a series of pulleys, one of which is a driving-pulley. The necessary tension is obtained by a straining trolley working on an inclined plane, and between the driving shaft and this trolley is situated the saw frame, which carries the guide pulleys for the wire saw. This wire, which is driven at a given speed, is caused to press lightly on the stone, and the cutting is done by sand mixed with water, which is conveyed into the saw-cut as the work proceeds. Though the mode of operation appears simple, it entails various difficulties in practical application. Three twisted steel wires are used, each wire having a diameter of 0.098 in. The strands must be twisted fairly tight and should make one turn in 1.18 in. The wire may be driven in the workshop at a speed of 23 ft. per second, but in quarries or adits the speed should not exceed 13 ft. per second. The force exerted by the wire to produce the cut must be uniform and must be capable of being readily varied; moreover, it must be proportionate to the length of the cut.

A Remarkable Voting Machine.

An automatic voting-machine, invented by Mr. Horace Harding, of Grafton, New South Wales, has lately been exhibited to the Parliament of New South Wales, and has attracted much interest. It is one of the most complete machines of the kind ever devised, and can be produced, it is said, at a cost of about £10 The inventor is a New Zealander, born and educated in Wanganui. The machine being of the "sectional" type is capable of being extended as required to suit any number of candidates, and where there are only two or three, the unnecessary sections are detached. It exhibits to each voter a figure indicating the total number of votes he is permitted to cast; automatically rings a bell as soon as the voter has recorded his full number of votes; automatically rejects all informal votes; records and adds all legal votes, totals being revealed immediately after the election closes; can automatically limit the number of votes any voter can cast, or can be quickly and simply adjusted.

INSPECTORS, MOTORMEN, AND CONDUCTORS. [*Sarony, Photo.*

SINGLE-TRUCK DOUBLE-DECK CAR. [*Sarony, Photo.*

Small Screws.

THE smallest screws in the world are made in a watch factory. They are cut from steel wire by a machine, but, as the chips fall from the knife, it looks as if the wire was being cut up for fun, for no screw can be seen, though one is made every third operation.

The fourth jewel wheel is the next thing to being invisible, and to the naked eye it looks like dust. With a glass, however, it is seen to be a small screw, with 260 threads to an inch, and with a very fine glass the threads may be seen very clearly.

These little screws are four one-thousandths of an inch in diameter, and the heads are double in size. It is estimated that an ordinary liqueur glass would hold 100,000 of these tiny little screws.

About 1,000,000 are made every month; but no attempt is ever made to count them.

In determining the number, 100 of them are placed on a very delicate balance, and the number of the whole amount is determined by the weight of this. All of the small parts of the watch are counted in this way, probably 50 out of the 120.

After being cut, the screws are hardened and put in frames, about 100 to the frame, heads up. This is done very rapidly, but entirely by sense of touch instead of sight, so that a blind man could do it just as well as the owner of the sharpest eyes.

The heads are then polished in an automatic machine, 10,000 at a time.

The plate on which they are polished is covered with oil and a grinding compound, and on this the machine moves them very rapidly by a reversing motion, until they are fully and perfectly polished.