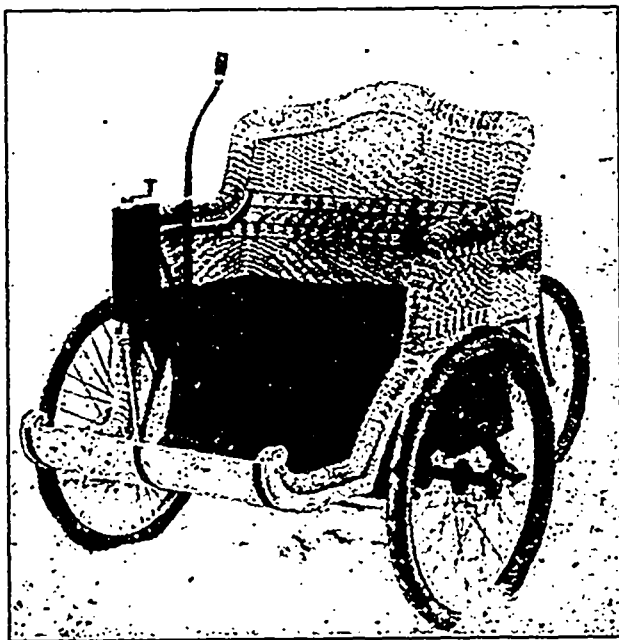


	Month of December.		Year.	
	1897	1898.	1897.	1898.
Hardware	£4,327	£1,549	£68,172	£25,717
Cutlery	9,677	..	116,850
Pig iron	225	42	9,447	11,322
Bar, etc	263	1,653	8,892	13,315
Railroad	3,518	45,796	28,766
Hoops, sheets, etc.	112	1,664	77,954	64,893
Galvanized sheets	5,185	761	57,573	65,968
Tin plates	7,149	13,386	224,570	172,362
Cast, wrought, etc., iron	4,625	2,802	34,066	34,696
Old (for re-manufacture)	170	..	7,524	3,574
Steel	3,946	2,372	55,704	49,483
Lead	978	1,067	28,379	36,943
Tin, unwrought	3,356	1,003	21,021	18,272
Alkali	1,361	1,736	44,550	50,608
Cement	2,701	636	22,536	26,018

THE AUTOCAR INDUSTRY.

The chief feature of progress during the past month has been a Canadian production of novel construction and appearance which is illustrated on this page. A representative of THE CANADIAN ENGINEER has had the pleasure of riding in this electric motet with the inventor of the battery and motet, W. J. Still, mechanical engineer of the Canadian Motor Syndicate, on whose design the carriage was constructed. The motor is slung over the front axle, and the two front wheels drive, while the hind wheel steers by means of the handle held in the left hand of the driver. In going over rough block pavements the effect of having the single wheel drawn over the roads from behind instead of pushed in front is very noticeable. In the ordinary tricycle construction, where the single wheel precedes, every depression and obstruction in the road produces a shock which is immediately felt, to the great discomfort of the occupant. In this electric motet it was noticeable that the block pavements, which on some of the streets traversed were very rough and full of deep ruts, did not materially affect the comfort of riding, the shock of contact being minimized by the two front wheels, and the dropping of the hind wheel into the depressions having no perceptible effect on the occupants. It starts



CANADIAN ELECTRIC MOTET.

Total weight, 400 lbs.; battery weight, 180 lbs. (Still Patent Battery); capacity, 2 persons and 50 lbs. of baggage, or, fitted for light delivery, 250 lbs. and driver; speed, 12 to 15 miles per hour; range (without recharging) 30 miles; steers by hind wheel, guided by left hand; steering handle lifted, as shown in photo, when occupant leaves seat; controller (in right hand) has four positions, reverse and brake; current used, 15 amperes on ordinary roads; power from special motor, designed by W. J. Still, giving 34 h.p. for 70 lbs. weight; extreme length of wheel base, 4 feet; extreme width of wheel base, 4 feet; cost of running, 3c. per mile; turns in smaller space than a bicycle; price, f.o.b. Toronto, \$400.

and stops without any of the jerking which we have noticed in other autocars we have examined. The motet presents an unusual appearance which is pleasing to the eye, while the rattan body mounted on spiral springs, adds elegance as well as comfort to the vehicle. The absence of the conventional dashboard gives the rider a peculiar sensation at first, but as he is prepared for novelty this feature becomes only one of many contributing to the pleasurable sensation of a rapid run. The facility of movement is one of the strong features of this little vehicle, which turns in less space than a bicycle requires. It is

equipped with the Still patent storage battery weighing 180 lbs., and has a range of 30 miles. By increasing this weight to 300 lbs. the range could be increased to 40 miles without recharging—a greater range than has yet been obtained by any electric carriage. It may be added that the cells with which this motet was equipped at the time of our ride were the old ones that had been used in the electric victoria formerly described in these columns, and which on account of an accident to that carriage had been idle for about eight weeks. Mr. Still stated that with an equipment of new cells made upon his latest type of construction he could secure a range of 40 miles with a battery weight of about 200 lbs. The cells can be charged from any circuit. The motor, also invented by Mr. Still, is of special design, giving great power, but details were not available for publication at this stage. At the reasonable price asked for the motet there should be a large and immediate sale for them. The construction of this beautiful and serviceable carriage opens a large field for various types of bodies, ranging from a light delivery vehicle consisting of a simple box with seat in front, to a miniature hansom with the driver seated in the rear of the box, the front being enclosed in glass, so that the view of the occupants would be entirely unobstructed. Such a carriage would be able to accomplish all that is now obtained by the large and cumbersome hansom cabs in London and New York, the total weight of which is 3,200 lbs.—eight times that of the Canadian electric motet. In spite of the smallness of this vehicle—or perhaps because of it—the motet carried Mr. Still and a passenger weighing 240 lbs.—a total load of nearly 500 lbs.—up hill on Avenue road, Toronto, a grade of 10 per cent. Two motor carriages of other makers—one electric and one gasoline—failed to accomplish this feat. For city use, and even for professional men who have country practice, electric carriages are found to fully answer all demands, the investigations made by Col. Pope—who placed cyclometers on ordinary run-about conveyances of a number of private citizens, surgeons, expressmen, etc.—having shown an average mileage of 18 miles per day, and with one exception a maximum mileage not exceeding 25. Of course with a duplicate battery 100 miles per day could be made.

Since our last issue further details are to hand in reference to the exploitation of compressed air in New York, to which we referred in last issue. The following are the names of the companies already organized: American Air Power Company, capital \$7,000,000, controlling works in New York city and compressed air street cars for United States; International Air Power Company, capital \$7,000,000, with works at Worcester, Mass., and Providence, R.I., to sell compressed air auto-trucks, engines, locomotives and automobiles; New York Auto-Truck Company, capital \$1,000,000, general truckmen, using International Air Power trucks, and owning charging stations throughout New York; Chicago Auto-Truck Company, capital \$10,000,000, controlled by the Leiter-Hoadley Syndicate, the same business as New York Auto-Truck Company; Philadelphia Motor Wagon Co., capital \$1,500,000, for manufacture of self propelled wagons and for vehicles, supposed to be connected with the Cramp-Hoadley Syndicate of New York; Philadelphia Auto-Truck Company, reported capital, \$10,000,000. A certain air of mystery surrounds these companies, and although the newspapers are careful to state that "no stock is for sale," we predict that when the promoters think the time is ripe the stock will be put upon the market at a big premium. As proof of this we point to the fact that the stock of the New York Auto-Truck Company, which was listed at 9 in September, 1898, was sold at 48½ on January 14th, 1899, the day on which the present organization was completed; jumped to 62 on January 16th, to 68 on January 17th and on January 18th was quoted at 71. Mr. Knight, one of the inventors, in an interview stated that owing to pressure from large financial men he had been induced to increase the capital stock of the International Air Power Co. from \$1,000,000 to \$7,000,000. This explains why the stock jumped. Of the \$7,000,000 capital above referred to, \$6,400,000 represents property and \$600,000 is to be put on the market as preferential stock with 3 per cent. cumulative dividend. The surplus over this \$600,000 will represent profits made by the promoters.

With regard to compressed air vehicles, there is one point of considerable interest to all engineers who are watching this problem. We observe the power is stored in steel bottles charged with 4,000 lbs. to the square inch. This is considerably more than has ever been attempted before, and we notice that the tubes are only 5-16 inches thick. Of course there is no doubt that nickel-steel has a very high tensile strain, and it is just possible the bottles made of this substance may stand the test, as stated in the reports, of 1,800 lbs. to the square inch, but there is a point worthy of very careful consideration as to whether these bottles will withstand the constant vibration they will experience on the road without very rapid crystallization of the steel. This would be especially likely to take place, suspended as these are, upon the reach of the vehicle. This we think should be thoroughly tested before any such vehicles are put on our public streets, as the danger of