

raced with freight trains that were running at full speed, and beat them. The greatest burst of speed was just west of Albany, where on a fine stretch of road they made 38 miles an hour.

The economy of fuel was one of the remarkable features of the trip. The first day's run of 218 miles was made with less than 30 cents' worth of gasoline. It would not have cost \$1 for the entire 707.4 miles if the gasoline along the route had been sold at market prices. The trip was an immense success, the carriage being said to be in as good condition at the end of the trip as at the start. The Winton carriage is not unknown in Canada, Messrs. Moodie, of the Eagle Knitting Co., Hamilton, being possessors of two, and J. Eaton and E. J. Philips of Toronto, having two. The Winton Company of Cleveland has sold about fifty carriages. Mr. Winton is a young Scotchman, a bicycle maker, who for five years and more has been hard at work on his carriage, putting all his bicycle earnings into his invention. He has the satisfaction of knowing that he has now an unlimited market for his product. The fuel consumption regulation, which is under the control of a governor operated by the driver's foot, is one of the novel features of the Winton mechanism. This governor increases or diminishes the volume of explosive compound furnished to the cylinder for a working stroke, the composition of the mixture remaining always the same. Thus a slow or high speed may be obtained at will, by reducing or increasing the power of the engines. There are also mechanical speed-changers, two forward and one backward, the governor being used to vary these gear speeds. The Winton motor has a single cylinder, and carries a heavy fly-wheel. The exhaust is at the rear, and is muffled. The engine can make about 18 miles per hour, with about a gallon of gasoline, costing 10 cents in the United States and 18 cents in Canada.

This long and speedy trip of the Winton carriage will not only bring increased business to the Winton Company, but will give an immense impetus to the whole automobile industry, which is bound to develop very rapidly within the next year or two. As *The Cycle Age* says "When speed contests and long road contests shall have followed close upon one another for a half year, and the results shall have been carefully noted in the press of the whole country, capitalists will fall over each other for a chance to enlarge the manufacture of any vehicle which has acquitted itself creditably. It will be apparent to them then, that the demand will be sufficiently active to pay high interest on their money until the time may come when competition between the various makers shall really begin to be felt as a check and a warning. And they will understand that when that time shall come the general demand for motor vehicles will have grown so large that the particular establishment in which they may have invested their money will have lost none of its value, even if its products shall then have ceased to rank among the best. Any plant equipped to produce gasoline or steam vehicles will increase in value year after year for at least twenty years to come for the simple reason that it may at any time be made available, with very few changes, for the production of that type of vehicle which at any given time is recognized as the best. In other words, it may at almost any time be sold to a more successful competitor that requires increased capacity."

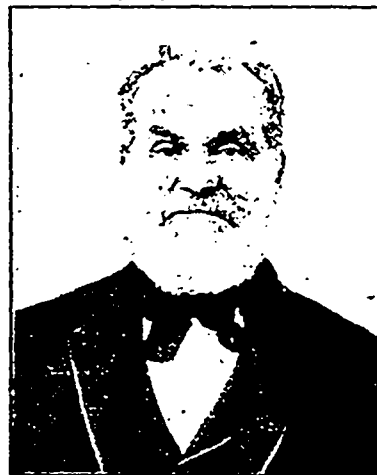
THE ADVANCE IN ALUMINUM.

With copper worth 19 cents per pound, it is found that aluminum at 31 cents is considerably the cheaper for the transmission of electricity. Weight for weight, aluminum furnishes three or more times as much material as copper, while its conductivity is greater than that of copper. It is estimated that one pound of aluminum at 31 cents is as effective as a conductor as an amount of copper costing 65 cents. The result is that a great stimulus has been given to the production of aluminum. The Railway and Engineering Review says that the Northwestern Elevated Railway of Chicago has entered into a contract for 150,000 pounds of aluminum feeders. The great factor in the economical production of this metal is electricity. The cheapness of electric power at Niagara Falls is the reason why the Pittsburgh Reduction Company, the largest producer of aluminum in America, located there. It is the intention of

this company to greatly enlarge its plant and to double its output of aluminum. If the Ontario Government had dealt with the Niagara Falls power question in a businesslike way, says *The Toronto World* in a recent issue, we would have been able to-day to take advantage of the present opportunity for producing aluminum. This metal can be produced just as economically in Ontario as in New York—perhaps more so. But there is no power available on this side of the river, so that no one can go into the business. And what is still more disappointing is the fact that there is no evidence that the development of power is to be undertaken in the near future. From all appearances, it looks as if the new deal with the Canadian Niagara Power Company (the American concern) gives that company, as *The Niagara Falls Review* says, "a surer and cheaper monopoly than they had before."

P. TROWERN, ENGINEER, TORONTO ASYLUM.

The subject of this sketch has supplied us with these interesting biographical details: I was born in Devonport, England, in 1822. My father was engaged in the dock-yard for thirty years, his father was a Huguenot from Brittany, France. My mother was the daughter of Peter Thomas, a miller in St. Ives, Cornwall. When I left the private school I was sent to Cornwall to my uncle to be put in one of the large foundries. The first year I served in the boiler shop, the next in the erecting shop, and was out putting up new engines and repairing old ones in the mines. The following five years I served in the fitting and pattern shops, and drawing office; about the year 1848 I went to the Doulls Iron Works to my uncle, John Trowern, then manager of the works, and from there to London and Plymouth. In the spring of 1852 I moved to Montreal and



P. TROWERN.

worked for Gilbert & Bartlett at repairing river and lake boats, also with Risley & Contaugh's shipyard and machine shop. In 1854 I made the first sewing machine in Canada, Singer's pattern, and sent it to the French Exposition and received the prize; no patent had been taken out for Canada, the place being too small to think of it. I then fitted a brass engine and sent it to Chicago to grind coffee in a grocery store. In the fall of 1854 I moved to Melrose, Sarnia Road, and made three sawmills and grinding engines, the first put to work on the road. I could tell a long story about planting engines in the bush, and sawing the lumber to cover them.

In the spring of 1856 Mr. Trowern came to Toronto and worked for Cook & Blakey, on Adelaide street, and in July he was appointed engineer of the Asylum for the Insane, and he has kept the position ever since, and by temperate habits is enjoying good health.

THE CANADIAN SOCIETY OF CIVIL ENGINEERS.

The Canadian Society of Civil Engineers has bought the property, No. 877 Dorchester street, Montreal, a few doors east of Mansfield street, where the present quarters of the society are located, and there the society will have its permanent home. The lot has a frontage of 27 feet and a depth of 100 feet. The house upon it, which abuts upon the street line, has a cut stone front and is three stories in height above the basement. It is intended to alter the whole interior of the house so as to make