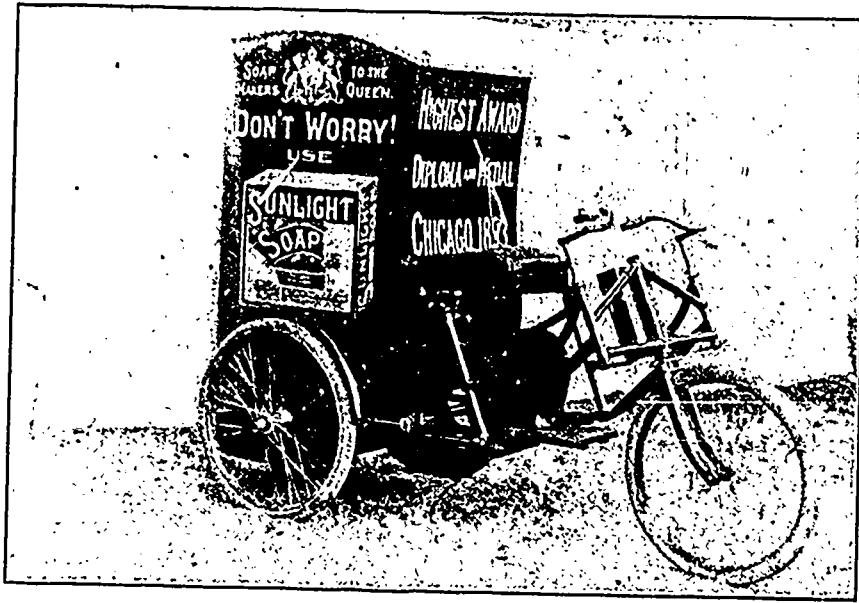


The Winton gasoline carriage of Cleveland is now taking the lead, yet only fifteen of these have been sold to date. Mr. Winton, who is a bicycle manufacturer, has been working for about five years on his gasoline engine, and has produced a creditable carriage, two of which have

rapidly, and steam could be raised to 100 pounds pressure in 1½ minutes from cold water. The engines consisted of a pair of long-stroke engines, with cylinders having a diameter of three inches and a stroke of 12 inches. These drove an intermediate shaft which had a clutch arrange-



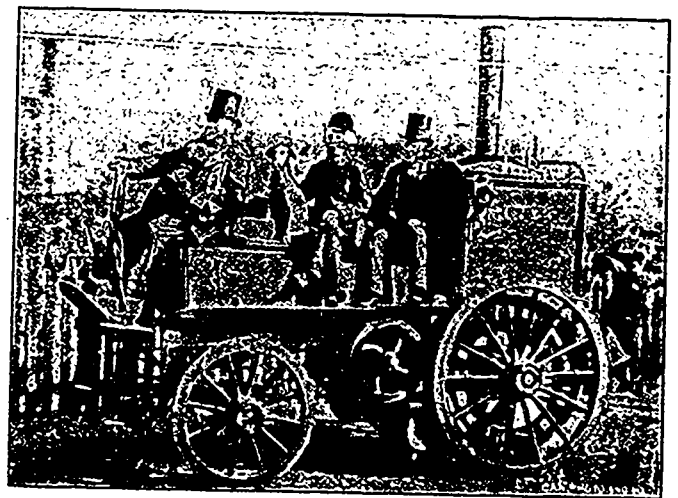
found purchasers in Canada in the Messrs. Moody, of Hamilton. The carriages sell at \$1,000, carry two persons, weigh about 2,300 lbs., and show good speed and efficiency; but there is nothing radical in the construction of the engine.

The Electric Vehicle Company of New York is pushing the introduction of electric cabs with great energy and spirit. An interesting illustrated description of their battery system was published in the September number of the American Electrician. They certainly deserve success, yet their cabs while carrying only two passengers in addition to the motorman, are so heavy that they represent over 1,000 lbs. per passenger, and this enormous dead weight requires the construction of special wheels made of cast-iron mounted upon pneumatic tires. The cabs, however, are popular, and if once brought down to a commercial basis could be made a highly profitable business. A correspondent recently drew attention to the enormous field for motor carriages in California, where alfalfa hay is dear, and yet has to be transported with the caravans in order to feed the immense number of horses needed. It is usual to hitch up twelve horses to a single wagon, and yet with this enormous hauling power only twenty or thirty miles per day can be made. So far there has been no attempt made in the United States to develop the haulage of heavy traffic by autocars. There is to be an exhibition of motor carriages in Boston this month and next in connection with the 20th Triennial Exposition of the Mechanic Association, and prizes are to be offered in connection with motor carriage races, but nothing definite has yet been announced.

The steam carriage shown in the accompanying illustration was built in Birmingham, England, in 1870, by J. & W. R. Inshaw, now of New Bedford, Mass. The brothers were then in partnership with their father in the engineering trade. This carriage held ten passengers, not including the steersman and the boy who acted as stoker. The gross weight when loaded with water and coke was 3,000 pounds. There were two tanks for carrying water, which was introduced into the boiler with a force pump and injector; the tanks held sufficient for a two hours' run. The boiler, which was of the watertube type, steamed very

ment, and the power was carried by means of a chain. From Coventry to Birmingham (eighteen miles) in one hour is the best work this carriage has done when carrying its full complement of passengers.

We speak of Canada last. The Canadian Motor Syndicate has recently begun the manufacture of storage batteries on the Still Battery System, and have already equipped two types of vehicles (shown in the illustrations), one an advertising tricycle having a speed of ten miles per hour and a capacity of twenty miles without recharging, the battery weighing 150 lbs., and carrying in addition to the driver a load of 250 lbs.; and a Victoria seating four persons, having a speed of fourteen miles per hour, a capacity of thirty to thirty-five miles without recharging



and a battery weight of 350 lbs., the total weight of carriage being 800 lbs. As compared with the American and English, these Canadian electric carriages and their batteries weigh only about one-fourth, and yet are claimed to possess equal if not greater efficiency. The finishing touches are being put upon a new gasoline engine of Mr. Still's invention, to which reference was made in the illustrated article in THE CANADIAN ENGINEER of April last.