

THE NEW COLUMBIA TOURING CAR.

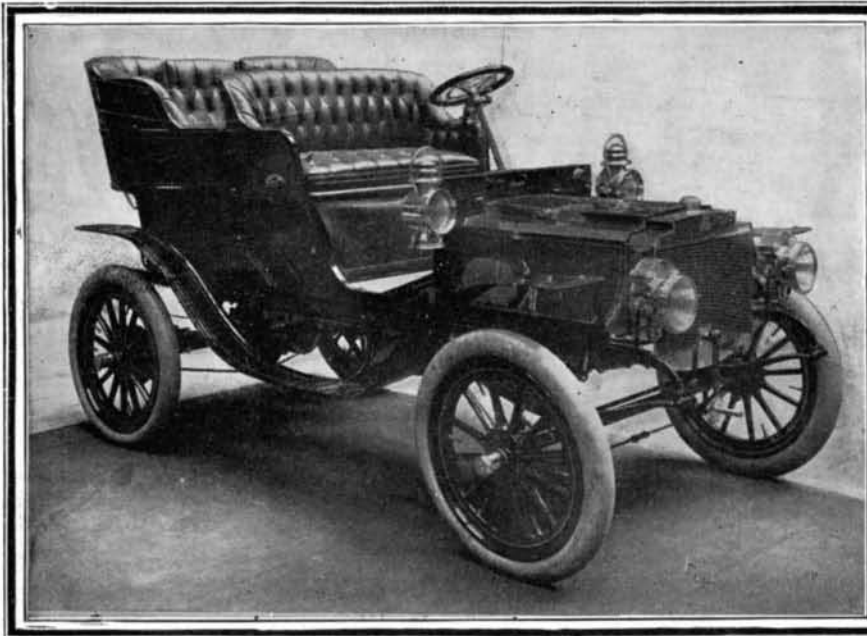
Our illustrations show the general appearance and part of the chassis of the new Columbia double opposed-cylinder touring car, which was designed by Mr. H. P. Maxim, and the first model of which was on exhibition

opening seen beside the front seat. By opening a door in the side of the carriage, the driver can determine the level of gasoline in the tank by means of three pet cocks arranged at different heights in its end. Below the tank there is a tool drawer, which

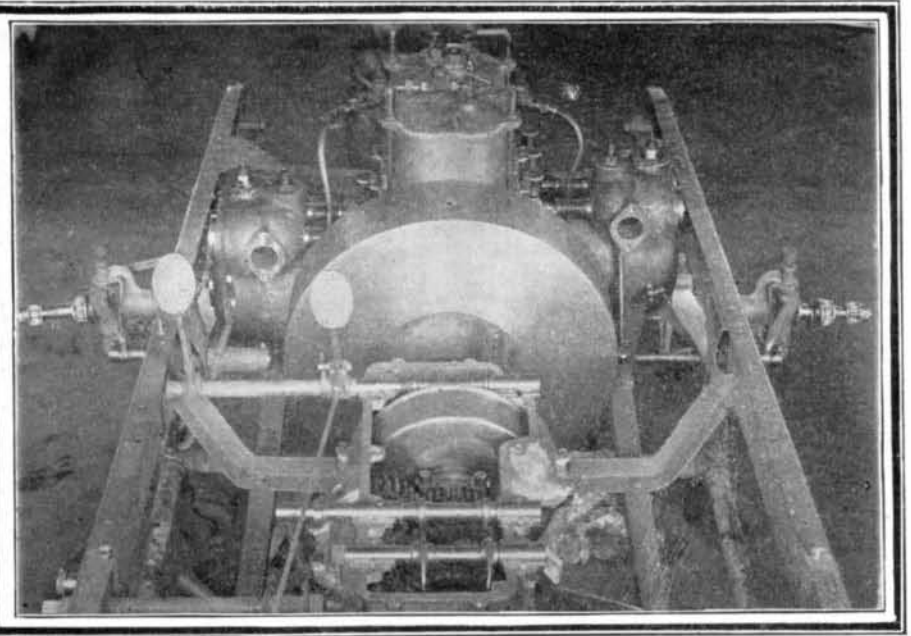
attention these cells require is the addition of pure water about once a week.

A GASOLINE HANSOM CAB.

The hansom cab shown in our illustration is on dis-



THE COLUMBIA 12-HORSEPOWER TOURING CAR.



FRONT END OF CHASSIS OF COLUMBIA CAR.

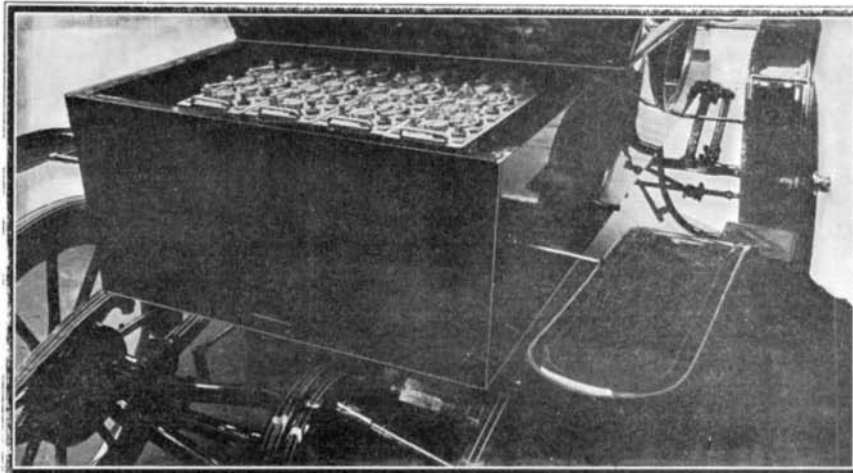
at the Automobile Show. The $4\frac{1}{4} \times 5$, double, opposed-cylinder motor is placed crosswise of the frame, under the bonnet. This motor runs at 1,000 revolutions per minute at a speed of 25 miles an hour of the car, and is said to develop from 12 to 14 horse power. The oil tank on top of the crank case contains two sight-feed chambers, through which there is a pressure feed to each cylinder, the pressure of the compression in the case being used to feed the oil. The carbureter is of special design, the auxiliary air passage being located beside the main air passage containing the spraying nozzle. The former has a throttle located near its outer end, while the main throttle is in the pipe to which both of these passages are connected. The motor is provided with a ball governor, which operates on the throttle, and the auxiliary air throttle is suitably connected with the main throttle, so that a perfect mixture is maintained at all speeds. The transmission gear is of the sliding type, and contains two sliding sets of gears, which are operated by two separate levers. An expanding ring clutch in the forward end of the transmission gear case, which can be readily seen in the photograph, differentiates this machine from most others of the type. This clutch is released by a pedal, and is also automatically released before the brake can be applied. The regular service brake is of the expanding ring type, on a bevel gear stub shaft next to the differential casing. The emergency brakes are on the rear wheels, and are operated by a lever. A wheel steering device with a rack and pinion is employed, and the wheel can be turned without moving the sectors on which are contained the sparking and throttle levers. A live rear axle with bevel gear drive is employed, and runs on roller bearings. The gasoline tank is filled from the outside of the carriage through a funnel-shaped

can be readily pulled out and used whenever desired.

THE WAVERLEY ELECTRIC RUNABOUT WITH EDISON BATTERY.

The illustration shows the appearance of a set of thirty-two 160-ampere-hour cells of Edison battery in the specially-constructed battery box of a Waverley runabout. The cells are higher than the lead battery cells generally used, thus necessitating the use of an extra deep box. The steel jars are arranged eight in

tinently novel lines, and is patterned somewhat after a machine that was designed for use in London streets, but which, we understand, never materialized in very large numbers. This luxurious vehicle was built by the Peerless Motor Car Company, particularly for city use. It has a very long wheel base, and the cab is situated at the rear end of the chassis, which is hung on easy-riding springs. The cab is luxuriously upholstered, fitted with curved sliding doors, and has a small electric light in the ceiling. The driver's seat is in front, and is sufficiently wide to accommodate one or two extra people. The machine is fitted with a Peerless 24-horsepower motor, shown on page 78. It has a standard Peerless equipment, similar to the touring car already described.

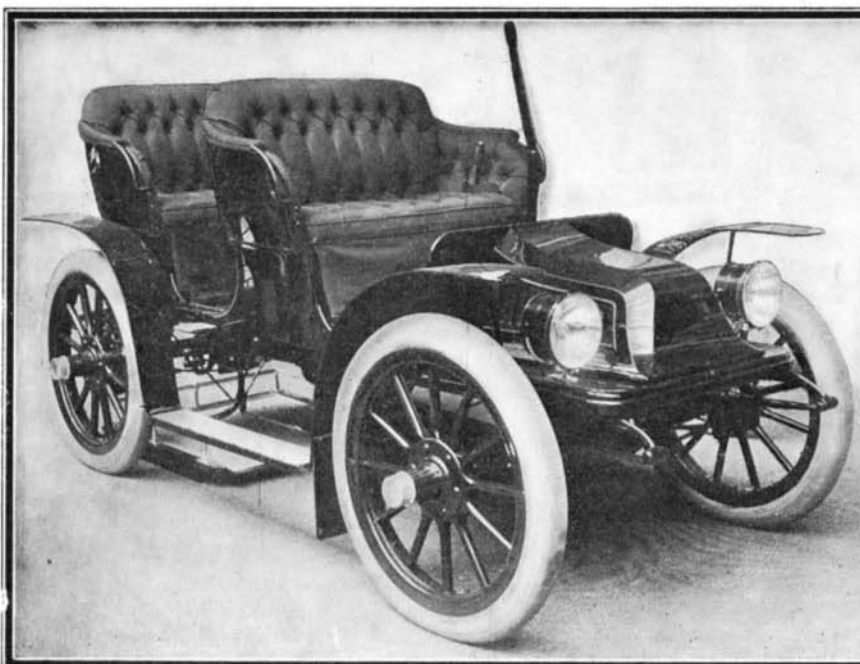


AN EDISON BATTERY IN A WAVERLEY RUNABOUT.

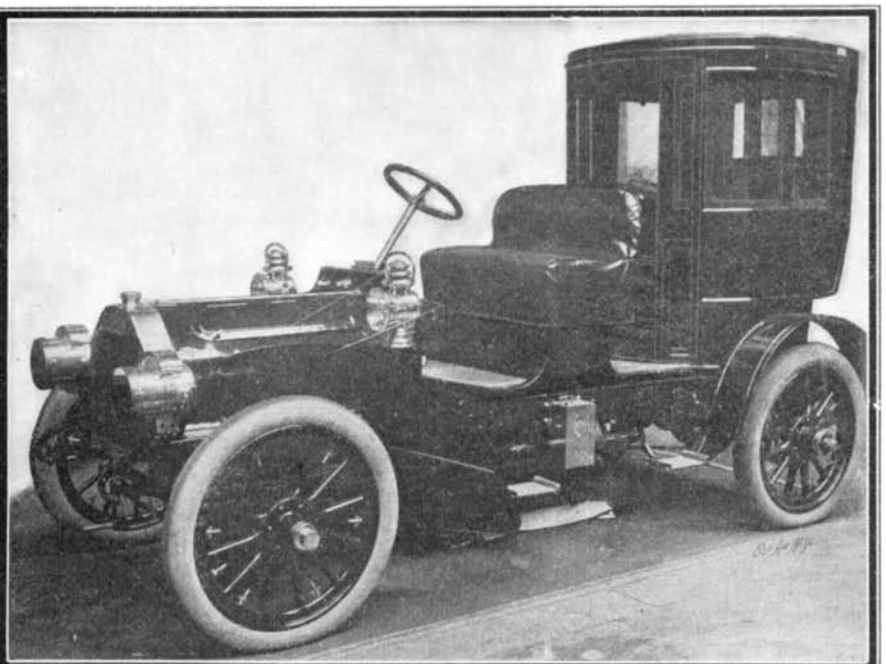
a crate. They furnish an average electromotive force of 1.25 volts at a 30-ampere discharge rate, which is that required to run the machine at 15 miles an hour. The runabout is fitted with three speeds ahead and two reverse. It has a radius on one charge of 40 miles, the main feature emphasized being the durability of the battery and not its high capacity. Each hermetically-sealed cell is fitted with a hinged cap which springs open when the catch is released. The only

A NEW LIGHT-WEIGHT ELECTRIC SURREY.

The Baker electric surrey depicted below is of distinctly novel construction, in that the electric motor is placed forward under the bonnet, the same as on any ordinary gasoline touring car. The shaft of the motor runs longitudinally of the carriage, and a pinion on its rear end drives a large gear on the forward end of the main driving shaft, which extends to the rear axle and drives it by bevel gears. Ball bearings are used throughout the machine, which is of comparatively light weight—about 1,700 pounds. Twenty-four cells of lead storage battery furnish the current to drive the machine. The 48-volt motor is thoroughly protected from water and dust by means of a rubber apron beneath it. It has a total radius of 40 miles on a charge. This new arrangement of the motor on an electric vehicle, while perhaps not so efficient as the usual rear wheel drive, is certainly much more conducive to the long life of the motor, besides increasing the facility with which it may be inspected.



AN ELECTRIC SURREY WITH MOTOR UNDER FRONT BONNET.



A GASOLINE HANSOM CAB.