

the leather faced interior of drums on the rear wheels. This brake and the clutch are independent. The weight of the truck is about 1,900 pounds.

Toledo.

Lamson Brothers, a well known department store firm of Toledo, obtained the first motor delivery wagon ever used in that city on June 19, 1899. It was an electric wagon, weighing 3,300 pounds and with a load capacity limited to 700 to 800 pounds by the bulkiness of the firm's merchandise. This vehicle was traded for a new wagon of the same make in 1903. In the latter four batteries have been used up, and the firm is at present trying the Silvey storage battery from Dayton, Ohio. The life of

tained a driver from the manufacturers. The vehicle is in service about four hours per day, and in this time makes seven trips, as against two similar trips by horses. The main features in the construction of this vehicle are as follows: The motor consists of two opposed horizontal cylinders, $4\frac{3}{4} \times 4\frac{1}{2}$ inches, with 80 pounds compression cold. It is hung at the middle of the frame. The inlet valves are automatic. The exhaust valve rods are offset so as to be operated by one cam. The power is rated 14 to 16 horse power by electric test at 900 revolutions. The channeled drop forged connecting rods have babbitted journals 2 inches wide, the crank pin is of $1\frac{3}{4}$ inch diameter, and the crank shaft bearings are $3\frac{1}{2}$ inches wide. The transmission is of the



ELECTRIC AMBULANCE OF THE INDIANAPOLIS POLICE DEPARTMENT.

the tires has been found to be between seven and eight months. Those in use now are Diamond pneumatics, 32×4 inches. In 1902 Lamson Brothers bought also a gasoline delivery wagon. It gave less trouble than the electric vehicles, in so far as the driver soon became able to take care of it, says D. S. Hager, the firm's superintendent. On the whole, the cost of the motor delivery wagon service has been about twice as great as that of similar service by horses, but the comparison is difficult. The motor vehicles have some advantages aside from their advertising value, which in a town like Toledo is considerable, and the firm intends to continue using motor delivery vehicles of one type or another, or several types at the same time, being convinced that the service will become more economical with every passing year. In addition to the motor vehicles the firm employs now eleven horses and seven one horse delivery wagons.

The B. F. Wade Printing Company, who deal in stationery and office furniture, have used a delivery wagon built over a Yale runabout frame since May, 1905. They ob-

planetary type, operated by sliding cone and expansion clutch for the high speed. A sextuple compression oiler over the crank chamber furnishes automatic oil feed in proportion to the engine speed. The two forward gear speeds are operated by one lever, the reverse by pedal. The steering gear is of the irreversible worm gear type, operated by wood wheel with brass centre. The drive is by single chain to live tubular rear axle. American roller bearings are used for all four wheels. Two expansion brakes, operated by pedal, take effect in rear wheel drums. The muffler is provided with a cutout. The finned tube Briscoe radiator holds between 4 and 5 gallons and the gasoline tank holds 12 gallons. The frame is of channel iron reinforced with wood.

The manufacturing interests of Toledo, so far as commercial motor vehicles are concerned, are represented solely by the American Motor Truck Company, whose 30 horse power gasoline motor, friction drive truck was partially described in THE HORSELESS AGE of May 24, 1905. The weight of this truck is $3\frac{1}{2}$ tons, and it is rated as a

ers. 5 ton truck, but has hauled $6\frac{3}{4}$ tons of
ours lumber. At the time of this writing this
rips, truck was booked for test work in the serv-
The ice of the Paddock-Overmeyer Company,
s ve- wholesale grocers of Toledo.

ts of The Milburn Wagon Works, a concern
x4½ of the first rank in its line, has been con-
cold. templating the manufacture of electric
The wagons, especially trucks, but has not yet
haust reached any decision.
