THE FIRST AUTOMOBILE PATROL WAGON.

The town of Akron, Ohio, lays claim to the distinction of having constructed the first automobile patrol wagon ever used. The wagon in question was not made by a horseless carriage manufacturer, but was designed and built by a local mechanical engineer, Mr. Frank P. Loomis.

The vehicle is driven by two four-horse power electric motors, geared in the usual manner with the rear wheels. Current is supplied by an accumulator of 40 cells, stowed beneath the seats of the vehicle in four sets of ten cells each, and grouped as the driver may desire by means of a controller within reach of his left hand. A meter at his right hand indicates the amount of current at his disposal.

The steering mechanism consists of a hand-wheel, the vertical shaft of which is connected by a segmental gear with a fifth-wheel provided with roller bearings.

The braking devices comprise two sets of friction rollers forced into engagement with the tires of the rear wheels by means of a foot-lever, and a band-brake connected with the gearing of the rear wheels and controlled by a hand-lever beneath the steering-wheel in front of the driver.

The wagon body is 10 feet long, 4 feet 4 inches wide, and is supported on rubber-tired wooden wheels carried by roller-bearing axles. The vehicle has a maximum speed of twenty miles an hour, weighs 5,500 pounds, and cost the city of Akron about $3,000. For our descriptive matter and illustration we are indebted to Mr. E. J. Hoskin, of Akron, Ohio.

THE FIRST AUTOMOBILE PATROL WAGON.

A New Variable Star in Algol.

Another remarkable variable star of the Algol class has been discovered by Mme. Ceraski. From an examination of the Draper Memorial photographs of this star, it appears that while the star has its full brightness on 45 of them, on several of the early photographs it is so faint that they must have been taken when the star was near minimum. The Moscow photographs furnish the means of determining the periods from an interval of four years, the Harvard photographs increase this interval to nine years. Five stars of the Algol class, S Cancri, U Cephei, W Delphini, +45°3062, and the star referred to are specially interesting, says Prof. Edward C. Pickering, owing to the large variation in their light, which amounts to about two magnitudes in each case. It is remarkable that two of these were found by Mme. Ceraski, and one by her distinguished husband.

AN ELECTRIC AUTOMOBILE AMBULANCE.

The ambulance service in our American cities is the model one of the world, so that it is little wonder that we are to have what is probably the first electric ambulance, certainly the one we illustrate is the first ever built in the United States. There are many reasons why an automobile ambulance has marked advantages over the horse vehicles. It is capable of greater sustained speed, and when the destination is reached no care has to be paid to the steaming horse, and both surgeon and driver can devote their attention to the injured person. Accidents to ambulances are of frequent occurrence, owing to their speed and their right of way, but electric vehicles can be stopped in their length, Every second is of importance to an injured person, and speed and ease of riding will undoubtedly soon make them a great favorite among hospital authorities. Another feature of interest is the lower cost of maintenance. An ambulance is usually idle twenty or more hours out of the twenty-four, and this gives ample time for charging the batteries. There is no time lost in hitching up, and the stable may be in the hospital proper, without the dangers of stable odors.

The electric ambulance shown in our engraving was built by F. R. Wood & Son, of New York city, for St. Vincent's Hospital. It is handsome in appearance, being well finished. The openings are all inclosed with beveled plate glass windows which open or close with ease. The vehicle is steered from the front wheels and is propelled by two 2-horse power motors, which are suspended on the rear axle. The current for the motors is supplied by 44 cells of storage batteries and it is managed by a controller placed under the seat entirely out of view. This controller permits of three speeds ahead, 6, 9 and 13 miles per hour, and two speeds to the rear, 3 and 6 miles per hour. The radius of action of the ambulance is 25 to 30 miles.

The Wood pedestal gear is used, making it possible to have the body low, which is essential in an ambulance, and adds to its appearance. All the fore and aft bending strain on the springs is relieved by the pedestals sliding vertically up and down on the pedestal box. The driver is in immediate communication with the surgeon by the aid of a speaking-tube. The inside trimming is of leather, and the bed slides out, and being caught by irons, stands out parallel with the sidewalk, thus enabling a patient to be placed upon the bed without the necessity of being jolted, which is inseparable to the use of stationary beds. The inside and outside electric lights are of ten-candle power each. The mountings are all of brass.

NEW ELECTRIC AMBULANCE FOR ST. VINCENT'S HOSPITAL, N. Y. CITY.

Experiments With Decimal Instruments in the French Marine.

The experiments which were commenced last June on several vessels of the French navy at the Naval School at Brest, and in several hydrographic schools, for the purpose of studying the advantages of the employment in navigation of the decimal measures of angles, will, according to the original programme, close at the termination of February, 1900.

The correspondent of The Moniteur de la Bijouterie et de l'Horlogerie says:

We are happy to recall the fact that the instruments, maps, sextants, compass roses, decimal chronometers, etc., which are employed, appeared at the exposition of the apparatus for the measure of time and angles, graduated according to the decimal system.

This exposition was organized on the occasion of the congress of the scientific societies at Toulouse by the Geographical Society of this city, at the instance of M. De Rey-Pailhade, ex-president, and the promoter of this important reform, of which the success is now certain. The numerous instruments exhibited forcibly drew the attention of all interested, and particularly of General Sesmaisons, commander of the 17th Army Corps. The experiments are under the direction of Captain Guyon, a prominent member of the Bureau of Longitudes, who was appointed by the Ministerial Commission on Decimalization.

Each experimenter will present a detailed report to the Bureau of Longitudes on the employment of the new decimal units of angles. That learned body will publish a resumé of the experiments for submission to the decision of the International Congress, specially charged with the consideration of this subject.

The scientific societies of our city which, during the revolution, was one of the first to adopt the decimal division of time, will follow with interest the results of this truly scientific event, this effort for the extension of the work of the immortal creators of the decimal metric system.

The following incident shows the value that was attached to the decimal time:

Antoine Alric, a watchmaker of Toulouse, was arrested and imprisoned on December 7, 1793, for having "uttered his aristocratic opinions on all occasions." Alric had devoted time to the decimal hour, which had been encouraged by a decree of the National Convention on the 21st Pluviose of the year 2, establishing a public competition of decimal watches. The Toulouse Committee of Safety, of whom the watchmaker had demanded his liberty, reported to the national agent: "We do not think that Alric, watchmaker, deserves to be set free; but we will engage him to execute his plan as to the decimal watches." Alric was discharged on the 10th Fructidor, year 2, as more talkative than dangerous.

At the congress of the societies there was a beautiful clock, which, through the ingenuity of M. Raffy, presented simultaneously the ordinary hours and the decimal time by means of divisions and hands in two colors; every body understood the decimal time at the first view. This remarkable timepiece realized the wish expressed by the municipal authorities of Toulouse, at the sitting of the 15th Fructidor of the year 6, that, "The clock of the capitol should indicate both the decimal and the duodecimal hours, in order that the public should understand their relations to each other."

It is interesting to remember that the new experiments take place at exactly a century after the establishment of the metric system. It was on April 23, 1799, that the commission of the national convention, charged with the preparation of the meter, completed its work. On June 22, 1799, the meter and the kilogramme in platina were presented to the united legislative body. On December 10, 1799, the second law constituting the decimal metrical system was enacted, fixing definitely the values of the meter and the kilogramme.

Our Coal Production.

The fact that the United States has become the world's greatest producer of coal, and at a cost for production far below that of any other part of the world, is attracting great attention, especially from British producers and consumers of coal. The present output of the United States is larger than that of the United Kingdom, and coal can be bought in America at the pit mouth at $1.18 a ton as against $1.36 paid in Great Britain. The result is that people in Lancashire are talking about bringing coal from America to Lancashire. In 1870, the United States produced 86,806,560 short-tons, and in the same year the United Kingdom produced 123,682,935 short-tons. In 1880, our production of coal had risen to 71,481,569 short-tons, while that of the United Kingdom was 164,605,738 short-tons, and in 1899 the total amount of coal produced in the United States was 244,000,000 short-tons against 234,000,000 short-tons of the United Kingdom.

THE last remaining relic of the first railway in London has just disappeared. In 1801, an act was passed authorizing the construction of a railway from Wandsworth to Croydon, the sleepers being of stone and motor power was provided by horses. The scheme included a dock at Wandsworth and it is the ancient wooden crane connected therewith which has just fallen into the waters of the Wandle.