stage not far from perfection will have been reached. Meanwhile we can only keep apace with the time by studying this new device and watching its progress, which, if we do, we shall be astonished at the rapid strides being made in our midst by science in this its most attractive manifestation, appealing to the present age more from an eminently practical standpoint than from any other. A. HENRY.

Paris, France.

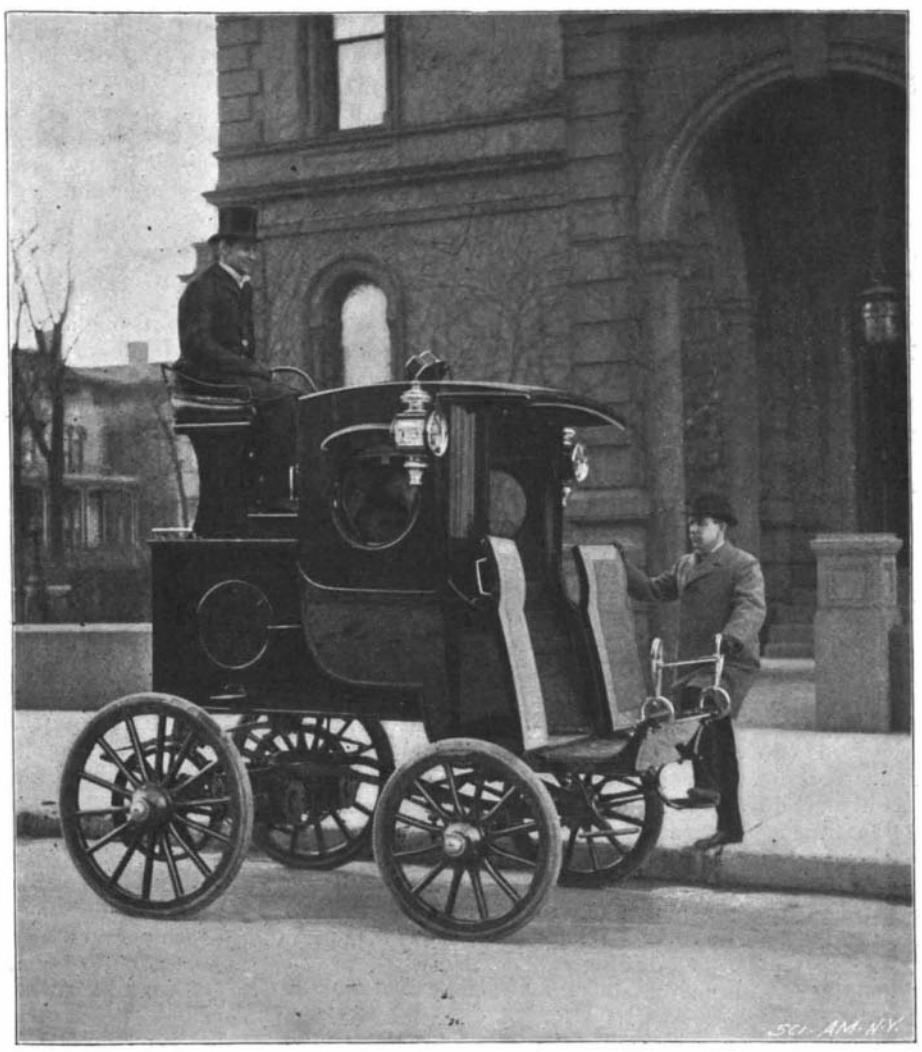
WOODS' ELECTRIC MOTOR VEHICLES.

The art of motor vehicleconstruction has made such progress in the United States that one firm, the Fischer Equipment Company, of Chicago, are enabled to present twenty-nine different types of vehicles, including road wagons, runabout buggies, park buggies, park traps, brakes, stanhopes, phaetons, spiders, full mail phaetons, demi-mail phaetons, physicians' coupes, hansom cabs, victoria hansom cabs, landaus, station wagons, coach delivery wagons, hood delivery wagons, theater buses and depot buses. In fact, the company has about the same range of diversity in design that is offered by the large carriage manufacturers' catalogues of ordinary horse-drawn vehicles. The company are sole manufacturers of the "Woods' moto-vehicles," as they are pleased to term them. Elsewhere in this issue we give an illustration of a group of these vehicles as assembled before the Calumet Club, Chicago, preparatory to a run on the boulevards and avenues of that city.

The different types and characters are well set forth, and show that the art of the carriage builder has been admirably combined with the work of the electrician and the mechanician. The work of Mr. Woods on behalf of his company has been exclusively toward the production of fine artistic carriages and all the various styles and characters known to the carriage maker's trade, rather than the mere production of a self-propelling machine. The company is thoroughly well equipped for the manufacture of horseless carriages, and every part of them, with the exception of the rubber tires, is made in the factory. This insures a uniformity of workmanship and interchangeability of parts which is entirely advantageous to the purchasers.

Our engravings represent the Woods' hansom cab and a two-seated trap. The hansom cab is a particularly fine specimen of the carriage builder's art. The driver sits back of the passenger and from his seat controls the motors and steers the vehicle. So simple is the mechanism that any driver of ordinary intelligence can learn to operate it in a very short time. The cab is equipped with two motors giving 6½ horse power, that is, sufficient battery capacity to run thirty miles with one charge of batteries. There are electric lights in the side lanterns and electric lights and electric foot warmers in the interior of the body. It is designed for use on any and all streets and runs at speeds which vary from 3 to 12 miles an hour. The total weight of these cabs is 2,600 pounds. Our other engraving shows an admirable two-seated trap to accommodate four persons.

The Fischer Equipment Company are making arrangements to build a large number of Woods' electric cabs for use in the city of Chicago, and in some of the large cities they have been received with so much favor that they are filling many orders for private use, and are building a number of vehicles for European trade.



WOODS' VICTORIA HANSOM CAB.

AN UP-TO-DATE VEHICLE MADE BY FISCHER EQUIPMENT COMPANY.

The Woods' moto-vehicles are admirably designed, and one noticeable thing is that wood wheels and hard rubber tires are used almost exclusively. In practical tests of both wire wheels and pneumatic tires and wood wheels and solid rubber tires, it has been demonstrated to the satisfaction of the designer that the latter are far more desirable and endurable in many ways than the former, and present a more satisfactory appearance, and all annoyances due to punctures are done away with.

The control and operation of these vehicles has been reduced to much simplicity, so that it does not take long to acquire the skill necessary to operate them satisfactorily. One important feature is, that it is impossible to apply the brake to any of these vehicles without first cutting the power off from the motors. It is, also, impossible to apply the power without first liberating the brake. This is accomplished by an interlocking device between the brake and controller, the operation of both being effected by the manipulation of a single handle. A separate reversing switch is used which is provided with a lock, so that when the key is removed the vehicle cannot be operated by anyone not possessing a key. The various speeds are obtained by series paralleling the batteries, and in this work great pains have been taken to insure a uniformity of discharge from the batteries when in parallel; and contacts and connections of nearly four times the cross section ordinarily required are used, so that the resistance may be perfectly uniform.

In the light road buggy one motor is used with a differential gear, but in all the Woods' motor vehicles for hard and heavy work two motors are provided, one attached to either rear wheel, and every provision is made for automatic adjustment for the turning of corners or the turning of the vehicle completely around. The motors themselves are built with ironclad armatures and special coil windings, which coils are wound before being placed upon the armature. This enables the coils to be shipped anywhere, so that they can be fitted into the armature without any difficulty whatever by those who understand nothing about armature winding. The batteries may be charged while in the vehicle or duplicate sets may be substituted for them. The batteries are economical and the stated mileage capacity is conservative, and, under the proper conditions, the carriages will do 25 per cent more than their actual guaranteed figure.

The Consulting Cyclist.

The growing use of the bicycle and its frequent prescription as a means to health suggests, as a possibility, which, in fact, is already not far from its accomplishment, the evolution of a new kind of medical specialist, the consulting cyclist, who will devote himself to giving medical and practical advice as to all that concerns the use of the machine; whether to ride or not; what sort of a machine to ride; at what pace to ride; how the saddle is to be adjusted; where the handles are to be set; how the machine should be geared, etc.; all being things which differ for each individual. For, in truth, the fitting of the machine to the individual is a matter of no small nicety, and is one in regard to which the advice of a medical man knowing in such matters is of considerable importance. Many a doctor recommends the use of a 'cycle who is himself no cyclist, just as he may recommend hydropathic treatment, although he may know but little about the various combinations of bath treatment which will be found of greatest use at the particular spa resorted to. In stating the broad fact that cycling will do good, he is acting within the range of his own knowledge and experience; but when he is asked about speed and gears and lengths of run, unless he is a cyclist as well as a medical man, he is apt to find himself at sea, and so is tempted either to deal with these matters "on general principles" or to refer his patient to the dealer. But surely the decision as to all the details of bicycling, especially when bicycling is undertaken for health purposes, is a medical affair, and is also one which may very properly be made a specialty.—Hospital.

Bridges for Russia.

The Phœnix Bridge Company, of Phœnixville, Pa., has just received a contract for twelve steel bridges for the Russian government, and work will be commenced at once. The bridges are for the Eastern Chinese Railway, the southeastern extension of the Trans-Siberian Railroad. Work will be hastened as much as possible, in order that the material will reach its destination before winter begins. It will be shipped to St. Petersburg and thence by rail to Vladivostock. An engineer of the railway is now in Phœnixville, superintending the work.

Fall of Meteors in Indiana.

Two meteors fell at Vincennes, Indiana, on May 1. One struck a slab of stone on a Baltimore & Ohio freight car just as the train had crossed the Wabash bridge, and the slab was shattered by it. The other meteor struck a pile of brick with a loud noise and broke it into small fragments. It is doubtful if the fragments have been examined by scientific men as yet, but from newspaper accounts they appear to have been of a rocky rather than a metallic nature.

WYCLIFF'S English Bible, usually known as the Bramhall manuscript, from the Ashburnham collection, was sold at auction for $8,750, on May 1.

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