

**A MILITARY AUTOMOBILE.**

The persistence with which the idea is advocated of utilizing the bicycle and the automobile in warfare, proves that the builders and users have full faith in the ability of these machines, not only to stand the tremendous strain of a military campaign, but to find a field in which they can give special and very suitable service. In a previous issue we illustrated the latest and probably the most successful attempt to utilize the steam traction engine in warfare. Generally speaking, such an armored train built for traveling across country, or on the roads, is an automobile, and as such it may be said to have proved that automobilism has a future before it in military operations.

The automobile herewith illustrated is a further attempt in this direction. The special field of operations for which the Pennington war automobile is designed is that of light artillery and the machine gun—more particularly the latter. It has been built with the idea of carrying a couple of Maxims or Colts with their detachment rapidly into action; and for this purpose it is provided with engines of exceptional power, and with a belt of armor not shown in the illustrations. It has been constructed with a low center of gravity, and its bulk has been reduced to the smallest limit consistent with the duties it is required to perform.

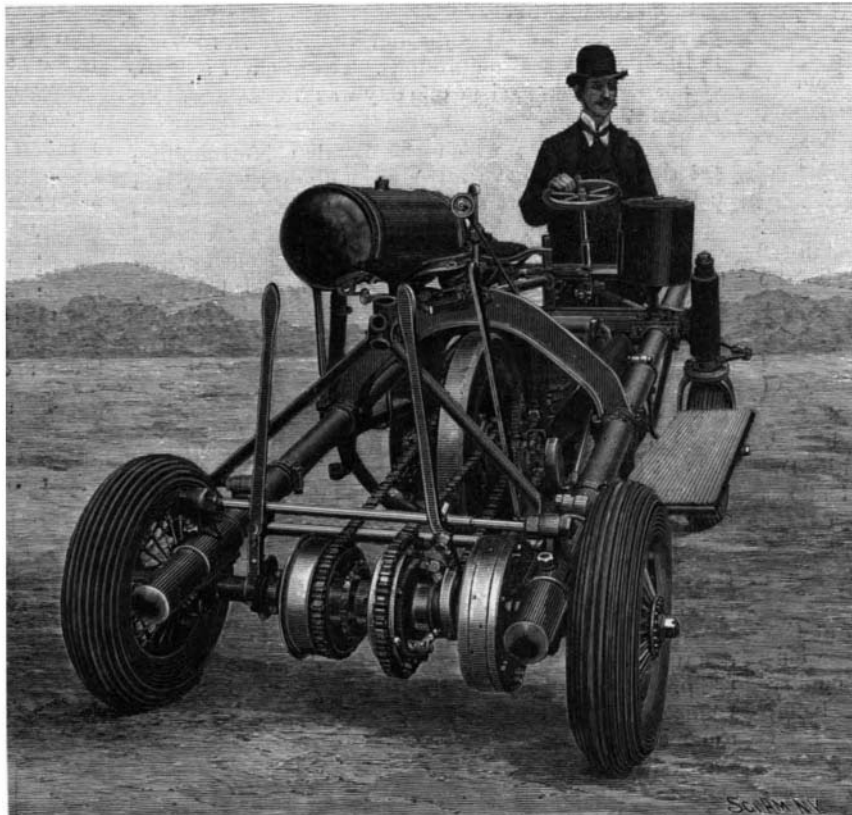
The framework of the machine consists of two longitudinal, 3-inch weldless steel tubes, to which the rear axle and the steering heads of the front wheels are firmly secured. The two main tubes and the whole framework are tied together with cross braces of manganese bronze, and with braces formed of a smaller diameter tubing. The crank shaft is placed in the middle of the frame at the point where the main cross brace occurs. A heavy flywheel is carried at the center of the shaft, and on each side of it and bolted to the main frames are two cylinders,  $5\frac{1}{4}$  inches in diameter by 12 inches stroke, which are made of weldless tubing, and are water-jacketed. The cooling tank is carried on the front of the machine and serves the purpose of a wind-shield. Power is transmitted from the crank shaft to the driving shaft by means of two chains driven from either side of the flywheel. There are, as will be noticed from the engravings, gears for two speeds, the lower for hill climbing and for work on heavy roads, the other being a high-speed gear suitable to fast traveling on good roads. Changes in speed are effected by means of improved friction clutches which enable the gears to be thrown in and out without shock. The tank capacity, both for water and gasoline, is sufficient to enable these machines to run from 150 to 200 miles without replenishing. In order to secure thorough ignition, the motor is fitted with both electric and hot-tube methods of ignition. Leather covers are provided both above and below the running parts to protect them from mud and dust. It will be noticed from the engravings that the machine is well suited to the attainment of high speeds. Its center of gravity is very low, its bulk small, and its horse power unusually large, the latter being estimated at from 36 to 40 horse power. We are informed by the company that in a speed trial on a measured half mile of track, a rate of speed was attained of over a mile a minute.

It will be noticed in the engravings that the wheels because of the large diameter of the tires are well suited to rough roads. The wheels are 22 inches in diameter, the tires themselves are 5 inches in diameter. The total weight of the machine in working order is 1,500 pounds. As completed for war purposes, the machine will be covered on the front and sides with armor which will be proof against bullets, and except at close ranges, against fragments of shell. The machine will accommodate eight people; a steersman in front, a driver, who will

occupy the rear seat, and a crew of six, seated three on a side above the footboards.

**Manila Women Lapidaries and Jewelers.**

The lapidaries of our new Oriental possessions are the dark-skinned women of the Tagal tribe, who have



REAR VIEW, SHOWING ENGINES AND GEARING.

acquired their skill and ingenuity in gem-setting from the artificers of Spain and Morocco. In delicacy of design and execution their work far surpasses that of their masters. Much has been written about the coral jewelry of Manila (pink coral necklaces, white coral pendants, and red coral rosaries like drops of blood), but the impression should not be gained that the lapidary art of the Manila women jewelers is confined to coral products. Pretty and characteristic as these objects of adornment are, they do not compare in value and beauty with the chains of woven gold, filigrees of silver, and pendants of pearls and garnets made by these women. Diamonds, amethysts, and similar stones are not so often met with in the native jewelry of Manila; but their rarity is not known, even though they

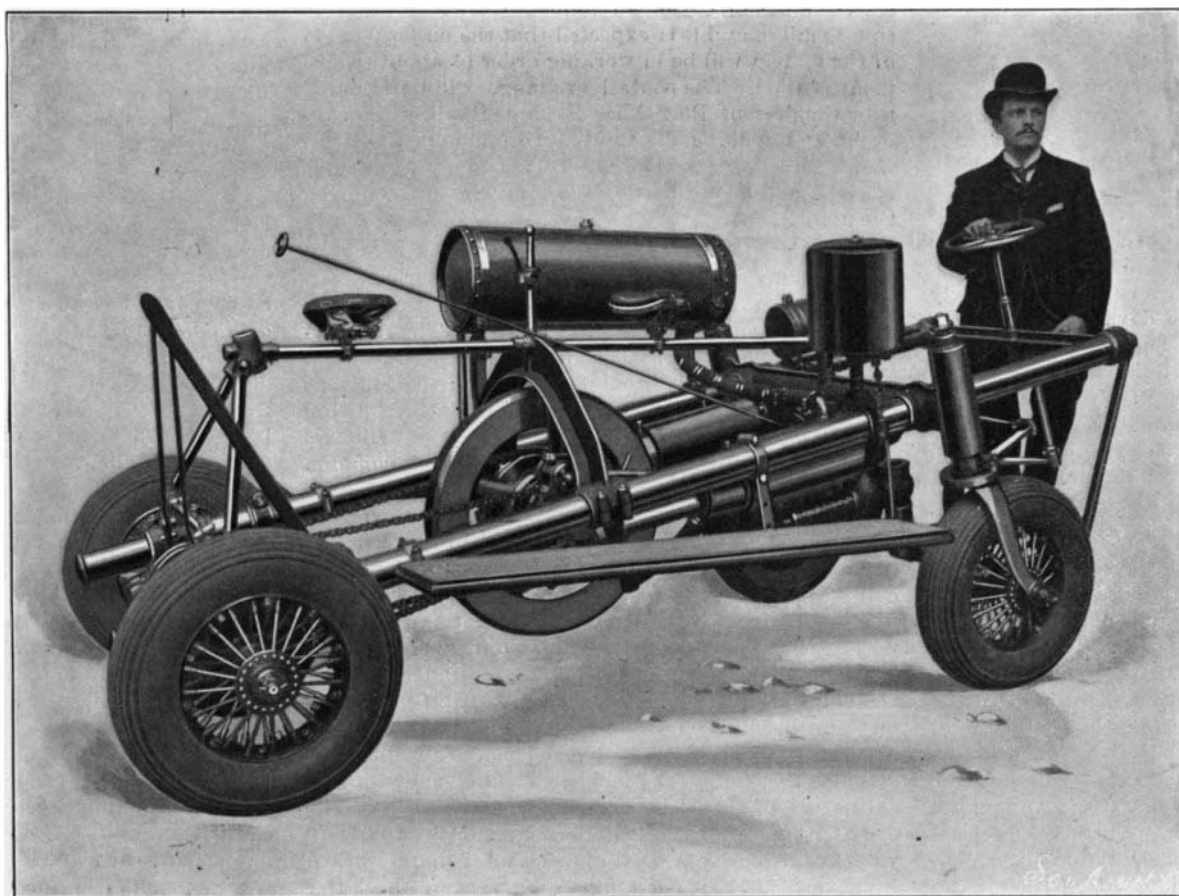
shops of the native jewelers, and the manner in which they are worked up into ornaments of striking beauty and value attracts the attention of an American. A recent importation of many of these most popular Manila ornaments gives promise of their wide introduction into the United States. The specimens brought to this country, all the work of women artificers, show that the native lapidaries combine the ability of the Moorish gem worker with the patience of the Chinese and Japanese craftsman.

Among these specimens are beautiful and exquisite earrings, necklaces, bracelets, chains, buttons, pins and brooches of every conceivable design. The chains are made of the most delicate strands of almost pure native gold, braided and woven like a piece of Manila hemp rope, with even the tiny threads imitated to perfection. So delicate and dainty is such a chain that one can hardly believe it possible that the women lapidaries beat out the rough gold and draw the gold wire without any of the modern implements used by Western gold beaters.

Hatpins of pure gold are made in the form of miniature Malay creeses with water lily leaves for handles. Breastpins and stickpins are often thickly studded with stones. Silver and gold filigree work, lacelike in appearance, is made with rare skill; other products of the women jewelers are necklaces and pendants of dainty gold ferns, flexible and yet strong, with every stem and vine veined exactly as in the original plant. Knives, brooches, and pocketbooks are cut out of mother-of-pearl, and thickly studded with green and red garnets. Black and white pearls are set in gold buttons and earrings. Like most of the Oriental craftsmen, the Manila lapidaries are expert in enameling, an art which they combine with their other work with

excellent taste. The necklace may be of gold, enameled blue, and set with gray pearls, or of black enamel studded with red and green garnets. Few of these jewels are imitations. Nearly every woman lapidary strives to give an individuality to her work, and her products are proof of her success. The treasures of one shop can rarely be duplicated in those of another. Sometimes the conception may be a little crude and lacking in taste; but where there is one such example there will be a dozen that are perfect in every particular. The harmonizing of colors and combining of stones and metals show an instinctive taste among these illiterate Manila lapidaries which is difficult to explain. From the standpoint of the American jeweler there is much in the way of

originality and perfection of design and execution that can be learned from these women of the Orient. In all the art they display something of the dark, sinister Moorish is always suggested, something that is felt in the abundance of Malay creeses, green and golden alligators, dragons, and knives of every design and color. G. E. W.



Cylinders,  $5\frac{1}{4}$  inches diameter by 12 inches stroke; horse power, 36; wheels, 22 inches diameter; tires, 5 inches diameter; total weight, 1,500 pounds.

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are almost entirely lacking in the trinkets of the natives and foreigners in Manila.

Only native gems and minerals, such as garnets, black, yellow, and white pearls, coral, mother-of-pearl, and gold and silver, are utilized by the women jewelers. All of these island gems are found in the small

has also permitted of the cutting of trees which were formerly considered to be of little or no value.

At the 500th anniversary of the University of Cracow, an honorary degree was bestowed on Professor Simon Newcomb.

OWING to the high price of ebony the manufacturers of pianoforte keyboards have been searching for a long time for a cheap substitute with a grain close enough to take the necessary polish. At last it was found that our native dogwood could be stained, oiled and polished until it equaled ebony both in appearance and utility. The wood, which comes in all sizes, is sawed into strips an inch square and 8 to 20 inches long. The strips are piled up cobhouse style, out of doors, where they remain until thoroughly seasoned. The development of this industry has given employment to a considerable number of people, and