

JAPAN.

Armament of the Japanese Infantry.—Japan made war upon China in 1894 and 1895 with the guns of Engineer Mourata of the 1880 and 1887 types, having a caliber respectively of 0.4 and 0.3 of an inch. These guns at present arm only the troops of the second line. The new gun is due especially to Col. Arisaka. It is of the type of 1897, and is manufactured at the Tokio works. Like the Russian gun, it is a repeating one and of small caliber (0.25 of an inch), and with a central magazine for five cartridges. It belongs to the Mauser type.

The barrel, which is 31 inches in length, is provided with six grooves turning from left to right. The breech-sight is mounted upon it by means of a long sleeve, the upper part of which, flattened and hollowed, forms its foot; and the prismatic muzzle-sight is secured to a small hoop that surrounds the tapering end of the barrel.

The movable breech is of the bolt system, and turns back upon the side. The magazine, closed at its lower part by a cover, contains an elevating plate actuated by a spring. If the magazine is empty, this plate places itself in front of the movable head after the opening of the breech, and consequently prevents the closing of it. The object of this arrangement is to notify the soldier that the magazine contains no more cartridges. The recharging is done by means of a brass charging plate provided with five cartridges.

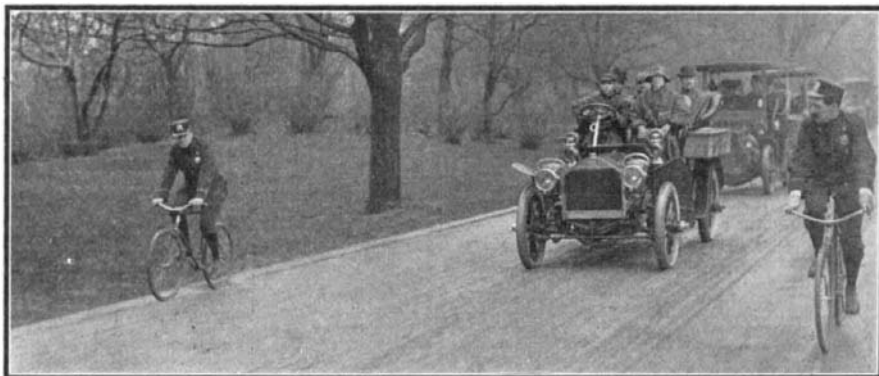
The mounting calls for no particular notice. The stock is formed of two pieces.

The breech-sight has no steps. Its plate is graduated from 400 to 2,000 yards. Up to 400 yards, the soldier makes use of a notch formed in the heel of the plate near the joint. Beyond this he employs the notch of the slider and the two notches of the plate. The slider is fixed at the proper division by means of a small click of which the tooth is held in the corresponding notch formed upon the side of the plate, by means of a spiral spring. The saber-bayonet has a 21-inch blade with a simple bevel and hollowed sides.

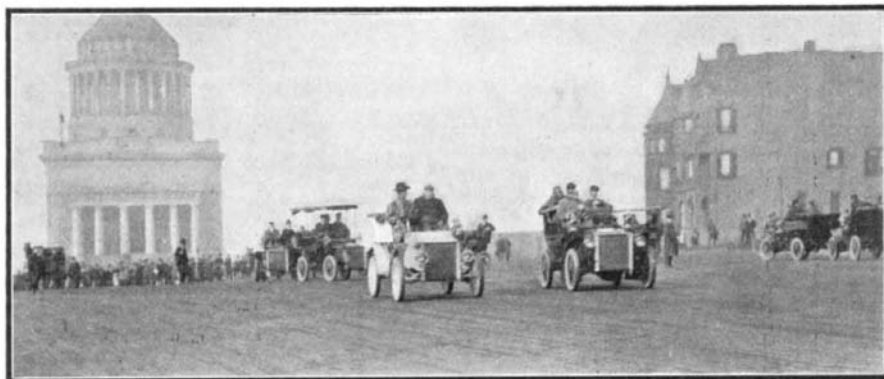
The cartridge comprises a shell, a primer, a charge, and a ball. The shell is of brass with a very convex cap; the primer contains fulminate covered with tin-

foil; the charge consists of 32 grains of Itabaski smokeless powder distributed in scales and strongly plum-bagoed; the ball, which is of hardened lead, with a German-silver jacket, weighs 158 grains and is 1.25 inches in length. The total weight of the cartridge is 336 grains; that of the charging plate, empty, 128 grains, and full, about 4 ounces. The charging plates are united in threes in cuneiform cardboard boxes weighing 12 ounces each.

Complementary Data.—Initial velocity, 2,378 feet; pitch of the trajectory at 500 yards, 3.87 feet; length of the gun without bayonet, 4.16 feet; length of the gun with bayonet, 5.44 feet; weight of the gun without bayonet, 8.6 pounds; weight of the gun with bayo-



THE DIVISION OF FOREIGN CARS AND RACERS IN CENTRAL PARK.



DIVISION OF WHITE STEAM CARRIAGES MAKING THE TURN AT GRANT'S TOMB.

net, 9.6 pounds; penetration of spruce at 130 feet, 7.5 feet.

The number of cartridges carried by the Japanese foot soldier is 120 (as in Russia), partly in two cartridge boxes and partly in boxes in the knapsack.

NEW YORK'S SPRING AUTOMOBILE PARADE.

What was undoubtedly the longest procession of automobiles that has as yet been seen in this city was that which went through Central Park and up Riverside Drive to Grant's Tomb and back on Saturday, April 30. Though the parade was obliged to start in a pouring rain, 142 pleasure vehicles entered Central Park at about 2:30 P. M., and passed through and out at Seventy-second Street at a speed of seven miles an hour. One of our illustrations shows one division of the parade, headed by bicycle policemen, on its way through Central Park. The first car in this division was a gasoline Locomobile.

On emerging from the park at Seventy-second Street, the parade was enlarged by 73 commercial vehicles and trucks, so that altogether there were 215 automobiles in line. Our second photograph was taken at the turning point near Grant's Tomb. It shows the White steam carriages, which were the only steam machines in line, and which, as usual, made a fine showing.

The machines went so slowly through the park, in order to keep within the seven-mile speed limit, that some of the larger ones had trouble with the water boiling in their radiators, and were consequently obliged to drop out of the procession.

About thirty machines had canopy tops, but the majority of the automobilists had to brave the rain. One of the large covered Panhard machines was driven by a lady, who had with her three lady friends. Altogether, about twenty women rode in the parading cars.

If the weather had been fair, it is probable there would have been four or five hundred automobiles in line. Considering the weather conditions, a very good showing was made.

The first asphalt pavement was laid in Paris in 1838, and since then the demand for this purpose has warranted an annual production throughout the world of 450,000 to 500,000

metric tons of asphaltum and bituminous rock. The consumption in the United States alone in the year 1903 was over 250,000 tons, which is equivalent to more than one-half of the average production in the world.

RECENTLY PATENTED INVENTIONS.

Hardware.

PIPE OR BAR CUTTER.—W. T. SNELL, Octave, Ariz. An object of Mr. Snell's invention is to provide a cutting-tool which may be adjusted to fit and securely clamp any size bar or pipe while the cutting operation is being proceeded with, the arrangement of the parts being such that the size and depth of the cut made by the tool may be regulated, depending entirely on the force or pressure exerted through the handle by the operator.

Heating and Lighting.

GAS-HOLDER.—J. H. COKE, Black Diamond, Wash. The leading feature of this invention resides in means for containing any quantity of gas under high pressure and for automatically reducing and regulating this pressure as the gas is fed to the point of consumption. This enables the gas, particularly in case of acetylene, to be used at a point removed from the point of generation, and by enlarging the capacity of the principal or high-pressure reservoir the periods between the recharging of the gas-holder may be extended to any reasonable length.

ACETYLENE-GAS GENERATOR.—G. A. BROWELL, Pittsfield, Mass. In this patent the invention pertains to improvements in acetylene-gas generators, an object being to provide a generator of simple construction and having means for automatically feeding the carbide in determined charges or quantities, thus making the generation of gas practically continuous and under even pressure.

Machines and Mechanical Devices.

LIQUID-DISPENSING APPARATUS.—W. B. COCHRANE, Chicago, Ill. This apparatus is constructed to allow bottles or packages to be contained therein at one time although the liquid contents of the packages may be individually drawn off by the manipulation of suitable valves. Each bottle or package is held airtight in engagement with a stopper, and the package is supported by a form of holder which can be manipulated so as to readily dismount an empty bottle and replace it by a filled bottle.

ILLUMINATOR FOR SEWING-MACHINES.—P. ENGLUND, Chico, Cal. In this case the invention refers to an illuminating device for

lighting sewing-machines and analogous structures. Mr. Englund's particular idea is to produce a simple, efficient, and reliable illuminator for use upon sewing-machines and to a great extent controllable at will by the operator so as to attain the best distribution or concentration of light upon any desired object on any part of the table.

CONTROLLING DEVICE FOR MAINTAINING STEADY PRESSURE.—T. P. FORD, New York, N. Y. This device is of that class that are used for operating dampers of boilers or for starting and stopping pumps employed for pumping water into overhead tanks and the like. The device is exceedingly sensitive and is arranged to work quickly to change the position of the stopping and starting mechanism of the pumps, damper, or other device to be controlled.

MEASURING APPARATUS.—C. R. HUDSON, Warren, Ind. The invention comprises a peculiarly-arranged instrument adapted to be used in connection with a line descending into the well and to indicate the depth to which such line descends. Preferably the instrument is used in connection with the sand-line which is attached to the bailer of the well-driving apparatus; but the invention is not limited to such connection.

PLANNER.—E. RAWSON, Moscow, Idaho. In this instance the improvement relates to wood-working machinery; and the object is to provide a planer arranged to permit a slow or fast feed of the material to be treated in either a forward or backward direction and to allow convenient adjustment of the feed-rolls and the cutter-head to treat materials of different thicknesses without stopping the machine.

MACHINE FOR SEWING CORSETS.—S. ROYLE, 56 St. Andrews road, Southsea, Hants, England. Mr. Royle's object is to provide means whereby the piece of fabric to be united will be simultaneously fed by the folding inward to a definite extent and in opposite directions of their cut edges and at the same time overlapped to the exact extent required and united by the double line of stitching in such manner that the configuration of the corset when the parts are united will be determined by the contour of the cut edges of the component parts.

MUSIC-LEAF TURNER.—C. THOMA, JR., Carlstadt, N. J. One purpose of this invention is to provide a construction of turner and one which will not injure the page or sheet of

music in connection with which it is used, and, further, to provide a conveniently-accessible means for turning one leaf after the other, each leaf being independently turned by a single movement of the hand, which movement will necessitate the removal of the hand from the keyboard for only a fractional portion of a second of time.

CEMENT-PLASTER KETTLE.—C. H. MALONE, Acme, Texas. The present invention is an improvement in kettles for cooking gypsum in order to convert the same into cement-plaster. Means are provided that are highly advantageous in many directions such, for instance, as, preventing the kettle from burning; carrying off steam and dust that may accumulate in cooking the raw material; and securing the benefit of the heat to cook the plaster with less fuel than in the ordinary kettle now employed.

Of Interest to Farmers.

FENCE-POST.—M. C. WIX, Milburn, Ky. In this patent the improvement refers to fence-posts, and it consists of a special post, having peculiar wire fastenings, whereby the fence-wire strands are effectively secured to the posts. The strand is passed into a pocket of a slot and when a hook device is adjusted to the limit of an elongated slot on its securing-pin a bill of the hook device will pass over the strand-wire and drop to engagement therewith.

GRAIN-SCREEN.—F. FREDEN, Taylors Falls, Minn. In this case the improvement is in that class of grain screens or sieves which are provided with transverse slats pivoted in such a manner as to adapt them to be adjusted at different angles. Mr. Freden has devised certain novel features whereby the screen or sieve is free from some objections to others of its class, and is superior in other points.

COMBINED GRAIN THRESHER AND SEPARATOR.—F. FREDEN, Taylors Falls, Minn. This machine is an improvement in that class of threshers and separators in which a series of horizontal tooth-bars are connected with transverse crank-shafts in such manner that they receive the combined up-and-down and forward-and-back movement, whereby the mingled straw and grain received from the threshing-cylinders are conveyed rearward and the grain separated from the straw in the course of its progress.

WIRE FENCE.—W. B. HUGHES, Dallas, Texas. The present invention is an improvement in wire fences, and particularly in that class of such fences which employ line-wires composed of strands twisted together to form a twisted cable, and the invention relates particularly to the connection between the fence-stays and the cables.

Prime Movers.

COMPOUND ENGINE.—S. ROTHSCHILD, New York, N. Y. The object of the invention is to provide an engine which is very compact, easily started and reversed, and arranged to utilize the motive agent to the fullest advantage. The special arrangement is such that the low-pressure cylinder not only contains the low-pressure piston, but also the high-pressure cylinder.

Pertaining to Vehicles.

DUMPING-CART.—S. GANTZ, Hagerstown, Md. The present invention is an improvement upon the dumping-cart for which Mr. Gantz received former Letters Patent. The invention provides a means for shifting the relative positions of the axle and body whereby in dumping the axle is drawn forward of its normal position to facilitate the tilting of the body.

Of General Interest.

NON-REFILLABLE BOTTLE.—A. OULLIÉ, 83 Rue Blanche, Paris, France. In this patent the improvement has reference to non-refillable bottles; and it consists of a system of plugs or obturators for preventing bottles carrying good marks or labels from being fraudulently filled with a view to deceive the consumer as to the origin of the liquid contained in the bottle.

COMBINATION COLLAR AND CUFF BUTTON.—A. E. STRANG, Canton, Ohio. The inventor provides a button of a construction by which the parts thereof may be readily reversed and applied or fitted together to adapt the button for either of the uses for which the same is primarily intended, and a button which is light in weight, besides being strong and having a capacity for long and continued service. The structure of the button may be readily altered or changed to either form without loss of time and with comparatively no labor.