

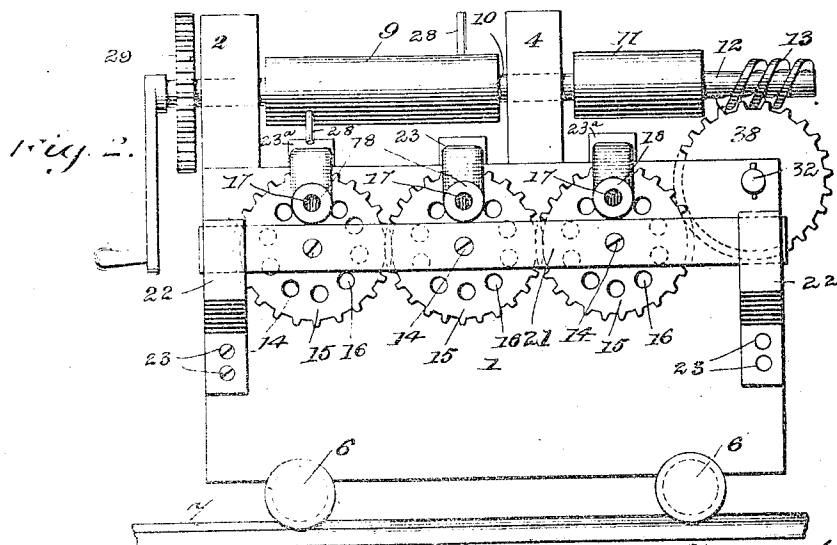
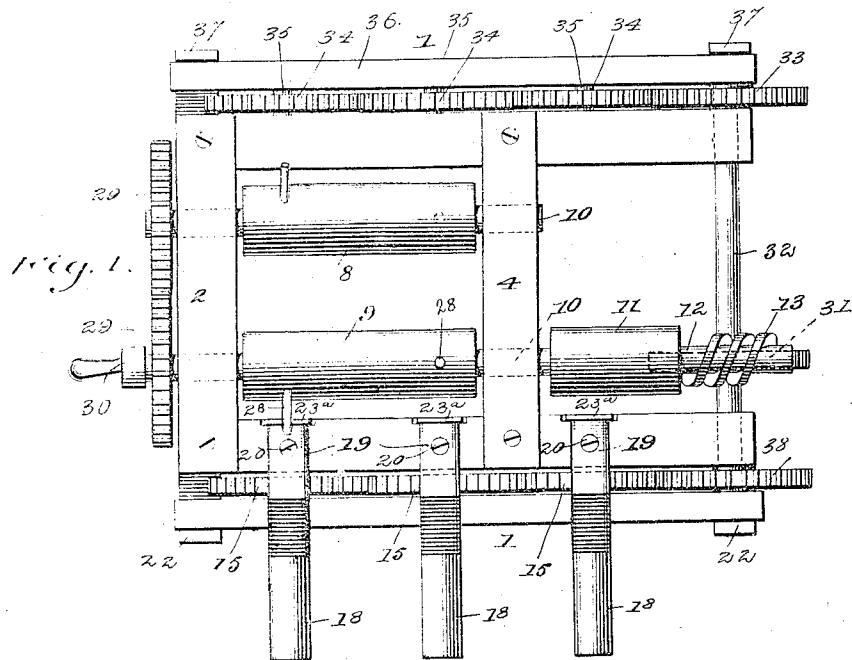
(No Model.)

2 Sheets—Sheet 1.

F. EBELING.  
MACHINE GUN.

No. 531,168.

Patented Dec. 18, 1894.



Witnesses.  
H. Schaefer  
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Inventor.  
Fred. Ebeling

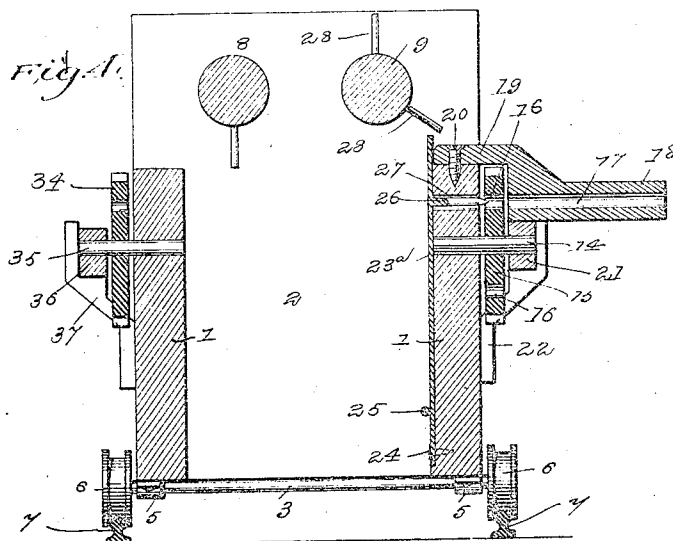
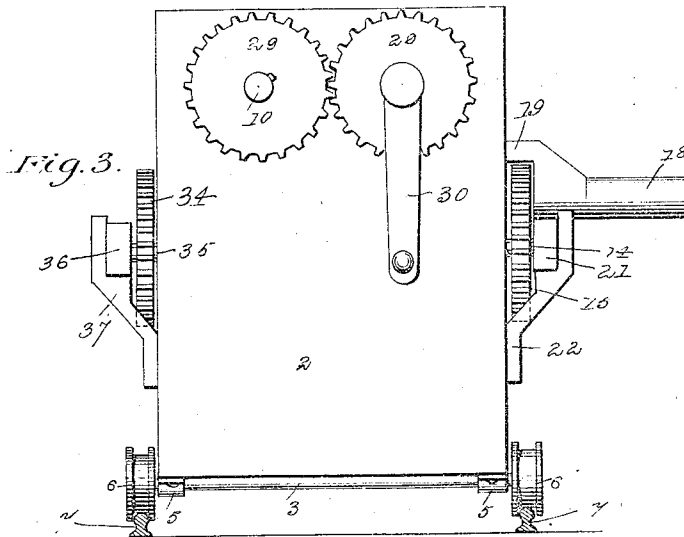
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2 Sheets—Sheet 2.

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MACHINE GUN.

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# UNITED STATES PATENT OFFICE.

FRED EBELING, OF LINN, KANSAS.

## MACHINE-GUN.

SPECIFICATION forming part of Letters Patent No. 531,168, dated December 18, 1894.

Application filed April 19, 1894. Serial No. 508,240. (No model.)

*To all whom it may concern:*

Be it known that I, FRED EBELING, a citizen of the United States, residing at Linn, in the county of Washington and State of Kansas, have invented a Shooting-Machine, as set forth in the annexed specification.

This invention relates to a machine gun particularly adapted for use on express cars of railroads, and for defending the same from the attacks of robbers and outlaws. It is capable of use, however, in various other connections, indeed for all purposes to which other guns of this class are put.

The object of the invention is to provide a machine having a plurality of barrels, each with a separate cartridge carrier and firing mechanism, and the whole combined with means for operating all the parts in unison.

To this end the invention consists of a series of gun barrels, each provided at its rear end with a cartridge-carrying disk in which the cartridges are arranged, and combined with spring-actuated firing-pins, which are capable of exploding the cartridges as successively presented thereto by the revolutions of the said disks; and in mechanism for operating the firing-pins simultaneously and in unison with the revolutions of the disks aforesaid.

Referring to the accompanying drawings: Figure 1 represents a plan view of my machine embodied in its preferred form; Fig. 2, a side elevation thereof; Fig. 3, an elevation of the front end thereof; Fig. 4, a vertical cross-section of the machine.

The reference numeral 1 indicates the side portions of my machine, which are duplicates of each other and which are rigidly joined by means of the front portion 2, axles 3, and beam 4.

The front portion 2 of the machine projects a considerable distance above the upper edges of the side portions 1, and is rigidly secured thereto; while the axles 3 are two in number and are fixed to the lower edges of the side portions 1 by means of the boxes 5. Mounted upon the axles 3 are the grooved carrying-wheels 6, which are two for each axle and which are designed to travel upon the track 7, as may be seen by reference to the drawings, and whereby the machine may be moved. The track 7 may be a track laid in the express

car, or at any place where it is desired to use the machine.

Revolubly journaled in the upper end of the front portion 2, and in the beam 4, are the drums or shafts 8 and 9, which are two in number and which are provided with reduced portions or trunnions 10, by which their mounting is effected. The drum or shaft 8 extends only between the end portion 2 and beam 4, while the drum 9 is extended or provided with an auxiliary drum 11, projecting rearward of the beam 4. This drum or shaft 11 has no bearing at its rear end; and is reduced or provided with a smaller and axially-coincident shaft 12 at said rear end. The shaft 12 carries a worm 13, which operates as will be hereinafter described.

14 indicates three shafts, which project out transversely from the left-hand side portion 1, and which have the respective cartridge-carrying gears 15 revolubly mounted thereon. The gears 15 are three in number and are each formed with the cartridge-receiving openings 16. These openings are arranged in circles in each gear, and the gears are so adjusted that as they revolve their respective openings 16 will register with the bores 17 of the gun-barrels 18. The gun-barrels 18 are one for each of the gears 15, and are provided, at their inner ends, with rearwardly-offset arms 19, by which they are secured to the upper edges of the side portion 1, to which the gears 15 are attached, screws or other fastening devices 20 being provided whereby to effect the fastening.

21 indicates a longitudinal bar, which serves as a bearing or support for the outer ends of the shafts 14, which are held in place by means of the brackets 22, located one at each of its ends. The brackets 22 are removably secured in place by screws 23, and the purpose of their removable mounting will be hereinafter explained. The mechanism for exploding the cartridges used in the machine consists of three vertical spring-plates 23<sup>a</sup>, secured to the inner and lower sides of the side portions 1, by means of the screws 24 and clamping staples 25. These plates are located one opposite each of the gears 15, and have formed integral therewith the firing-pins 26, which are adapted to be arranged in openings

27 in the side portions, as shown, which openings permit the firing pins to project partially within one of the openings in each of the gears 15. Fixed to the shafts or drums 9 and 11 are the spurs or arms 28, which are three in number, one for each of the plates 23<sup>a</sup>, and which are located on their respective drums or shafts so that they will alternately engage their adjacent plates 23<sup>a</sup>, as will be understood by reference to the drawings.

The front extremities of the shafts or drums 8 and 9 are projected forward of the front portion 2, and there provided with the fixed gears 29, which mesh with each other and which are provided to effect the transmission of motion from the shaft or drum 9 to the shaft or drum 8, a crank-arm 30 being affixed to the shaft or drum 9 by which motion is primarily imparted thereto. The worm 13 meshes with a gear 31, fixed to a transverse shaft 32, journaled in turn in the rear ends of the side portions 1.

The right-hand end of the shaft 32 is provided with a spur-gear 33, which meshes with the rear gear of the three gears 34. These gears 34 are respectively journaled upon the shafts 35 of the right-hand side portion 1, a bar 36 and brackets 37 being provided and operating as the bar 21 and brackets 22 of the opposite side of the machine. This right-hand side of the machine, with its gears 35 and associated parts, is intended to be equipped with mechanism similar to that supplied to the left-hand side. It is not shown, however, since the construction of the left-hand side as shown in the drawings will fully reveal the nature thereof.

In the operation of my invention the openings 16 in the gears 15 should be provided each with a cartridge. This is to be effected by removing the barrels 18 and brackets 22, whereupon it will be possible to slide the gears 15 off the shafts 14, thus putting them in position to be filled with cartridges. When this is done, the parts should be replaced and the machine will then be ready for operation. The cartridges are fired by applying a rotary movement to the shaft 9, which will result in an engagement of the studs or arms 28 with the spring-plates 23<sup>a</sup>, thus drawing them back momentarily and allowing them to spring forward when released, thus throwing the firing-pins 26 into engagement with the respective cartridges and firing the same, the bullets thereof passing out through the bores 17, of the barrels 18. Simultaneously with this operation the gears 15 will be revolved through the medium of the gear 38, fixed to the left-hand end of the shaft 32, and meshing with the rear gear 15. This revolution of the gears 15 will successively place each opening 16 thereof opposite the corresponding openings or bores 17 of the barrels 18, thus placing the contiguous cartridge in position to be exploded after the preceding cartridge has been so acted upon.

It will be understood that the gears and

other motion-transmitting parts of my machine will be so adjusted that the parts will operate with the necessary regularity and regulation. Thus, it is essential that each firing-pin 26 be withdrawn from the corresponding opening 16 immediately after the cartridge thereof has been exploded, and that said pin be allowed to fall back as soon as the contiguous opening 16 is opposite the pin, the revolution of the gear 15, during the interim, being sufficient to place the next opening 16 in position.

In the complete machine, the mechanism at the right-hand side thereof will operate similarly to the operation just described, and this through the medium of the worm 13 and shaft 32, as explained. The machine is mounted upon the track 7 so as to facilitate moving it during the firing operation, thus making it possible for the machine to be given a larger range than ordinarily. This movement will be a substitute for the vibratory movement imparted to the barrel of the well-known Gatling gun.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, I claim—

1. The combination of a gun barrel, a disk axially mounted adjacent to the rear end thereof and provided with means for imparting a rotary movement to it, the said disk having a series of cartridge-receiving openings therein, said openings being capable of respectively registering with the bore of the gun barrel, a spring-plate provided with a firing-pin the plate being mounted so as to be capable of movement in a line longitudinally with the gun barrel and directly toward the rear end thereof, and a revoluble shaft having studs thereon for swinging said spring-plate and thereby causing the firing-pin to explode the cartridges placed in the path thereof, substantially as described.

2. The combination in a machine gun, of a frame having a vertical side portion, a gun barrel provided with a rearwardly-offset arm secured to the upper edge of said side portion by means thereof, a shaft projecting out from the side portion, a gear-wheel mounted thereon and provided with a circular series of cartridge-receiving openings capable of being successively presented to the gun barrel, means for driving the gear-wheel, a spring-plate fixed to the side portion and provided with a firing-pin projected through an opening in said side portion and capable of exploding the cartridges as they are presented to the gun barrel, a shaft or drum revolving above the spring-plate, and an arm radiating from said shaft or drum adapted to engage the spring-plate as the shaft or drum revolves, substantially as described.

3. In a machine gun, the combination of a

frame having a vertical side portion, a plurality of shafts projecting transversely therefrom, a gear-wheel mounted on each shaft and provided with a circular series of cartridge-receiving openings, a horizontal bar in which the outer ends of the shafts are arranged, brackets secured to the side portion and supporting the horizontal bar, a gun barrel for each gear-wheel and in juxtaposition to the cartridge-receiving openings thereof,

a spring-plate fixed to the side portion, a firing-pin carried by said plate, and an arm moving in a circular path and adapted to engage the spring plate, substantially as described.

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Witnesses:

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