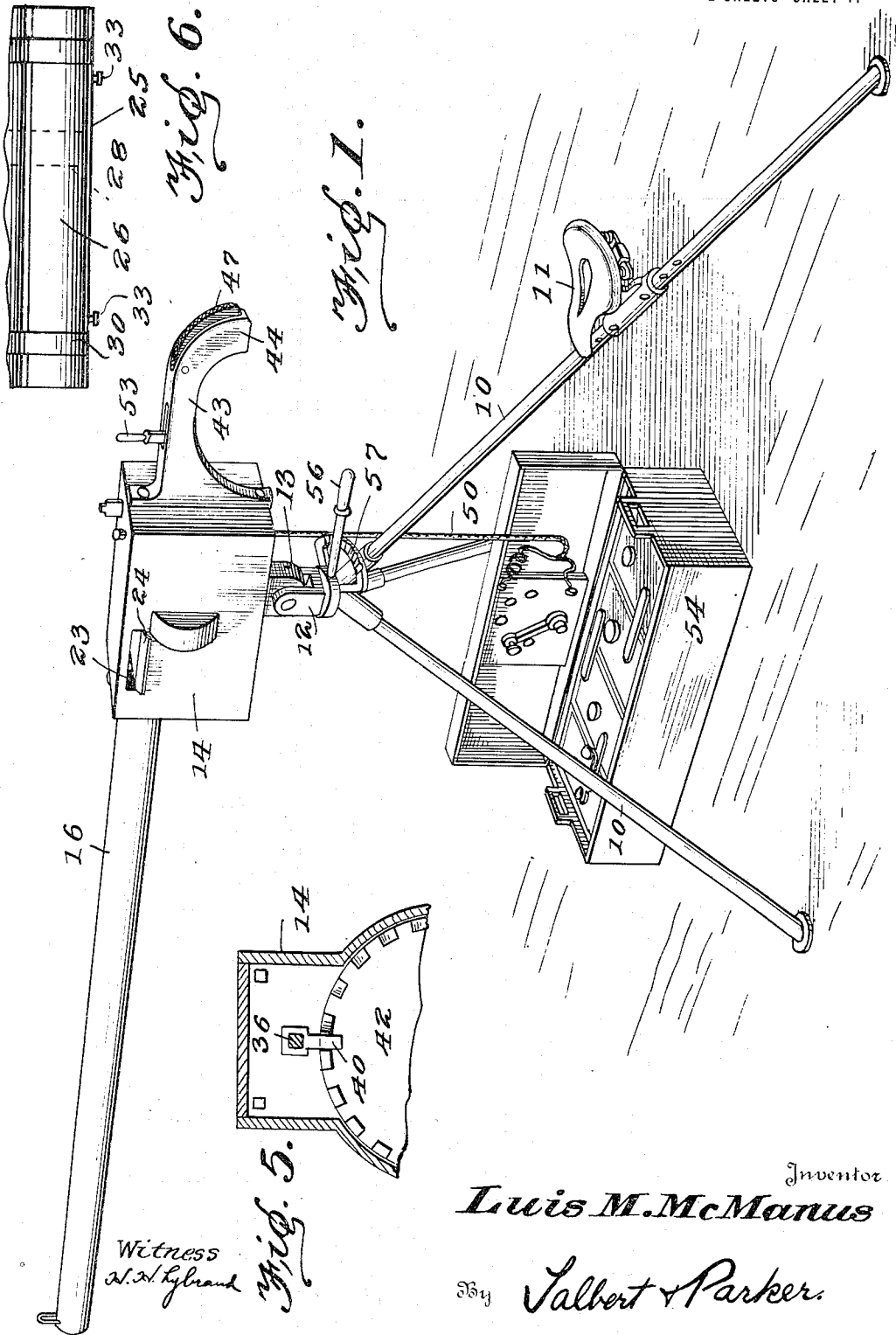


L. M. McMANUS.
MACHINE GUN.
APPLICATION FILED MAR. 29, 1917.

1,273,078.

Patented July 16, 1918.

2 SHEETS—SHEET 1.



Inventor
Luis M. McManus

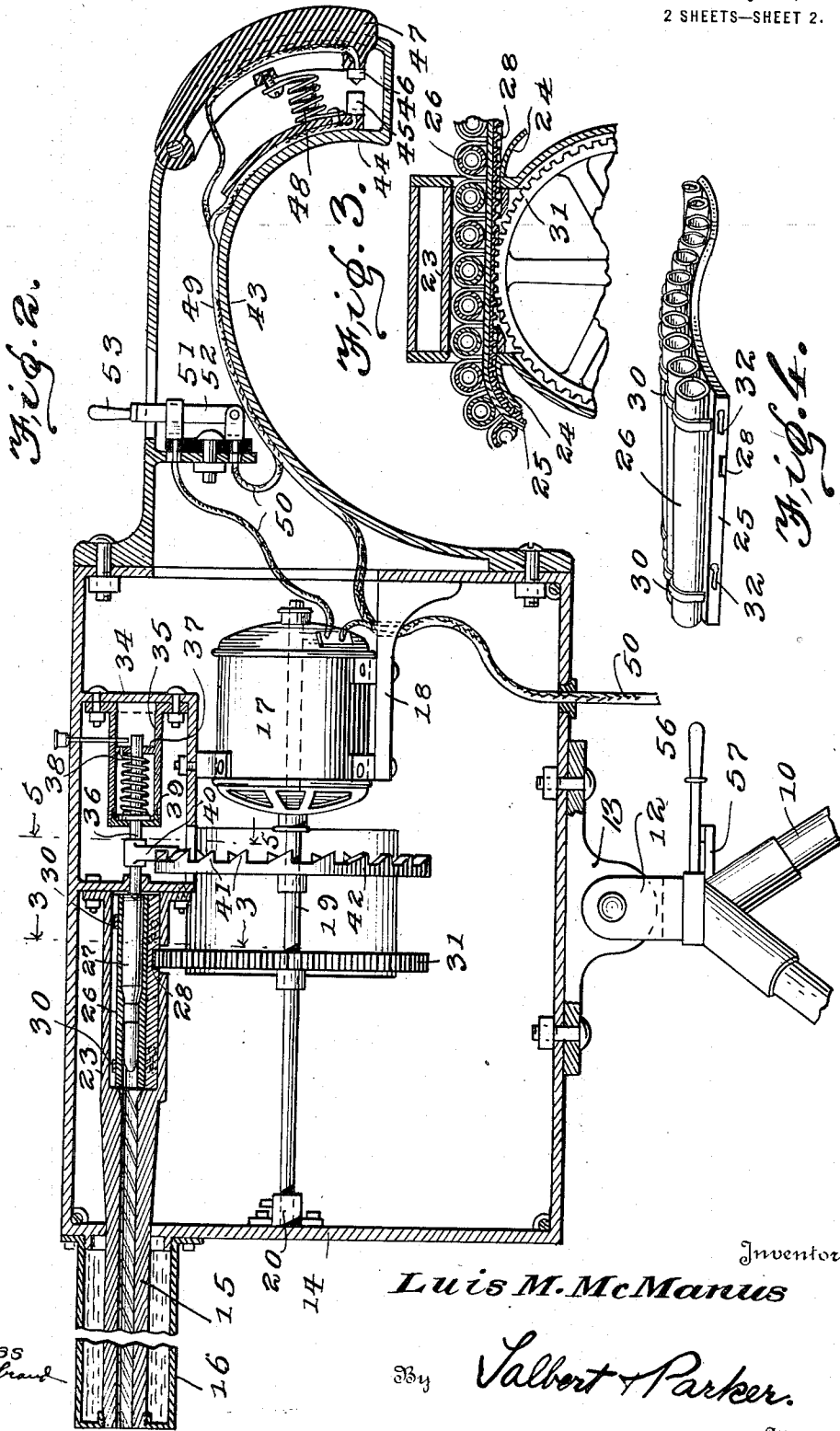
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UNITED STATES PATENT OFFICE.

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MACHINE-GUN.

1,273,078.

Specification of Letters Patent.

Patented July 16, 1918.

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To all whom it may concern:

Be it known that I, LUIS M. McMANUS, a citizen of the Republic of Mexico, residing at Houston, in the county of Harris and State of Texas, have invented certain useful Improvements in Machine-Guns, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to machine guns, and has for an object to provide a structure wherein the cartridges are positively and consecutively fed to the explosion chamber of the gun, and the firing pin is positively actuated at each successive step of the cartridge feeding mechanism.

It is another object of the present invention to provide a structure of a gun wherein a belt or the like may be employed for carrying a relatively large number of cartridges, and for discharging the cartridges when on the belt without the provision of auxiliary feeding devices dependent upon the recoil of the gun for their operation.

It is a still further aim of the present invention to provide a gun of this character which is of simple construction, comprised of relatively few parts, and which may be easily adjusted and set up for use.

The above, and various other objects and advantages of this invention will be more fully brought out in the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawings wherein:

Figure 1 is a perspective view of a gun constructed according to the present invention.

Fig. 2 is a detail enlarged view with the barrel and casing of the gun partially broken away.

Fig. 3 is a fragmentary sectional view taken on the line 3—3 of Fig. 2, showing the cartridge feeding belt passing through the firing chamber.

Fig. 4 is a perspective view of a section of the cartridge carrying belt.

Fig. 5 is a section on the line 5—5 of Fig. 2.

Fig. 6 is a plan view of one end of the cartridge carrying belt.

Referring to these drawings, wherein like parts are designated by similar numerals of reference throughout the several views, 10 designates a tripod of any adaptable con-

struction and which is provided on one leg with a seat 11 upon which the operator may rest. Swiveled upon the tripod is an upwardly extending fork 12 adapted to be turned on a vertical axis into various positions. The fork 12 carries between its arms an ear 13 secured against the under side of the casing 14 of the gun. As shown in the present instance, the casing is substantially of rectangular form and provided at its forward end with a barrel 15, the same being inclosed in an annular casing 16 adapted to contain a suitable cooling solution for preventing the barrel from over-heating.

Within the bottom of the casing 14 is arranged an electric motor 17 which may be secured to a bracket 18 projecting inwardly from the rear wall of the casing 14, and which has an elongated driving shaft 19 extending toward and being supported in a bearing 20 secured against the inner side of the front end of the casing. Arranged in the top of the casing 14, and in line with the explosion chamber of the barrel 15, is a metallic chamber 23 constituting the discharging or firing chamber of the gun. The chamber 23 is open on its opposite sides and is provided with laterally extending aprons 24 over which passes an endless conveyer belt 25 provided upon its outer supporting face with a plurality of transversely extending tubes or containers 26 in which cartridges are adapted to be placed. The containers 26 are counter-bored at their rear ends and are adapted to snugly receive a cartridge therein, as indicated at 27. The tubes 26 are of a length equal substantially to the length of the chamber 23 and are adapted to fit snugly therein. The rear end of the cartridge, when its tube is fitted in the chamber 23, lies in close proximity to the rear end of the chamber. The belt 25 is provided in its inner face with a series of teeth 28 adapted to mesh with teeth of a wheel 31 working through the lower wall of the chamber 23 and projecting upwardly into the same to a slight extent to fit into the teeth 28 which are inset, or formed in a longitudinally extending groove in the belt. The tubes 26 are secured to the belt 25 in any suitable manner, in the present instance straps 30 being disclosed as encircling the tubes adjacent the ends to hold them from lateral shifting. The tubes are adapted to be closely nested together upon the bearing

surfaces of the belt 25. The belt 25 is looped through the chamber 23 and hangs downwardly therefrom. The toothed wheel 31 is mounted on the shaft 19 and meshes with the teeth 28 of the belt to positively drive the belt. The belt may be made in a number of sections, or may be made in one length with its ends detachably connected together, in which latter case, the meeting ends of the belt are secured together by transversely extending key-hole slots 32 formed in one end of the belt adjacent to the opposite edges thereof, and headed studs 33 projecting from the opposite end of the belt which studs are in register with the key-hole slots and are adapted to engage therein by a lateral movement of one end of the belt relatively to the other.

In rear of the chamber 23, is arranged a frame 34 in which is disposed a bracket 35 slidably holding a firing pin 36 in line with the chamber 23. The bracket 35 has a transversely extending web 37 within its rear end through which the pin 36 slides, and against which a coil spring 38 abuts. The coil spring 38 surrounds the firing pin and extends forwardly therearound, the forward end of the spring having connection with the firing pin 36, as at 39, and normally urging the firing pin forward. The forward end of the firing pin is pointed and projects through an opening formed in the rear end of the chamber 23, and is adapted for contact against the rear end of the cartridge 27. The firing pin 36 is provided, forwardly of the bracket 35, with a depending finger 40 which lies in the path of the cam teeth 41 formed on one side of a disk or cam wheel 42. The wheel 42 is mounted on the shaft 19 and is adapted to be turned thereby.

The rear end of the casing 14 carries a hollow handle 43 having a depending hand grip portion 44 at its free end and provided therein with a fixed contact 45 and a movable contact 46, the latter being mounted upon an insulated handle piece 47 which is pivoted in the grip 44. A spring 48 lies between the inner wall of the hand grip 44 and the portion 47 for normally urging the latter outward and holding the contacts 45 and 46 apart. Wires 49 lead from the fixed and movable contacts through the handle 43 and into the casing 14. One wire, 50, has interposed therein a suitable switch 51 of the knife blade or other suitable type, which has a pivoted part 52 projecting through the top of the handle 43 and provided with a knob 53 or the like by means of which the switch may be opened and closed. One of the wires from the handle, such as the wire 50, is connected to one terminal of the motor 17, and leads away from the opposite pole of the motor. The other wire joins the wire 50 beyond the motor 17, and the cable 49 which incloses the two passes downwardly

from the casing 14 to an accumulator or storage battery 54.

The fork 12 is provided with a handle 56 projecting rearwardly therefrom, so that it and the casing may be swung into various positions of adjustment for varying the direction of travel of the projectile. A securing device 57 is mounted on the tripod for holding the arm 56 in adjusted position.

The casing 14 may be of any suitable construction to permit access thereto, and various modifications may be made in the details of construction as above specifically pointed out without departing from the spirit of this invention.

In operation it is only necessary for the operator to grasp the hand grip 44 and press the section 47 thereon inwardly to bring the contacts 45 and 46 together. The switch 51 however must first be closed before the hand grip becomes operative to control the machine. When the contacts are closed, current passes from the exciter or accumulator 54 through the motor 17, driving the motor and causing the shaft 19 to turn. As the shaft 19 turns the cartridges 27 are brought one at a time into the chamber 23, and during the adjusting of the cartridge in the chamber, the corresponding tooth 41 engages the finger 40 and retracts the firing pin 36. When the tooth 41 passes the finger 40, the spring 38 drives the firing pin 36 forwardly with considerable force, the pin striking the closed end of the cartridges.

This action causes the cartridges to explode and project the bullet forwardly through the barrel 15.

It is within the spirit of the invention to modify this structure to an extent restricted only by the following claims.

I claim:

1. In a machine gun, the combination with a casing, of a firing chamber carried within the casing, a barrel having connection with the firing chamber and protruding through one end of the casing, the firing chamber having an opening on the bottom, the casing having openings on either side in communication with the firing chamber, a belt movable longitudinally through the firing chamber and being provided on its underface with a plurality of rack teeth in registration with the opening in the bottom of said firing chamber, a plurality of tubes carried on the top face of the belt, a firing pin slidably mounted in the casing and entering the rear end of the firing chamber, the tubes on the belt being of the proper internal conformation to receive and carry cartridges, means normally projecting the firing pin into said firing chamber, means for advancing the belt through the firing chamber so that successive cartridges carried thereby may be brought in registration

with the barrel, and means conjoined with the said latter means for retracting the firing pin and releasing it at the time that the cartridge is in registration with the barrel.

2. In a machine gun, the combination with a casing, of a firing chamber carried within the casing, a barrel having connection with the firing chamber and protruding through one end of the casing, the firing chamber having an opening on the bottom, the casing having openings on either side in communication with the firing chamber, a belt movable longitudinally through the firing chamber and being provided on its underface with a plurality of rack teeth in registration with the opening in the bottom of said firing chamber, a plurality of tubes carried on the top face of the belt, a firing pin slidably mounted in the casing and entering the rear end of the firing chamber, the tubes on the belt being of the proper internal conformation to receive and carry cartridges, means normally projecting the firing pin into said firing chamber, means for advancing the belt through the firing chamber so that successive cartridges carried thereby may be brought in registration with the barrel, means conjoined with the said latter means for retracting the firing pin and releasing it at the time that the cartridge is in registration with the barrel, a grip member secured to the rear end of the casing, and a device for controlling the belt advancing means and the firing pin re-

tracting means, said device being positioned in the rear end of said grip member.

3. In a machine gun, the combination with a casing, of a firing chamber carried within the casing, a barrel having connection with the firing chamber and protruding through one end of the casing, the firing chamber having an opening on the bottom, the casing having openings on either side in communication with the firing chamber, a belt movable longitudinally through the firing chamber and being provided on its underface with a plurality of rack teeth in registration with the opening in the bottom of said firing chamber, a plurality of tubes carried on the top face of the belt, a firing pin slidably mounted in the casing and entering the rear end of the firing chamber, the tubes on the belt being of the proper internal conformation to receive and carry cartridges, means normally projecting the firing pin into said firing chamber, a gear meshing with the teeth of the belt, a finger carried by the firing pin, a wheel having cam teeth on one side which teeth are adapted to engage the pawl to retract the firing pin, a motor carried within the casing and having its shaft projecting and journaled in one end of the casing, the gear and the cam toothed wheel being carried on the shaft, a grip member attached to the casing, and a device carried in the grip member to control said motor.

In testimony whereof I affix my signature.
 LUIS M. McMANUS.