

(No Model.)

H. A. PITCHER.

MAGAZINE GUN.

No. 397,143.

Patented Feb. 5, 1889.

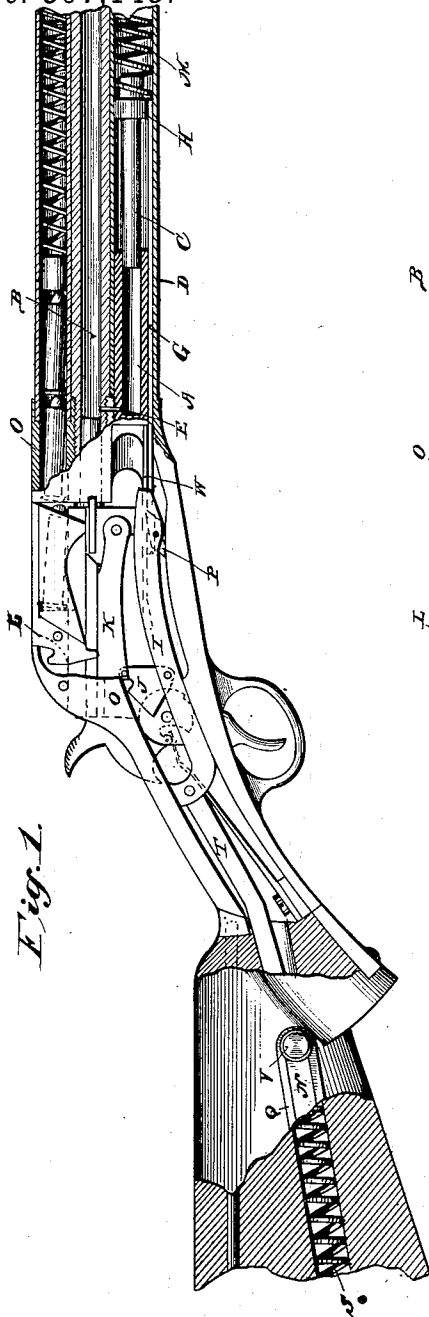


Fig. 1.

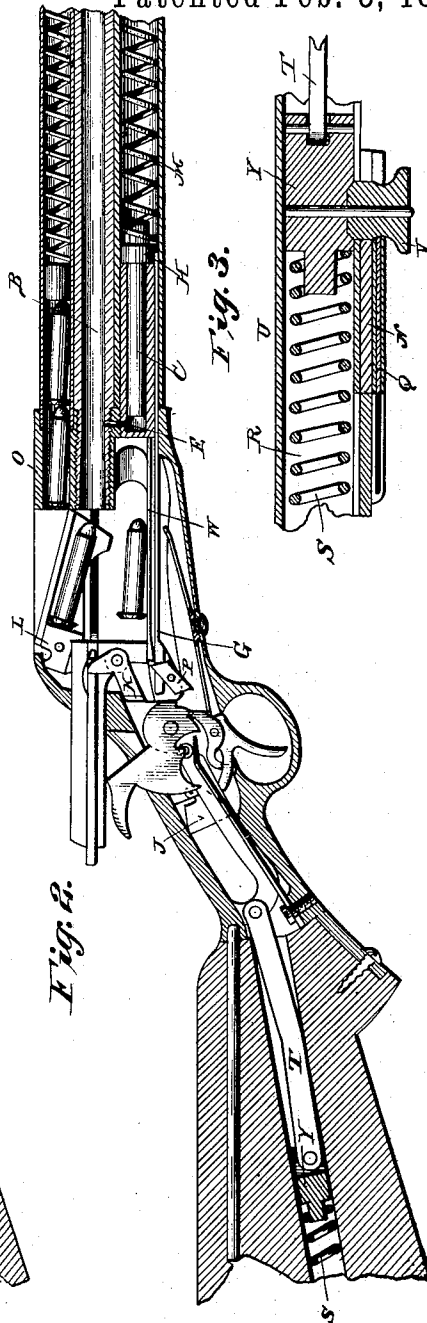


Fig. 2.

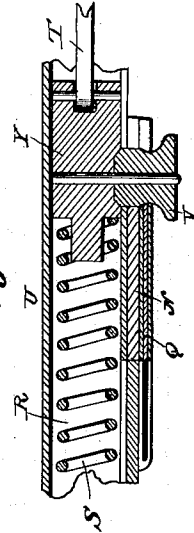


Fig. 3.

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MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 397,143, dated February 5, 1889.

Application filed April 21, 1887. Serial No. 235,714. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. PITCHER, a citizen of the United States, residing at Neillsville, in the county of Clark and State of Wisconsin, have invented a new and useful Improvement in Fire-Arms, of which the following is a specification.

My invention consists in a mechanical device suitable for attachment to and with the system of a magazine repeating-gun, making the gun automatic in loading at each discharge.

The form of gun is shown in drawings herewith, together with the attachment for which I desire to secure Letters Patent.

It is intended to increase the rapidity with which magazine-guns may be loaded and discharged without volition on the part of the shooter, except to pull the trigger, thus increasing the effectiveness of the arm, both as to number of shots in a given time as well as accuracy. Thus the gun may remain at the shoulder, the eye in the sights, and a moving object shot at while moving a given distance many more times than were the shooter required to work a lever or bolt at each discharge, and thus materially increase the chances of hitting. I accomplish this object of reloading the gun at each discharge by utilizing a portion of the explosive gas generated by combustion in the barrel of the gun in the following manner.

Figure 1 is a sectional view of gun closed at the instant after firing. It will be seen that the piston C of attachment, together with its head H and spring M, are thrown forward sufficient for the rod G to lock with and against the tumbler P, and through it perform the function of loading. The drawings represent the thickness of side plate of frame removed, the broken line through the front part of the frame showing the barrel, magazine, cylinder, and drive-spring tube in half-section. The piston C, head H, springs, follower, and cartridges are shaded round.

Fig. 2 shows a half-sectional view of working parts of gun and attachment with piston C, head H, and drive-rod G thrown back by spring M to their original position before firing. The piston C, head H, springs, follower, and cartridges are shaded round. The differ-

ent parts of the attachment and gun shown to illustrate the operation of the attachment, I have, for convenience, lettered and named as follows: O, frame of gun; B, barrel of gun; A, cylinder screwed into frame; C, piston in position within cylinder A; H, head or flange of piston; M, drive-spring; D, drive-spring tube; G, drive-rod connecting with head H; P, tumbler, which revolves in segment I, and against which drive-rod G locks; I, segment, which connects with link J, also with the connecting-rod T, which connects with S, a reciprocating spring in rear the stock; Y, follower connecting reciprocating spring S and connecting-rod T; U, rear stock in which recoil spring and follower are placed; Q, outside plate on stock in which cover and finger-knob work; V, finger-knob; N, cover-slide connected with finger-knob.

Fig. 3 is a longitudinal cross-sectional view of a portion of the stock of a gun, showing the spring S, follower Y, cover N, side plate Q, and finger-knob V.

Into the frame or receiver of the gun, and at the side of and parallel with the barrel, is screwed the cylindrical tube A. It is closed at the breech, and is of sufficient thickness to withstand the admitted force of explosion, and of sufficient length to correspond to the distance that the piston C and drive-rod G have to move to perform the first motion in loading—i. e., it is governed in a measure by the length of cartridge used.

Into the cylinder A, lengthwise, is fitted a movable rod or piston corresponding in size to the bore of the cylinder, and from the end nearest where the vent is admitted, to the flange or head H, it is somewhat shorter than the bore of the cylinder in which it is placed. At the outer end is a flange or head larger than the outside of the cylinder and small enough to move freely in a longitudinal direction within the drive-spring tube D. It will be observed by reference to the drawings that the piston C and its head H are not in a direct line—i. e., their centers do not correspond. I prefer this way of making it as admitting of more compactness with requisite strength than if the cylinder were grooved its entire length to receive the drive-rod G, as would necessarily be the case were the piston C in a

direct line with the head and interior of drive-spring tube D, or else the outside tube, D, would necessarily be larger by the thickness of drive-rod G.

5 Over both the cylinder A and piston-head H is fitted a thin tube, D, and attached firmly to the cylinder A. At its front end it is closed by a nut, and is of sufficient length to admit to its interior a sufficiently powerful spring to perform the function required of it. For lighter actions it may be entirely concealed within the "fore end" of stock; for heavier charges, longer.

15 The drive-spring M is an ordinary spiral spring of spring-steel of sufficient tensional force and elasticity to overcome, when placed at its extreme tension, the resistance of the gun mechanism and place the recoil spring at sufficient tension so that the rebound may throw the breech action to a closed position.

20 The reciprocating spring S is an ordinary spiral spring placed within a tube in the stock, and works against and with the follower Y; and it is connected with the connecting-rod T and through it to the mechanism of the gun. Its function is to close and lock the breech after the retracting force imparted to it by the spring M is removed.

30 In front of and centering within the front coils of the spring S is a follower, Y, slightly smaller than the tube in which it is placed, and attached to which, by a pivot passing horizontally at right angles through it, is the connecting-rod T. This rod T has a hole near its each extreme end to admit of attachment to the follower Y at one end and segment I at the other. It is slightly bent in a vertical direction in the middle, to admit of its working freely within the tube R when pressed to the rear to its fullest extent. The tube R within the stock is simply a metallic lining for a hole bored lengthwise through the stock. It has a slot corresponding to that in the stock in which the tenon on the button or finger-piece may move in a longitudinal direction, as required.

45 On the outside of the stock is screwed and fitted a metal plate of sufficient length and thickness to form a bearing for the finger-knob V and cover N. It has a slot through nearly its entire length, and with a groove in each side of the slot, in which is placed a thin piece of metal sufficiently long to form a cover to the slot in the stock when closed. At one end of this cover is formed a mortise. Through the mortise is fitted the neck or tenon of the finger-knob V. A heavy screw passes through the finger-knob V and into the follower Y, thus fastening together the follower Y, cover to slot N, and finger-knob V.

60 The drive-rod G is simply a flat rod attached to the head of the piston H. It passes backward outside of the cylinder and inside of the drive-spring tube, passing through a mortise in the frame made to receive it and connecting at its rear end, when carried for-

ward to its fullest extent, with tumbler P, as shown in drawings, Fig. 1.

The vent E is a small hole drilled from the interior of and through the cylinder A to and through that portion of the frame between the barrel and cylinder, to and through one side of the barrel of the gun, to a point within the barrel or bore of the gun close to the front end of cartridge-shell when in the chamber of the barrel, so that the vent shall be free and open from the interior of the barrel from a point corresponding to the front end of the chambered portion of the bore to the interior of the cylinder between the breech of the cylinder and end of the piston.

First, load the gun by grasping the button or knob on the right side of the stock and press to the rear until the breech-bolt is withdrawn and the carrier tilted. Release the hold and allow the spring S to force the cartridge into the barrel and the action to a closed and locked position, leaving the hammer at full-cock. Pull the trigger. At the instant of combustion a portion of the gas passes into and through the vent E and into the space in the cylinder at the rear of piston. The piston C, head H, and spring M are thrown forward until the drive-rod G, which is carried with them, may lock against the tumbler P. (See Fig. 1.) The tension of the spring M then reacts against the head of piston H, it against and with the drive-rod G, it against and with the tumbler P, it against and with the segment I, it through the link J to the breech-bolt and other mechanism of the gun, as also to the connecting-rod T, it to and with follower against the recoil-spring S in the stock. This is the first motion of loading. It will be observed that when the tumbler follows the friction-slide W to the end it will slide off, thus liberating the mechanism from the backward force of the spring-M.

Return motion: After the backward force of the spring M is removed, the spring S, through the follower and its connecting-rod T, forces the action to a closed and locked position, also presses home the cartridge, leaving the gun cocked for the next discharge requiring again but the one motion—viz., to pull the trigger—and so on, *ad infinitum*, as long as cartridges remain in the magazine. The exploded shell in the form of gun here shown is forced through a slot in the side of the frame made for that purpose.

I am aware that there have been springs placed within the stocks of guns to assist in loading the same, also within a tube parallel with the barrel, as in magazine-guns, for the same purpose; also that there have been cylinders, so called, placed upon the side of barrel, for the purpose of igniting the powder within, all of which are essentially different from those intimated in the foregoing. I, however, lay no claim to either of these constructions, or for any other purpose than that of loading the gun automatically after

firing. The two springs M and S, acting conjointly and alternately upon the working mechanism of the gun, thereby imparting the two necessary motions to load after the explosive force through the cylinder and piston has imparted to them the necessary power, are the essential features of this system.

I therefore claim—

1. The combination, with the lock mechanism, of the cylinder arranged under the barrel and having the vent communicating directly with the bore thereof, the piston in said cylinder in advance of the vent and connected to the lock mechanism, and the spring M, arranged in said cylinder and pressing rearward on the piston.

2. In a magazine fire-arm having the cylinder arranged under the barrel, and having the vent communicating directly with the bore of the barrel, the combination, with the lock mechanism, of the piston arranged in the cylinder in advance of the vent, the spring in said cylinder pressing rearward on the piston, the longitudinally-movable drive-rod G, attached to the piston and engaging with the tumbler P, which is pivotally attached to the segment I, and the link J, connecting the seg-

ment with the lock mechanism, substantially as set forth.

3. In a magazine fire-arm having the cylinder communicating with the bore of the barrel, the combination of the piston arranged in the cylinder, the drive-rod attached thereto, the tumbler engaging with said rod, the segment, the lock mechanism, the link connecting the latter to the segment, the spring-pressed connecting-rod attached to the segment, and the spring M, bearing rearward on the piston, substantially as described.

4. In a magazine fire-arm having the cylinder communicating with the bore of the barrel, the combination of the piston arranged in the cylinder, the spring M, pressing rearward on the piston, the drive-rod attached to the latter, the tumbler engaging with the drive-rod, the segment, the lock mechanism, the link connecting the latter to the segment, the follower, the spring S, pressing forward on the latter, and the rod connecting the follower to the segment, substantially as described.

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