(No Model.)

C. C. SMITH & T. B. STONE.

TOY PISTOL.

No. 523,870. Patented July 31, 1894.

Fig. 1.

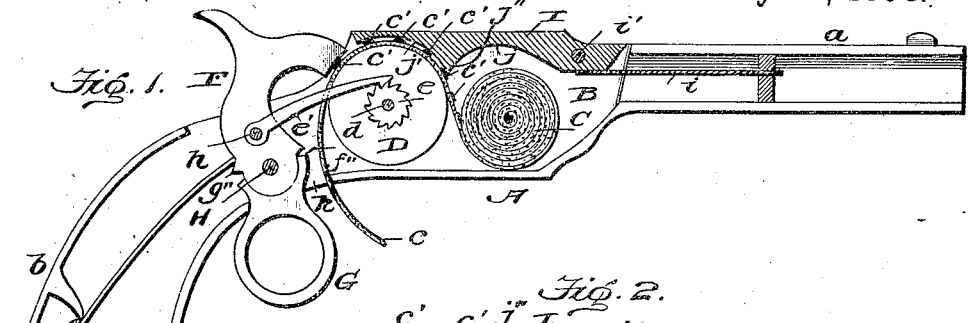


Fig. 2.

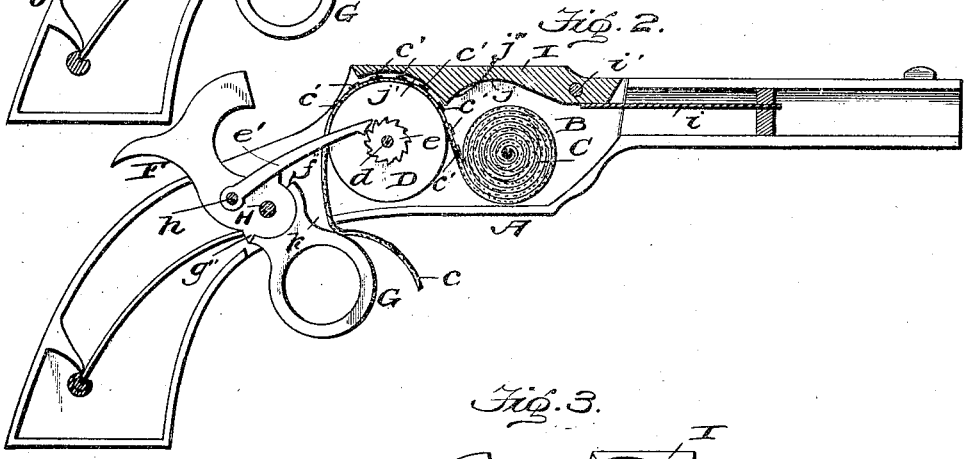


Fig. 3.

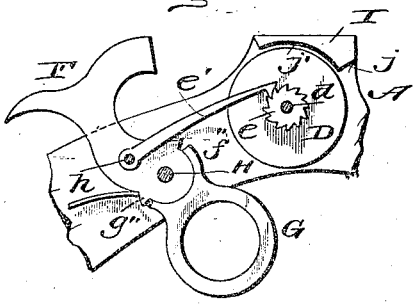
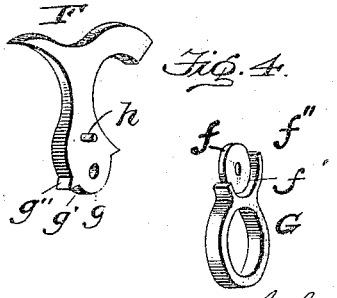


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLARENCE C. SMITH AND THOMAS B. STONE, OF CAMPTOWN, PENNSYLVANIA.

TOY PISTOL.

SPECIFICATION forming part of Letters Patent No. 523,870, dated July 31, 1894.

Application filed January 17, 1894. Serial No. 497,193. (No model.)

To all whom it may concern:

Be it known that we, CLARENCE C. SMITH and THOMAS B. STONE, citizens of the United States, residing at Camptown, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Toy Pistols; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The nature of the present invention is a continuous-fire toy pistol or gun, that is to say, a toy weapon in which the firing mechanism is so combined with an ammunition-supply that the act of cocking the firing mechanism, after it has exploded one of the charges, operates to bring a new charge into position below the hammer to be exploded on the next descent of the hammer, whereby it is only necessary for the operator to place the ammunition in the magazine of the weapon, cock the hammer, and pull the trigger in order to feed the charges into position beneath the hammer and to explode them.

The ammunition which we employ in our magazine toy weapon consists of a strip or film provided with spaced percussion charges, and with this ammunition strip is combined a feed mechanism which operates, as the hammer is cocked, to feed the strip or film a certain distance and bring a new charge thereon into position beneath the hammer, whereby the charges are successively exploded and automatically fed into position without requiring the operator to remove the exploded cap or charge and to place a new cap or charge in the weapon.

We prefer to provide the weapon with a magazine chamber in which a roll or bobbin of the ammunition strip or film may be conveniently placed and from which the strip or film is progressively drawn as the charges are successively exploded, and this magazine chamber is closed at its open side by a swinging plate or cap which serves to hold the roll of ammunition in place and to permit it to turn freely when the feed devices are operated.

In the present embodiment of our toy weapon the feed mechanism consists of a disk which is placed alongside of the roll of the ammunition to contact therewith, and with this feed-disk is combined a ratchet mechanism which is connected with the trigger or the hammer to be operated thereby each time the hammer descends or the trigger is pulled to rotate or feed the disk a certain distance, thereby imparting to the feed disk a progressive rotary motion, which disk in turn rotates the ammunition-roll to gradually feed the strip or film and bring the explosive charges thereon successively into position beneath the hammer.

The invention further consists in the novel combination of devices and in the peculiar construction and arrangement of parts which will be hereinafter fully described and pointed out in the claims.

We have illustrated one embodiment of our continuous-fire toy weapon in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a vertical sectional view taken longitudinally through a toy pistol, the hammer being depressed to explode one of the charges on the strip or film of ammunition. Fig. 2 is a similar view with the hammer raised and illustrating the position of the ammunition strip with a new charge thereof in position beneath the hammer to be exploded thereby when it descends. Fig. 3 is a detail view of one form of the feed mechanism which may be used to move the ammunition-strip, and Fig. 4 is a detail view of the construction of the hammer and trigger.

Liks letters of reference denote corresponding parts in all figures of the drawings.

A designates the toy weapon which may be embodied in the form of a pistol or a gun as may be most preferred, but in the drawings we have shown, as an embodiment of the invention, the pistol consisting of the barrel, *a*, and the stock, *b*.

The weapon is provided with a chamber, B, which constitutes the magazine in which the ammunition, C, is placed. This ammunition consists of a strip, or film, *c*, and a series of explosive charges, *c'*, spaced at suitable intervals along the length of the strip or film, *c*, preferably on one face or side thereof. The explosive charges, or "caps," may be of any

suitable fulminating material known to the art and which is sufficiently adhesive, when dry, to remain attached to the strip or film, *c*, the latter being composed preferably of paper, although any other suitable material may be used which will not be affected by the flash occasioned by the explosion of the charges, *c'*. This strip or film of ammunition is preferably coiled into the roll or bobbin, C, and the magazine is of such size that the roll will snugly fit therein and yet be capable of turning freely when the strip is drawn out of the magazine by the action of the feed mechanism thereon.

In the present instance the feed mechanism consists of a disk, D, which is situated in the rear of the roll of ammunition and the strip of ammunition is led over and in contact with the periphery of the feed disk so as to have sufficient frictional contact therewith to be fed or moved when the disk is turned on its axis. In the present example of the feed mechanism, the feed disk not only serves to feed the ammunition strip but also furnishes a solid bearing upon which the strip and its explosive charges, *c'*, may bear so that when the charges, *c'*, are brought beneath the hammer and the latter is depressed upon the charge, *c'*, the cap or charge will be properly exploded. This feed disk is provided with a smooth periphery and its face is of such width as to fit snugly in the chamber provided for the reception of the feed disk in the weapon. This disk, D, is journaled on a suitable pin or shaft, *d*, or the disk may be rigid with the shaft and the latter be journaled in the walls of the weapon. This feed disk has positive motion imparted thereto by connections with the hammer, and these connections contemplate the use of a ratchet wheel *e* which is fast to the disk to turn therewith and a feed pawl, *e'*, which is connected pivotally with the hammer at *h* and has its hook-shaped end arranged to engage with the teeth of the ratchet, see Fig. 3.

The hammer is indicated at F and the trigger at G in Figs. 1, 2, and 4 of the drawings. We prefer to cast the hammer and trigger in separate pieces, and to connect them together, at their inner ends, in a manner to enable the one to have a limited movement or play on the other, although this is not essential.

In Fig. 4 of the drawings, we have shown the hammer G as having the rounded end *g* and the curved recess *g'* in one side thereof, which rounded end terminates in the abrupt shoulders, *g''*; while the inner end of the trigger is similarly rounded, at *f*, has the recess *f'* in one side thereof, and provided with the shoulders *f''*. The rounded end of the hammer fits in a similarly rounded recess in the side of the trigger, and, similarly, the rounded end of the trigger fits in the rounded recess of the hammer when the parts are properly assembled, so that the shoulders, *g''*, and *f''* are brought into engagement to cause the hammer and trigger to operate together. The inner ends of the hammer and trigger may be united together by any suitable means, as for instance by the pin or shaft H which serves as the fulcrum therefor, and on the hammer is provided the pin, *h*, to which the feed pawl is pivotally connected, said pivot pin being on one side of the fulcrum pin or shaft H on which the hammer and trigger are pivoted.

The magazine B is closed at its top side, which opens through the barrel of the weapon, by means of the cap-plate I, and against the heel of this cap-plate bears a spring, *i*, which normally depresses the cap-plate over the ammunition-roll C to prevent displacement of said roll in the magazine chamber. This cap-plate, I, is hinged or pivoted at its heel to the rear end of the barrel *a*, by a pin, *i'*, and when it is closed over the magazine and the feed-disk, D, its outer edge lies flush with the barrel and top side of the weapon. The inner edge of this cap-plate is provided with the rounded or segmental recesses, *j*, *j'*, forming the prong or lip, *j''*; and when said cap-plate is closed, the segmental edge, *j'*, thereof fits closely to the feed-disk D but allows sufficient space between said disk and the edge, *j'*, for the strip *c* to pass while its other edge, *j*, fits over the roll of ammunition, C, to hold a fresh roll of ammunition in place when fitted in the magazine.

The percussion charges, *c'*, are spaced at such intervals apart, and the movement of the feed disk is such, that the strip or film *c* will be fed a proper distance each time the hammer is cocked to bring one of the charges onto the periphery of the wheel or disk D in proper position beneath the hammer to be exploded as it descends upon said charge and the periphery of the disk.

This being the construction of my continuous-fire toy-weapon, the operation may be described briefly as follows: The cap-plate is raised against the tension of its spring, a roll of ammunition is placed in the magazine and the free end thereof is brought around the circular face of the feed-disk and led through an opening, *k*, provided in the lower side of the weapon, and the cap-plate is again closed over the feed disk and the ammunition-roll to hold the latter in place within the magazine and to prevent the free protruding end of the strip *c* from being withdrawn from the hole, *k*, and interfering with the action of the hammer or trigger. As the hammer is drawn back or cocked, the feed-pawl *e'* is pulled back and operates the ratchet wheel to turn the disk and bring one of the percussion charges *c'* in the path of the hammer. As the trigger is pulled, and the hammer descends, the latter strikes the charge, *c'*, and explodes it As the hammer is again cocked, the feed pawl moves backward, to turn the disk through the ratchet, and again feed the strip *c* to bring another charge, *c'*, in the path of the hammer which, when depressed, explodes said charge, and these operations are

repeated over again until the charges on the ammunition strip is exhausted, when a new roll is placed in the magazine.

It is evident that minor changes in the form and proportion of parts and details of construction of the mechanism herein shown and described as an embodiment of our invention can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of our invention.

Having thus fully described and explained the nature of our invention and in what manner the same is to be performed we declare that what we claim as new, and desire to secure by Letters Patent, is—

1. A toy weapon provided with a magazine chamber having an open upper side and a cap-plate pivoted to the weapon to close said open side of the magazine-chamber, in combination with a coacting trigger and hammer, a feed-disk D journaled between the magazine chamber and trigger and provided with a solid peripheral anvil-surface in the path of the hammer and with a ratchet on one of its faces, the teeth of the ratchet being within the peripheral anvil surface of said feed disk, and a pawl between the hammer and said ratchet, substantially as described.

2. The combination of a magazine, a connected hammer and trigger, a feed disk situated between the magazine and the hammer and directly in the path of the hammer, and a pivoted cap or plate provided with the recesses to fit over the feed disk and the roll of ammunition in the magazine, substantially as and for the purposes described.

In testimony whereof we affix our signatures in presence of two witnesses.

CLARENCE C. SMITH.
THOMAS B. STONE.

Witnesses:
P. H. SUMNER,
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