

T. J. CRANMER.  
Self Loading Battery Gun.

2 Sheets—Sheet 1.

No. 74,994.

Patented March 3, 1868.

Fig. 1.

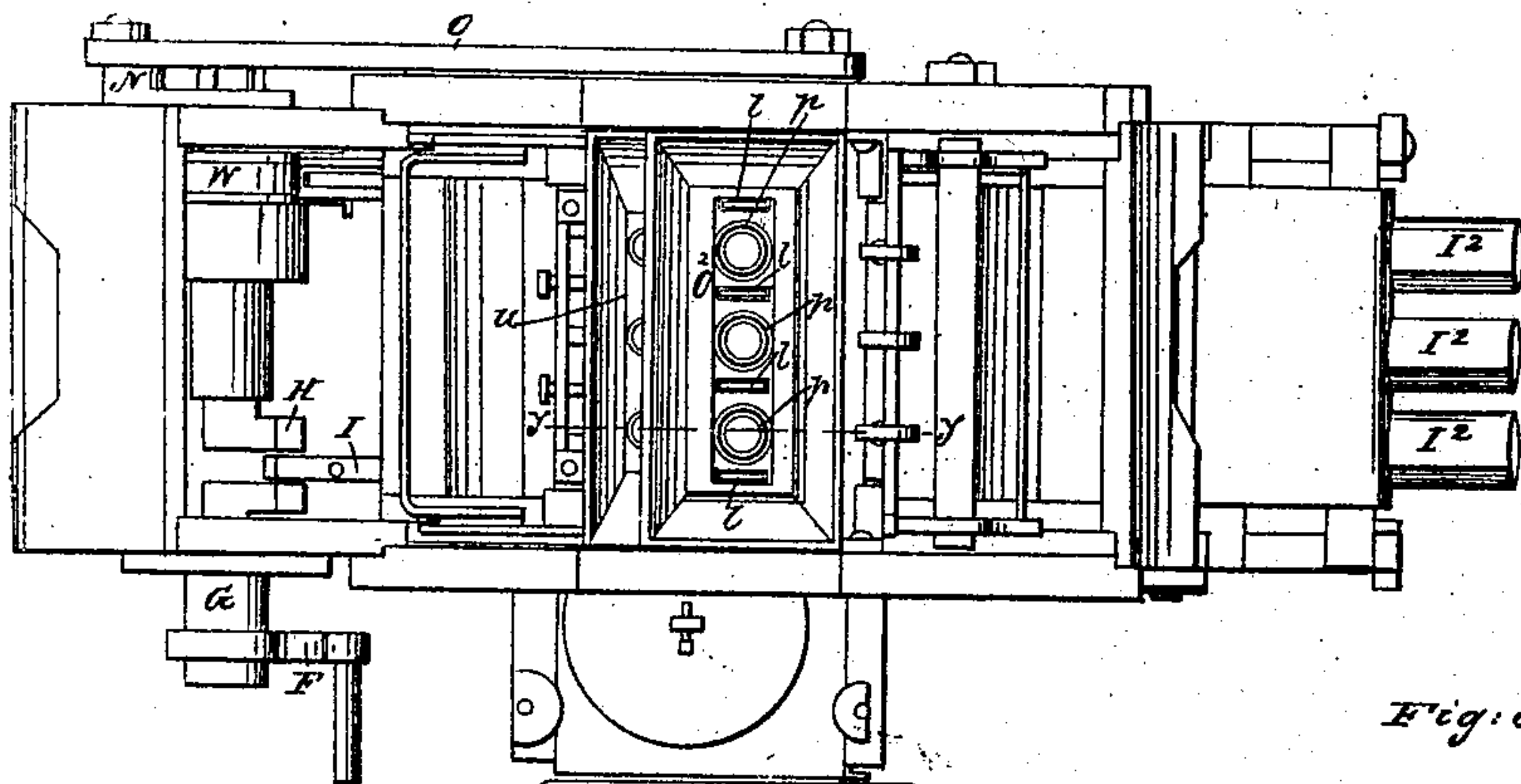


Fig. 3.

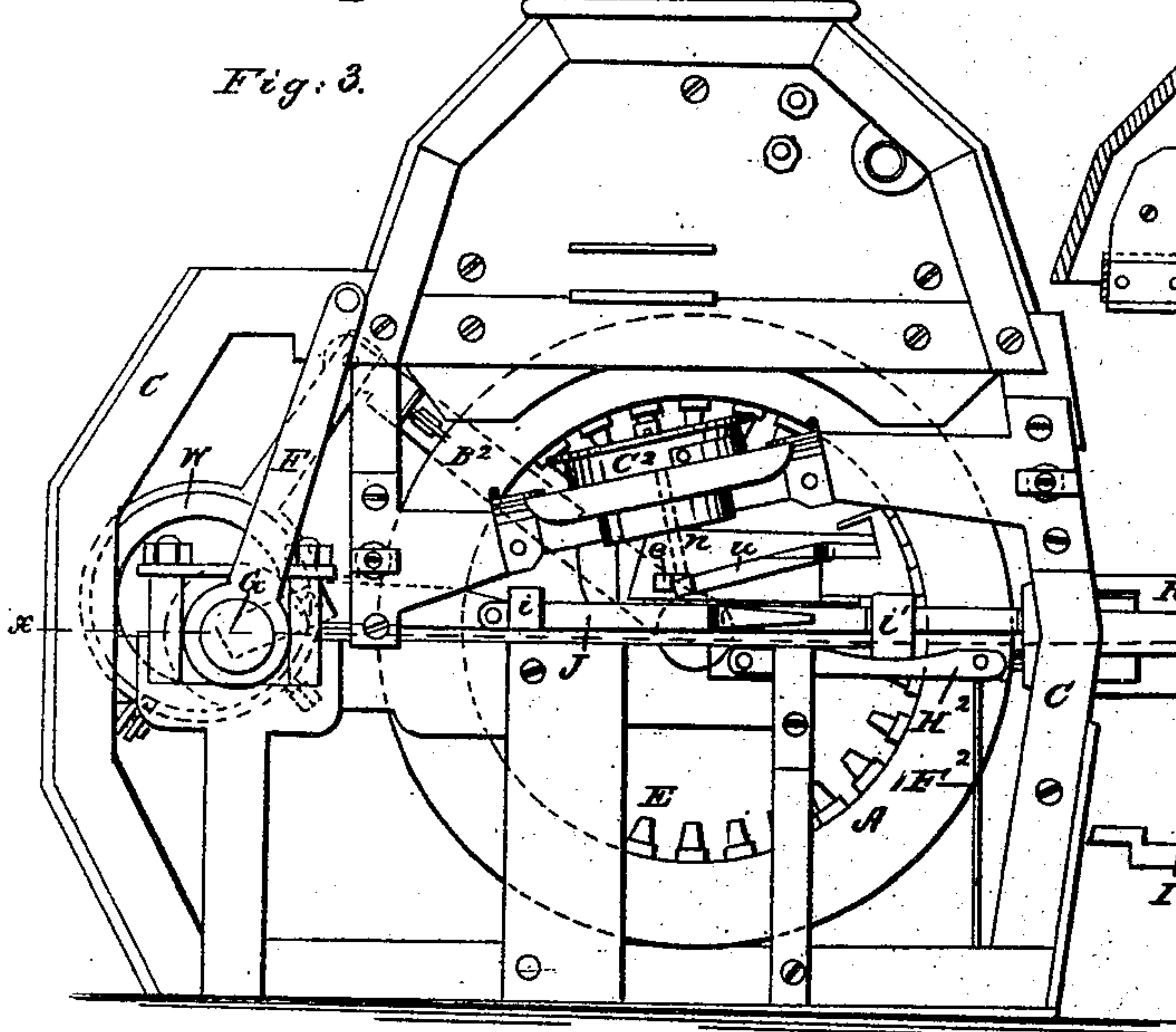


Fig. 5.

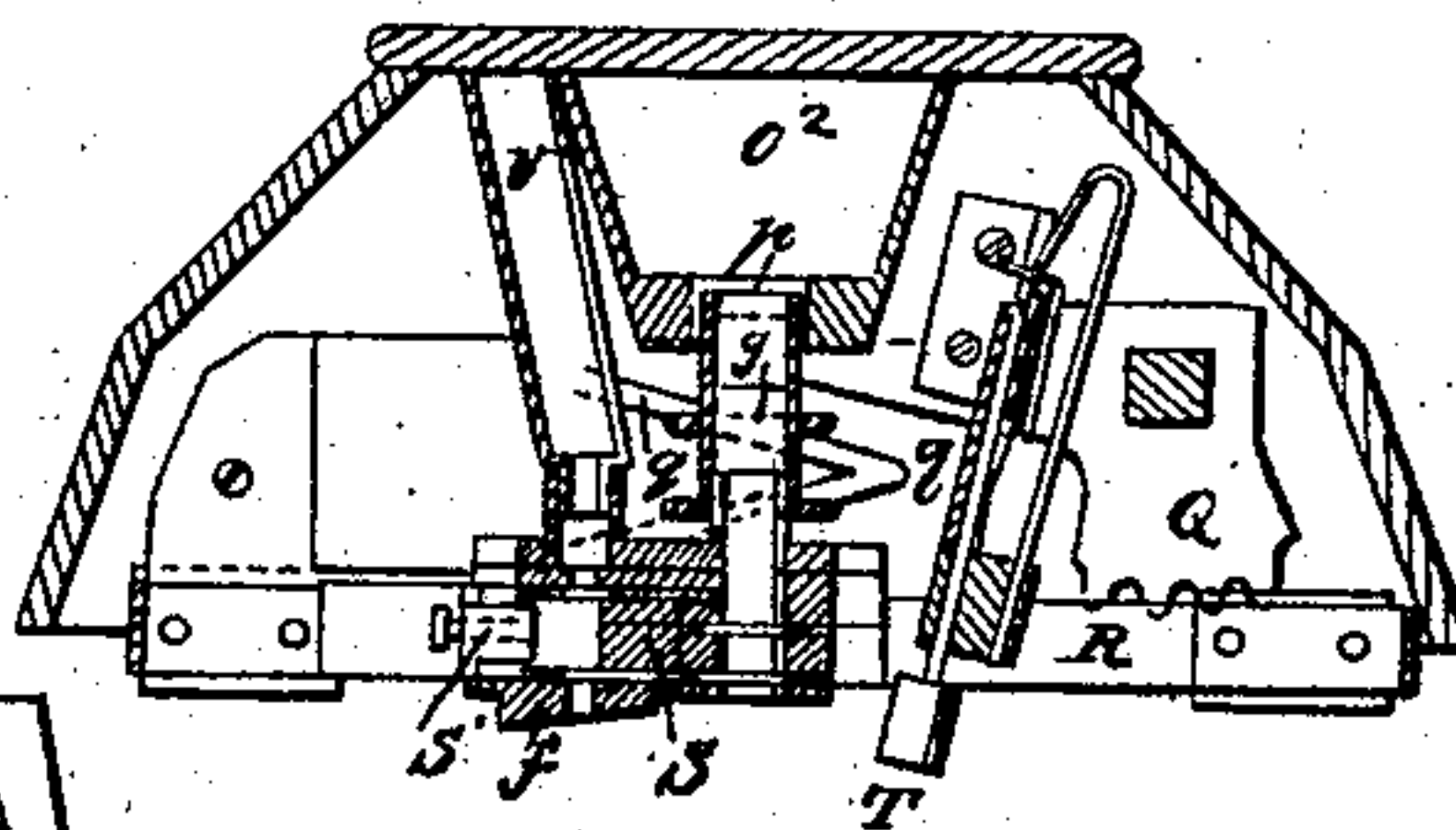
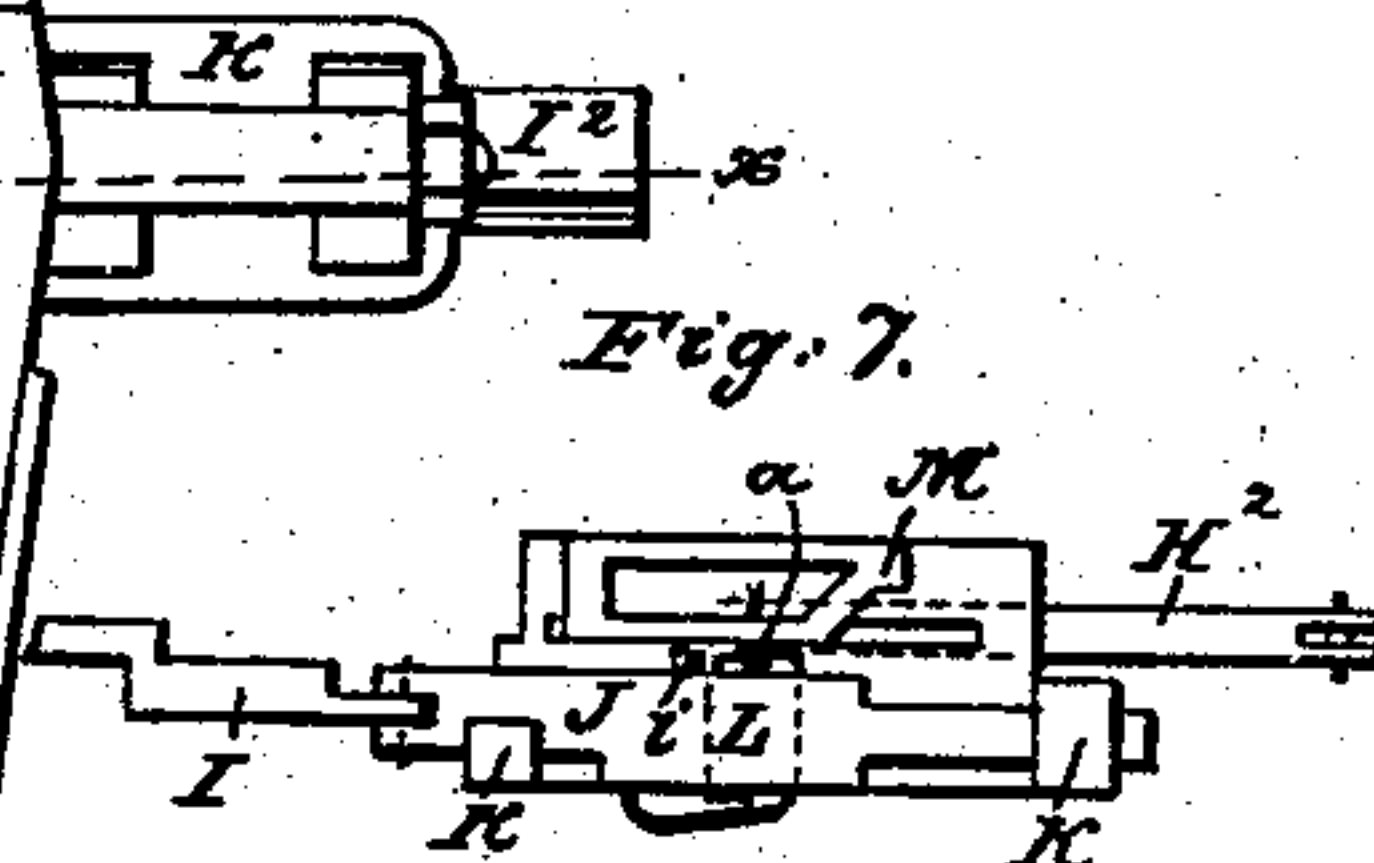


Fig. 7.



Witnesses:

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Inventor:

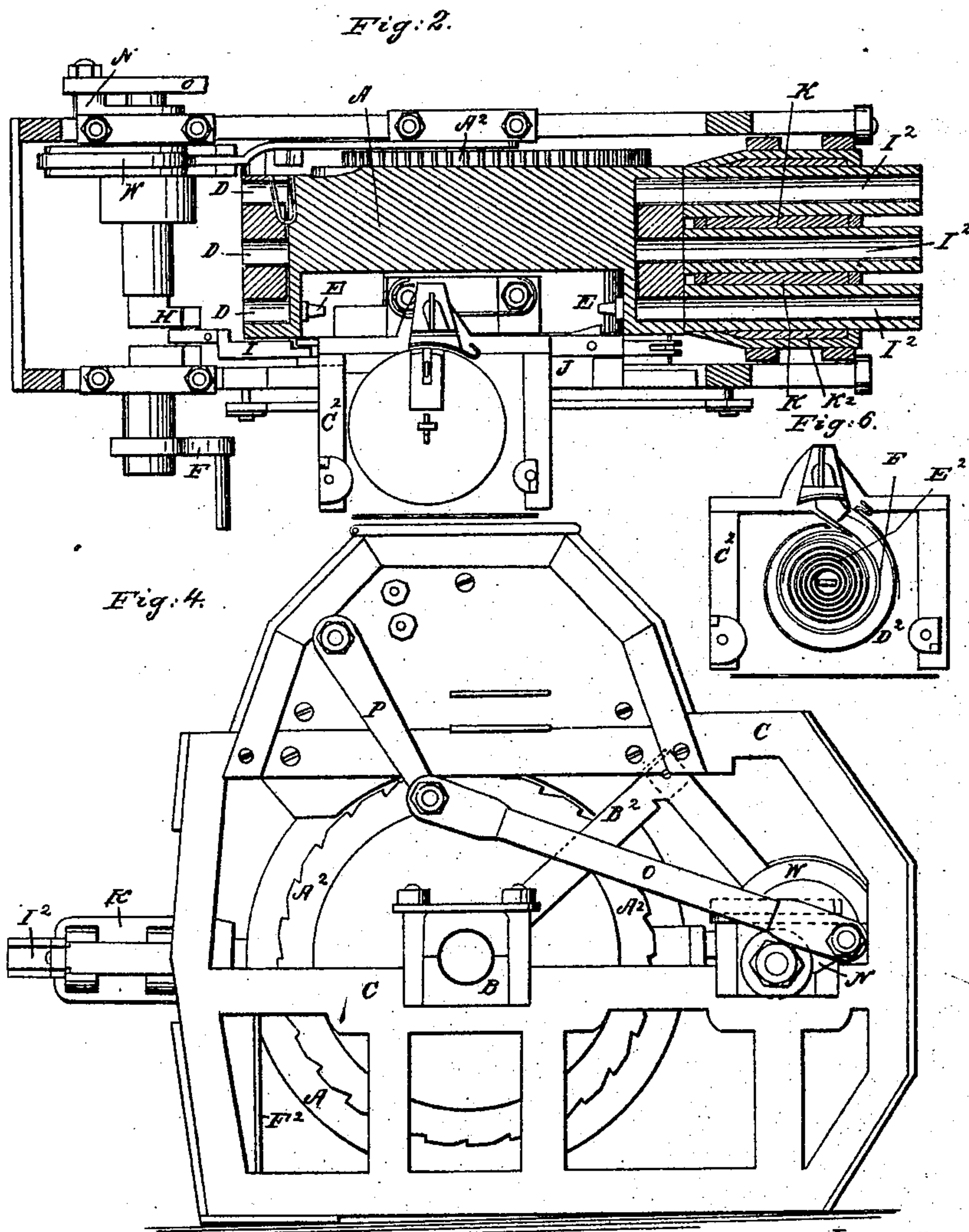
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# UNITED STATES PATENT OFFICE.

T. J. CRANMER, OF VALLICITA, CALIFORNIA.

## IMPROVEMENT IN SELF-LOADING BATTERY-GUNS.

Specification forming part of Letters Patent No. 74,991, dated March 3, 1868.

*To all whom it may concern:*

Be it known that I, T. J. CRANMER, of Vallicita, in the county of Calaveras and State of California, have invented a new and Improved Machine-Gun; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

The nature of this invention consists in the construction of a gun with any given number of chambers, from which the powder and ball are discharged from a cylinder and charged with loose ammunition, and is arranged in such a manner that it is loaded automatically by gravitation and discharges by volleys any number of single balls or cases of shot. It is constructed in such a manner that each volley can be discharged simultaneously by the explosion of one cap. The machinery of the gun is incased in steel plate and bullet-proof against small-arms, and rests upon a pivot, which enables the gunner to direct his fire with as much ease and precision as the most skillful can the small-arm. It is so constructed that it can be placed upon a carriage and drawn by horses from place to place. It is well adapted to fortifications in case of an attack by storm, or on board of vessels, or in any place, as it will discharge one hundred volleys per minute, and with unerring certainty. It is readily seen that it is one of the most destructive engines of war ever invented.

During the recent rebellion it was the great desideratum of the United States Government and inventors to devise and introduce the most destructive and economical fire-arm for the purpose of destroying and crippling the opposing armies. To this end various arms were tested, but proved of little or no utility, and were therefore abandoned, having failed to accomplish the object sought.

To enable others skilled in the art to make use my invention, I will proceed to describe its construction and operation.

Figure 1 is a top plan view of my improved machine-gun. Fig. 2 is a horizontal longitudinal plan view of the same from the line X X. Fig. 3 is a side elevation of the same. Fig. 4 is a side elevation taken from the side opposite from Fig. 3. Fig. 5 is a longitudinal vertical-sectional elevation of the cartridge maga-

zine or hopper from the line Y Y. Fig. 6 is a top plan view of the primer with the cover removed. Fig. 7 is a detailed or top plan view of the lock.

Letters of like name and kind refer to like parts in each of the figures.

A represents the cylinder of my machine-gun, which may be made of steel or other suitable metal and of any desired dimensions, provided with journals that turn in proper bearings B, that are rigidly secured to the frame or casing C, which is also made of iron or steel or other proper metal. This cylinder A is provided with any desired number of cartridge-chambers D, located radially around the center of the cylinder in rows of three or more or less chambers. The muzzle of each chamber is in the periphery of the cylinder, and each chamber extends to a depth sufficient to hold a charge of powder and ball. The chambers in each row connect with each other at the bottom, the nipple communicating with but one chamber in each row, so that each chamber will be fired simultaneous with the others in the same row of chambers.

E represents the nipples, one of which connects with each volley or line of chambers upon which the cap is placed when being fired.

F is the crank by which the gun is operated, and is secured to the end of the shaft G. Upon the shaft G is also another crank, H, to which is connected the pitman I, connecting with the bar J, said bar being held by and working by a regular reciprocating motion in the slides *i i*, Fig. 3, located upon the side of the frame C. The motion is caused by the revolutions of the crank H upon the shaft G.

In the bar J, and near its center, is dovetailed a dog, L, (shown in dotted lines, Fig. 7,) in the end of which is a notch that engages with a pintle, *a*, that is secured to the hammer M, so that when the bar J is moved forward the dog engages the pintle upon the hammer M, that is connected to the mainspring F<sup>2</sup> by a bar, H<sup>2</sup>, and when the bar J is drawn back the hammer is also drawn back until the dog L strikes the lug *i*, and is forced back and releases the hammer M, when by the action of the mainspring F<sup>2</sup> it flies forward and strikes the nipple E, upon which is the percussion cap, and the whole volley is fired.

N is also another crank secured to the shaft



G, that connects by a pitman, O, to the lever P, that is connected to a frame or segment, Q, that moves the frame or bars R longitudinally, and by means of lugs upon the bars R the slides S S in the bottom of the charger are moved laterally, and at the same time the charge of powder and ball is admitted to the cartridge-chambers in the cylinder, and the rammers T are forced down, and the charge ready to be discharged.

U is the powder-magazine, located upon the top of the hopper-frame C, which is filled with powder when designed to be used, and from which the cylinder A is charged.

O<sup>2</sup> is the hopper for the balls, also located upon the frame C and immediately before the powder-magazine.

W is a cam or eccentric, secured to the shaft G. To this eccentric is a rod that connects with the shaft of the cylinder A, and is employed for the purpose of moving the cylinder one notch in the ratchet-wheel A<sup>2</sup>, which brings the next set of cartridge-chambers in position to be fired.

C<sup>2</sup>, Fig. 6, is a device for holding a quantity of caps, and for placing the same on the nipples, and is composed of a box, D<sup>2</sup>, in which is a coiled spring, E<sup>2</sup>, with a scroll-space, F, upon the outside of the said spring and upon the inside of the said box, and is so arranged that one cap is placed at a time upon the nipple and forced to its place by a dog, n, which is forced upward by means of the lug e, working in the inclined slot u in the sliding bar J, Fig. 3.

F<sup>2</sup> is the mainspring, secured to the bottom of the frame C, and extends up in a vertical direction and connects with the hammer M by means of a connecting-bar, H<sup>2</sup>.

I<sup>2</sup> represents the barrels, made to precisely correspond with the chambers in the cylinder, and secured to a frame, K<sup>2</sup>, that is firmly secured to the frame C, the butts of which barrels join the cylinder on a line with its axis.

The operation is simple, rapid, and effective, and consists simply in placing a quantity of powder in the magazine U, and balls in the hopper O<sup>2</sup> and caps in the box or space F, (all loose ammunition.) Then by turning the crank F every part is put in motion. When the crank is turned forward to the center the dog L engages with the hammer, and is drawn back and is released by the lug i, Fig. 7, and the volley discharged. At this same time the slides S S in the bottom of the charger are opened, and a charge of powder and ball is allowed to pass into the chambers in the cylinder, when the slides are closed and the rammers T force or press the cartridge down, and at that instant the volley is discharged, and so on with powerful force and effect. Now, it will be understood that the charger is placed over the center of the cylinder, and the rod O, that connects the charger to the power-shaft G, oscillates or produces a reciprocating motion to the frame or sash that governs the slides S S of the charger. On the inside of the sash or frame R are four

wedges or inclined lugs, that move the slides laterally with the face of the cylinder in the forward part of the sash. The top forward lug on the side opposite from the crank and in the sash closes the top slide. The other lug on the same side, situated behind on the lower edge, immediately after opens the bottom slide in its backward motion. The bottom lug on the side of the driving-crank of the sash closes the bottom slide. The other lug, located forward and above, immediately after opens the top slide. The charge of powder may be increased or diminished at pleasure, as one wall, S', of each powder-chamber, Fig. 5, is adjustable by means of a set-screw, and by screwing it forward or backward the size of the chamber will be diminished or increased.

The cylinder has an alternate motion produced by the eccentric and rod or pawl B<sup>2</sup>. When it is in motion the bottom slide is closed and the top slide open. When at rest the top slide is closed and the bottom slide is open. By this means the charge is accurately measured between the slides in its passage from the magazine to the cylinder.

The barrels I<sup>2</sup> may be kept cool from rapid and excessive firing by filling the water-box or frame K, through which the barrels pass, with cold water.

Below the slides through which the powder has to pass into the powder-chambers is arranged a packing or block, f, which touches the cylinder A and prevents the powder in the charger and between the slides from coming in contact with any other parts of the machine, thus preventing the explosion of the powder in the charger and while being placed into the chambers. The balls pass into the chambers from the hopper O<sup>2</sup> through tubes p. These tubes consist of two pieces each, one sliding within the other. The upper piece is alternately raised and lowered by means of a lug, q, playing in a slanting slot, q', in an extension, r', of the bar R. Between the tubes p are also worked up and down, by a similar lug and slot, narrow plates t. The alternate up and down motion of these tubes and plates prevents the balls in the hopper from clogging, and facilitates their easy fall into the tubes, where they are received and their number as per charge regulated by the slides S.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The sash or frame R, provided with lugs for moving the slides S S, and constructed substantially as described, and for the purposes herein set forth.

2. The rock-shaft and frame Q, provided with teeth that move the sash or frame R, substantially as and for the purposes herein shown and described.

3. The construction of the lock for firing the volleys, consisting of the sliding bar J and dog L, with the lug a, hammer M, and spring F<sup>2</sup>, substantially as herein shown and described.



4. The device by which the caps are placed upon the nipples, consisting of a combination of the spring  $E^2$ , dog  $n$ , and lugs with the sliding bar  $S$ , substantially as herein shown and described.

5. The combination of the hopper  $O^2$  with the tubes  $p$  and plates  $t$ , lugs  $g$  and sash  $R$ , operating substantially as and for the purposes herein shown and described.

6. The construction and arrangement of the wall  $S'$  in each powder-chamber, adjusted laterally by means of the set-screws to regulate the charge of powder, substantially as and for the purpose specified.

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Witnesses:

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