

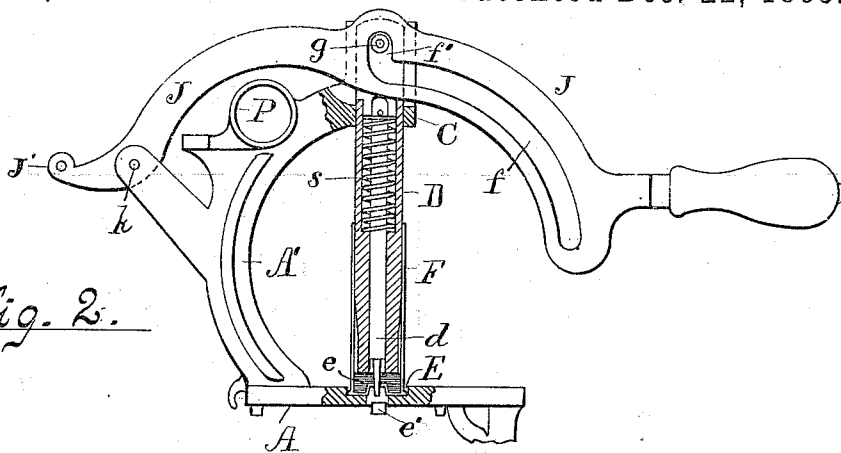
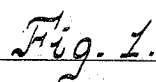
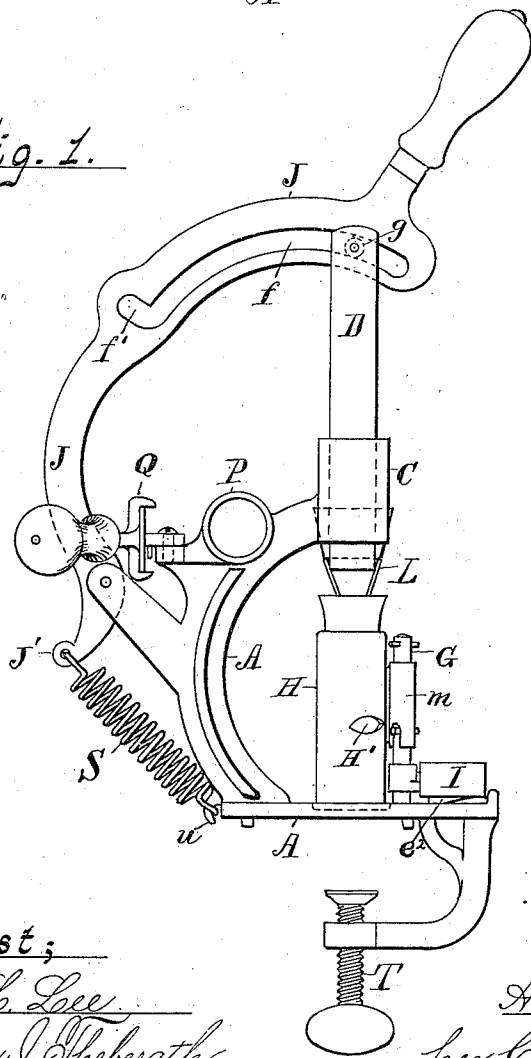
(No Model.)

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A. W. WHEATON.
CARTRIDGE LOADING MACHINE.

No. 332,767.

Patented Dec. 22, 1885.



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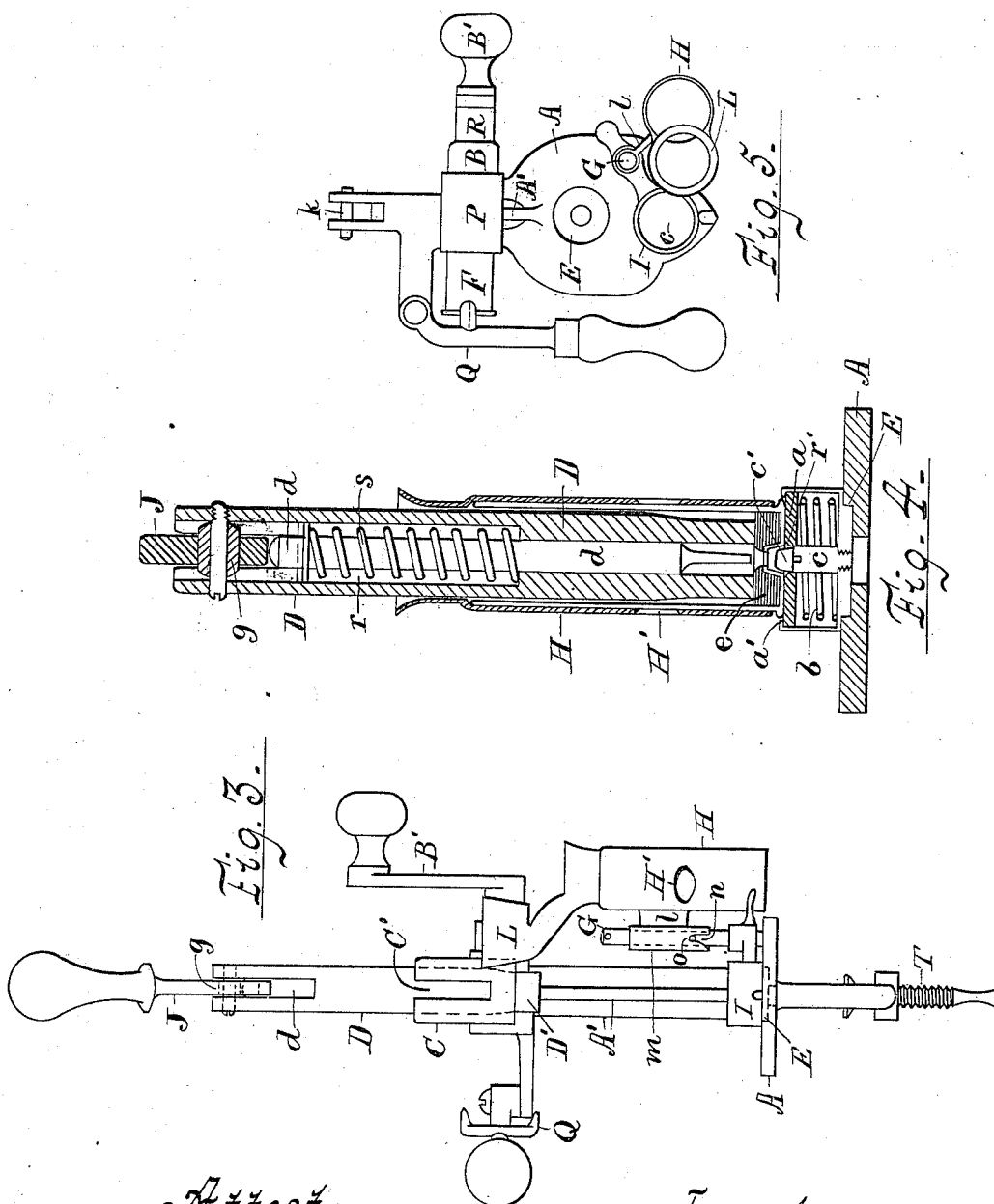
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UNITED STATES PATENT OFFICE.

ABRAM W. WHEATON, OF NEWARK, NEW JERSEY.

CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 332,767, dated December 22, 1885.

Application filed October 14, 1885. Serial No. 179,876. (No model.)

To all whom it may concern:

Be it known that I, ABRAM W. WHEATON, a citizen of the United States, residing in Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Cartridge-Loading Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention consists in certain improvements in the means for discharging the empty caps from the shells, the die for inserting new caps, and the construction and arrangement of the parts which co-operate therewith in filling a cartridge-shell.

In the drawings, Figure 1 is a side elevation of the machine with all the parts arranged to load or charge a cartridge. Fig. 2 is a side view of the bed and standard with the lever forced entirely down and the rammer represented in section and applied to a shell, also a section, the internal punch being projected through the bottom of the shell to discharge the cap. Fig. 3 is a front view of the machine with the punch not depressed and the setting-die beneath it. Fig. 4 is a transverse section at the center of the bed and die across the view in Fig. 3, with the case containing a shell in position on the die. Fig. 5 is a plan of the bed with the setting-die and case H in their inoperative position.

The frame consists of a bed, A, and a standard, A', to which are attached the reamer B and a guide, C, for the rammer D. Beneath the center of the guide C the bed is formed with a recess, E, to fit the head of the shell F, as shown in Fig. 2, and adjacent to the recess is a post, G, upon which are pivoted the shell-case H and the setting-die I. These parts are constructed to first remove an exploded cap from the shell, then to set a new cap upon the setting-die in the base of the shell, and to then apply the charge of powder and shot, and to ream the tip of the cartridge after the wad is inserted.

The rammer is actuated by a lever, J, pivoted at k upon the standard A', and formed with a slot, f, to fit a pin and roller, g, in the head of the rammer, and the point of the rammer is reduced in size at D', as is required to

clear the double thickness of pasteboard in the sides of paper shells near the bottom.

The rammer is provided with an automatic punch adapted to expel a spent cap from the shell, and the lever is so constructed as to actuate the punch only when the empty shell is set within the recess on the bed-plate A. At the inner end of the slot in the lever is formed a lateral notch, f', adapted to receive the roller g, and which permits the farther descent of the lever when the rammer is arrested by contact with the pasteboard e in the bottom of the shell, as shown in Fig. 2.

The rammer is perforated centrally to receive a movable punch, d, the head of which is held in constant contact with the under side of the lever by a spring, s, located in a recess, r, within the head of the rammer, and the point of which is concealed in the point of the rammer, except when the roller g falls into the notch f', at which time the lever is able to move independently of the rammer and to force the punch beyond its point. To discharge a spent cap from a shell, the latter is therefore set in the recess E, as shown in Fig. 2, and the lever moved downward its full extent, as shown in Fig. 2, to force the cap e' out of the shell. The new cap may then be set in the hole from which the old one was discharged by placing the cap on the die I and forcing the shell down upon it with the end of the rammer. During this operation the punch is not projected below the point of the rammer, as the thickness of the die produces a contact between the end of the rammer and the bottom of the shell before the lever is pressed entirely down.

The setting-die is formed below with a hub, e', to fit the recess E, and upon its top with a yielding plate, a, supported upon a spring, b, which presses the plate upward against a narrow flange, a', turned inward around the top edge of the seat. The plate is formed with a central recess, r', tapered inwardly to receive the cap and guide it to the center of the shell, and the bottom of the recess is formed by the head of a stud, c, which is affixed to the bottom of the die.

When the cartridge is placed upon the cap e' just over the stud c, the cap will be rigidly sustained, while the shell may be forced down-

ward with the plate α by the depression of the rammer D. When the cap is set in the shell, the setting-die is swung away from the recess E and rests upon the front of the bed A during the charging of the cartridge-shell, the hub e^2 being beveled upon its front side, as shown in Fig. 1, so as to rise automatically from the recess E when moved forward to its inoperative position. (Shown in Fig. 5.)

When the cap is secured in the shell, the latter is ready for charging, and may be inserted in the case H from the bottom, and the case then swung upon the post G to set the shell in the recess E. A chute, L, is attached to the top of the case at one side to apply the powder and shot conveniently to the case, and the rammer is used to force the charge down and to press the wad on top of the charge.

When the shell is filled, the case is slightly lifted, to disengage the cartridge from the recess E, and the case is then swung toward the side of the bed, where the shell is readily removed. The shell sometimes slips in the case H, so that the lifting of the case fails to dislodge it from the recess, and to disengage the shell from the recess at such time I provide the opposite sides of the case with apertures H', to which the finger and thumb may be applied to press directly upon the shell and lift it with the case, so that the latter may be swung toward the side of the bed, as shown in Fig. 5, for the removal of the completed cartridge. To hold the case in this inoperative position, its arm l is fitted to the post G by means of a hub, m , having a notch, n , which latter rests upon a pin, o , in the side of the post, and is beveled at one side, so as to automatically lift the arm to free the notch from the pin when the case is turned toward the recess E. A notch is also made at the opposite side of the hub m to permit the case to drop when over the recess to fit the shell thereto. When the shell is removed from the case, it is applied to the socket P before the reamer B, and pressed toward the latter by a hand-lever, Q. The socket, as well as the bearing R, in which the reamer rotates, is attached to the standard A' just before the lever-pivot k , so as to be within convenient reach of the operator, with the crank B', for turning the reamer, projecting at one side of the standard A', and the lever Q projecting upon its opposite side. The lever Q is shown turned back in Fig. 1, to easily insert the shell in the socket P, and the lever J is shown elevated in the same figure by the action of a spiral spring, S, attached to an eye, J', at the rear end of the lever, and fastened to a hook, u , upon the base of the standard. The bed is also shown provided with a clamp-screw, T, by which the machine is readily attached to a bench or table for use.

By means of the attachments described herein it will be seen that the machine is thoroughly adapted to perform the entire operation of refilling the cartridge-shell, and that the projection of the punch d from the

rammer is rendered entirely automatic by the use of a setting-die, which elevates the shell somewhat above the bed when inserting the new cap therein, and thus limiting the descent of the rammer and lever to such a point that the roller g cannot engage with the notch f' , and thus permit the lever to actuate the punch. When charging the cartridge-shell, it is of course placed in the recess I; but the descent of the rammer is then limited in like manner by the powder or shot within the shell, and the retention of the punch within the rammer is thus automatically effected in every case, except when the empty shell is seated within the recess and the punch depressed to its fullest extent, so that the roller travels to the extreme end of the slot f and enters the notch f' . A notch, C', is formed in the upper side of the guide C, to admit the lever J when thus depressed, and a long guide may thus be used to steady the rammer under the lateral pressure partly exerted by the lever upon the roller without increasing the height of the whole machine a corresponding amount.

Having thus set forth the nature of my improvement, what I claim herein is—

1. In a cartridge-loader, the combination, with a bed, a movable setting-die, and a rammer movable to and from the bed and die, as described, of a punch movable within the rammer and normally held within the point of the latter, and a lever for pressing the rammer downward and constructed and operated to project the punch from within the rammer at the end of its stroke, substantially as and for the purpose set forth.

2. In a cartridge-loader, the combination, with a bed and a movable setting-die, of a rammer movable to and from the bed and die, a lever provided with a slot and fitted to a roller in the head of the rammer, as described, a notch in the end of the slot to admit the roller, and a punch movable within the rammer, in contact with the under side of the lever, and actuated by the lever when the notch drops over the roller, substantially as herein set forth.

3. In a cartridge-loader having a rammer vertically movable in a guide over a bed, as described, the means for operating the rammer, consisting in the combination, with the bed A and standard A', of the guide C, the rammer D, fitted thereto to move to and from the bed, and having the roller G, pivoted in its upper end, and the lever J, pivoted upon the standard, and provided with a slot, f , adapted to fit the roller, the lever being arranged with the slot embracing the roller and operated to move the rammer up and down in the guide, substantially as and for the purpose set forth.

4. In a cartridge-loader, the combination, with a bed and a rammer movable to and from the same, of the setting-die I, constructed with the central stud, c , and the yielding plate α , and adapted to sustain the cap before and

during its setting in the cartridge, substantially as herein set forth.

5 5. In a cartridge-loader, the combination, with the bed A, having recess E and a rammer mounted over said recess, of a setting-die pivoted to the post G, and constructed with hub *e'* to fit said recess, the hub being beveled at one edge to rise automatically in sliding from the recess, substantially as herein described.

10 6. In a cartridge-loader, the combination, with the bed A, having recess E, and the shell-case H, pivoted upon the post G adjacent to the recess, of one or more openings, H', in the sides of the case for grasping the shell, as and for the purpose set forth.

15 7. The combination, with the bed A, the standard A', guide C, rammer D, and lever J, of the recess E, formed in the bed beneath the rammer, the post G, affixed to the bed at one side of the recess, the setting-die I, pivoted to the post and adapted to drop into the recess when moved over the same, and the case H, pivoted upon the post above the setting-die,

and provided at its hub *m* with a notch, *n*, fitted to a pin, *o*, upon the side of the post, to hold the case in its inoperative position, the whole arranged and operated substantially as herein set forth.

8. The means for admitting a movement of the rammer-lever below the top of the rammer-guide, consisting in the combination, with the bed A, standard A', and guide C, of the lever J, slotted as described, the rammer having roller *g*, pivoted in its upper end, as described, the lever pivoted upon the standard and arranged with its slot embracing the roller, and the guide provided with the notch C' in its top in a line with the lever, the whole arranged and operated substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ABRAM W. WHEATON.

Witnesses:

THOS. S. CRANE,
L. LEE.