(No Model.) 2 Sheets—Sheet 1.

L. R. SMITH.

CARTRIDGE FILLER.

No. 492,171. Patented Feb. 21, 1893.

Fig. 1

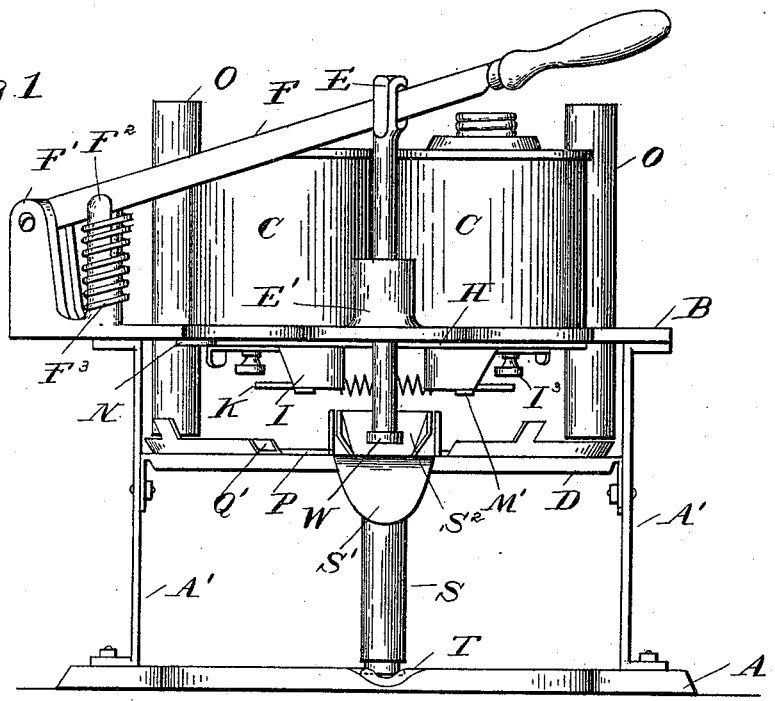

Fig. 2.

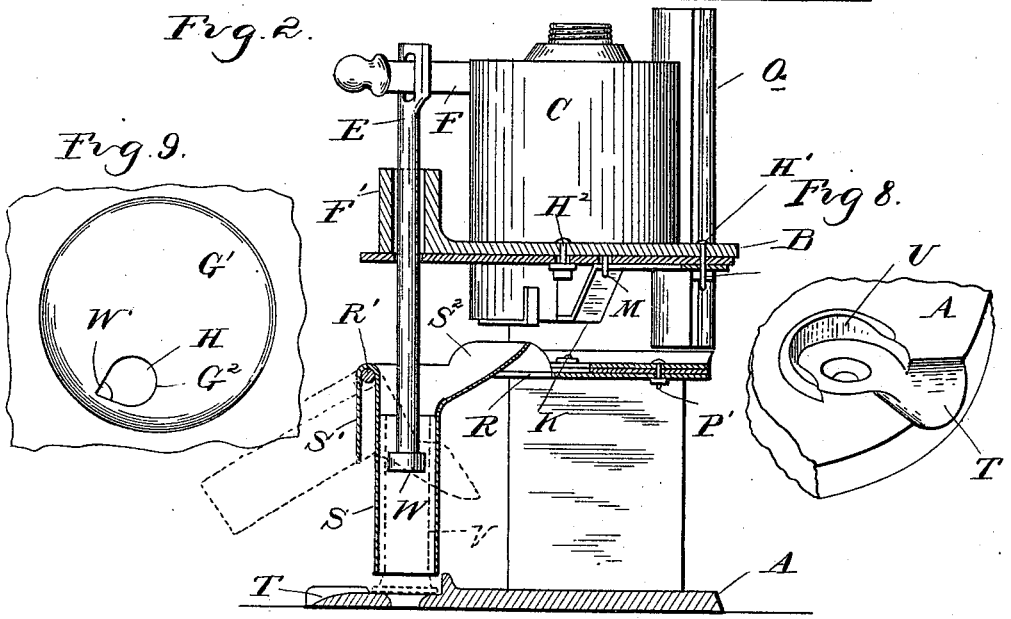

Fig. 9.

Fig 8.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

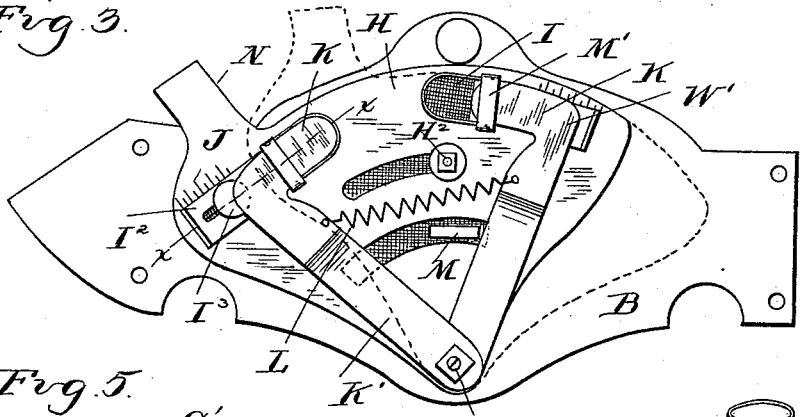


Fig. 5.

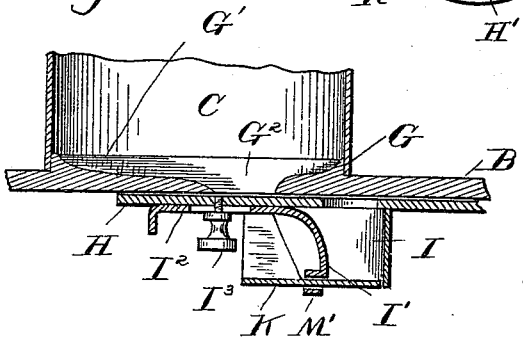


Fig. 7.

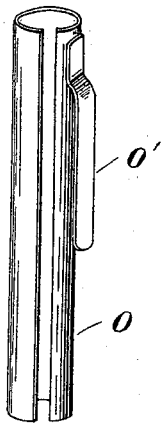


Fig. 4.

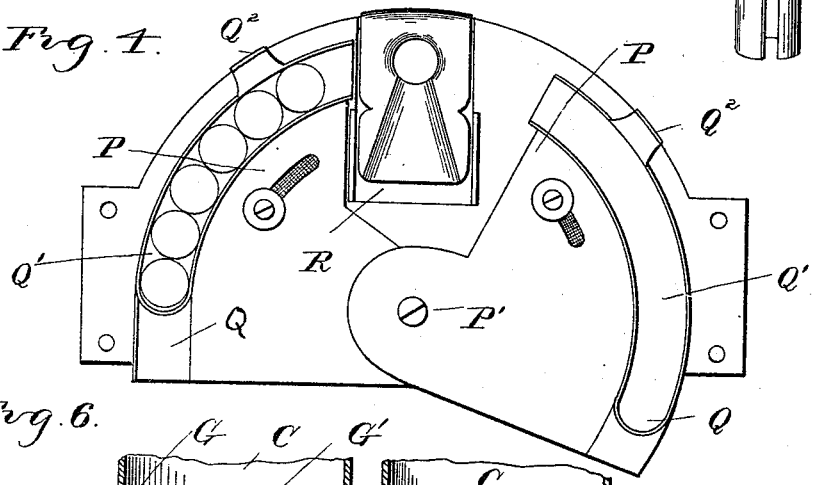
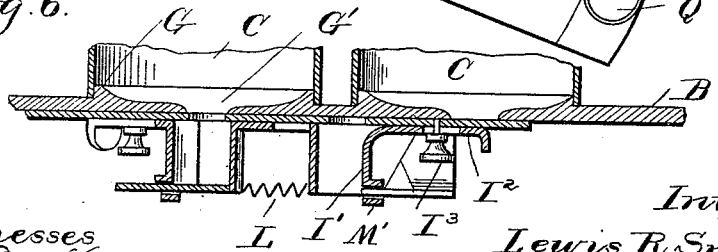


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEWIS R. SMITH, OF PORTLAND, MICHIGAN.

CARTRIDGE-FILLER.

SPECIFICATION forming part of Letters Patent No. 492,171, dated February 21, 1893.

Application filed June 6, 1892. Serial No. 435,720. (No model.)

To all whom it may concern:

Be it known that I, LEWIS R. SMITH, a citizen of the United States, residing at Portland, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in Cartridge-Fillers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in cartridge loading machines, and the invention belongs to that class of machines designed to load the ordinary gun shells with powder and shot.

The invention consists in the peculiar construction of the cartridge holder, the reciprocating chargers for carrying the powder and shot to the cartridge holder, the wad receptacles and the feed mechanism for feeding the wad to the cartridge holder, and further in the peculiar construction, arrangement and combination of the various parts.

In the drawings, Figure 1 is a front elevation of my improved machine. Fig. 2 is a vertical, central section thereof. Fig. 3 is a bottom plan view of the magazine supporting table. Fig. 4 is a top plan view of the wad table. Fig. 5 is an enlarged detail section through the base of a magazine charge plate and charge receptacle. Fig. 6 is a vertical central section through the magazines and the magazine supporting table and chargers. Fig. 7 is a perspective view of one of the wad holders. Figs. 8 and 9 are detail views showing respectively the locking device for shell holder and shot cut-off.

A is the base.

A′ are standards.

B is the top supporting the magazines C and forming what I shall call the magazine supporting table.

D is a shelf between the base and the top forming what I shall call the wad shelf.

E is the rammer slidingly secured in a guide E′ formed at the front of the top.

F is the operating lever for the rammer pivoted in ears or lugs F′ at the edge of the top guided in the bifurcated standard F^2 and normally held in its raised position by means of the spring F^3 encircling said standard.

The magazines are preferably secured in position by engaging over the annular flanges G formed on the top and are provided with any suitable filling nozzle. Within this flange is formed the concave basin G′ having a delivery aperture G^2 at one edge. To the under side of the top of the magazine supporting table is secured the charger plate H pivoted upon the pivot H′ at the rear edge thereof, the forward edge being supported by the bolt H^2 passing through a slot in the plate, holding the plate against the under side of the top. This plate at each side is provided with the two chargers or charge receptacles I. Three sides of these respectively are preferably formed by a downward extending flange secured to or formed integral with the charger plate arranged in substantially yoke shape. The fourth vertical side is formed by the wall I′ having the arm I^2 extending parallel with the plate and adjustably secured thereto by means of the set screw I^3, a suitable gage J being provided on the underside of the charger plate, so that the exact size of the charge may be determined in adjusting the wall I′. Above this charge receptacle the charger plate is apertured to correspond with the feed passage from the receptacles through the top B. The bottom of this charge receptacle is formed by the plates or valves K, one for each receptacle and each plate K being provided with an arm K′ extending to the rear of the machine and pivoted upon the pivot H′. The arms of these two plates are connected together by the spring L which by its tension acts to hold the plates together to close the bottom of the charge receptacles when said receptacles are in their normal or central position.

M is a stop preferably formed on the underside of the top between the two arms K′ of the plates. The plates K are preferably guided by means of the stirrup M′ on the under side of the charge receptacles.

N is an arm or finger projecting from the forward edge of the charger plate, by means of which it may be turned upon its pivot.

O are wad receptacles secured to the rear of the machine and preferably secured to the powder and shot magazines, by means of the tongues O′ engaging into a socket on the rear of such receptacles.

Upon the wad shelf D are pivoted the wad feeding arms P both being pivoted upon the common pivot P′ and extending on opposite

sides of the machine. Rigidly secured on the outer ends of arms P, are the guide ways or troughs Q′ which project slightly above the upper faces of the arms and beyond the forward edges thereof. They are so secured as to be moved only by the movement of the arms which carry the same. The side walls of these guide-ways terminate in a curved rear wall Q, forming a cut-off which is integral with the side walls, and occupies a position directly below the wad receptacles when the arms are rocked forward. These guide ways are preferably provided with fingers Q^2, by means of which the arms may be rocked upon their pivot. The wad shelf is centrally provided with a well R across the front edge of which is arranged the cross-bar R′.

In feeding the wads the operator forces the last one deposited, forward, moving the foremost from the way and into the shell holder, thereby leaving an unoccupied space directly in front of the cut-off Q. The arm is then moved back carrying the cut-off beyond the wad holder and a wad immediately falls into the unoccupied space. The cut-off prevents the wads from the holder from falling out when the arm is forced forward. S is a shell holder having a hook S′ adapted to engage over this cross-bar and a hopper S^2 extending rearwardly in the well R and beneath the path of the charge receptacles. The hopper S^2 acts as a counter weight to normally hold the shell holder in a forward inclined position, as shown in Fig. 2 in dotted lines, in which position the shell may be readily inserted at the lower end thereof. When this is done the operator rocks the shell holder on its pivot which will first strike the inclined guide way T at the front of the machine which leads into the ring shaped socket U formed in the upper face of the base of the machine and into which the shell and shell holder will fall by gravity, it having been slightly elevated off its pivot, in moving up the incline, and the bottom of the shell will lock the shell holder against lateral movement in any direction. The operator then taking hold of the finger N rocks the charger plate upon its pivot until the aperture in the charge receptacle registers with the aperture through the plate beneath the powder magazine, when the powder will fill the charge receptacle (the size of the charge having been carefully graduated by the adjustable wall I′) the operator then carries the charger plate toward the front until it reaches the limit of its movement, in which position it will be directly over the hopper S^2 of the shell holder. Before it has reached this position, the arm K′ of the valve K will strike the stop M and be arrested from further motion, the charge receptacle continuing its motion, the valve will be withdrawn and will open the bottom thereof, allow the powder to fall into the hopper and run into the shell V in the shell holder. The imperforate portion of the charger will cut off and maintain in a closed condition the aperture from the magazine during this movement. When in this position the other charger will moved beneath the shot receptacle and will be filled with shot. The operator now releases his hold of the finger N, and the charger plate will be returned by the tension of the spring L to its normal or middle position. By rocking one of the arms P upon its pivot a wad will be withdrawn and cut off from the lower end of the wad receptacle, which being placed in the top of the shell holder can be rammed down by depressing the lever F which will force the wad rammer E into the shell. When the operator releases his hold from the lever F, the spring F^3 will raise it to its upper position, as shown in Fig. 1, the operator then taking hold of the finger N carries the charger plate to the other side opening the valve K of the shot charge receptacle, dropping the shot into the shell. Placing another wad in position and ramming it down the shell will be loaded. By slightly raising the shell and shell holder it will be rocked to its forward inclined position, or may be moved to that position and the shell withdrawn and a new one inserted. If the guide way Q′ on the wad arm P is filled with wads, as shown in Fig. 4, each movement of the wad arm on plate will feed a wad in the shell.

I preferably make the wad rammer E of slightly smaller diameter than the smallest shell which I desire to load and at the lower end thereof, I secure a detachable ring or button W which may be removed and replaced with any desired size to accurately fill any desired gage of shell which it is desired to load. The opening in the bottom of the shot magazine I preferably make with a tapering point W′, toward which the cut-off acts and this prevents liability of clogging in the action of the cut off as would be the case if I simply used a round opening as for the powder.

What I claim is—

1. In a cartridge loading machine the combination of the magazines at opposite sides thereof, a plate pivoted below the same, charge receptacles thereon having apertures adapted to connect alternately with each of the magazines horizontally movable valves for the bottom of the receptacles adapted to be alternately opened to discharge the contents of said receptacles, and a spring uniting the valves substantially as described.

2. In a cartridge loading machine, the combination of the frame, the magazine supporting table, the magazine thereon, a plate pivoted below said table, charge receptacles formed at opposite sides of said plates having apertures adapted to communicate with the apertures through the table, valves for the bottom of said charge receptacles, a spring connecting said valves and acting with its tension to hold them normally closed and a stop in the path of said valves adapted to alternately open the same when the table is rocked, substantially as described.

3. In a cartridge loading machine, the com-

bination with a table, the magazines, the charger plate, the charge receptacles thereon, the valves K for the bottom of said receptacles, the arms K′ secured to said valves and pivoted on a common pivot at the rear of the machine, the spring L connecting said arms and the stop M between said arms extending on both sides of the center, substantially as described.

4. In a cartridge loading machine, the combination with the frame, the magazines, the charger plate, the charge receptacles thereon, a horizontally adjustable side wall for such charger plate, and spring actuated cut off plates for the receptacle, substantially as described.

5. In a cartridge loading machine, the combination with a frame and magazines, of an oscillating charger plate pivoted below the magazines, charger receptacles on the plate at opposite sides thereof formed with a horizontally movable side wall, and movable cut-off plates slidingly secured below the receptacles, substantially as described.

6. In a cartridge loading machine, the combination with a frame and magazines supported thereon, of an oscillating charger plate common to both magazines and spring actuated cut-offs for the charger plate, substantially as described.

7. In a cartridge loading machine, the combination with the frame, a wad rammer, of a shell holder consisting of a cylinder, a hooked plate at its forward edge, and a rearwardly extending hopper on one side only forming a counter weight and a cross-bar on the frame with which said hook is adapted to engage, substantially as described.

8. In a cartridge loading machine the combination with the magazine supporting table, the magazine thereon, the charger plate pivoted to the under side of said table, the charge receptacles secured to the under side of said plate, valves for the lower end of said receptacles, means for reciprocating the charger plate, a shell holder pivoted in the frame beneath said charger plate and a hopper at the upper end of said shell holder, substantially as described.

9. In a cartridge loading machine, the combination with the shell holder, the magazines and mechanism for delivering the charge from the magazine to the shell holder, of a wad receptacle, an oscillating plate beneath said receptacle, a cut off Q on said plate and a guide way Q′ extending to the front of the machine, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS R. SMITH.

Witnesses:
J. W. NICHOLS,
G. R. SMITH.