

(No Model.)

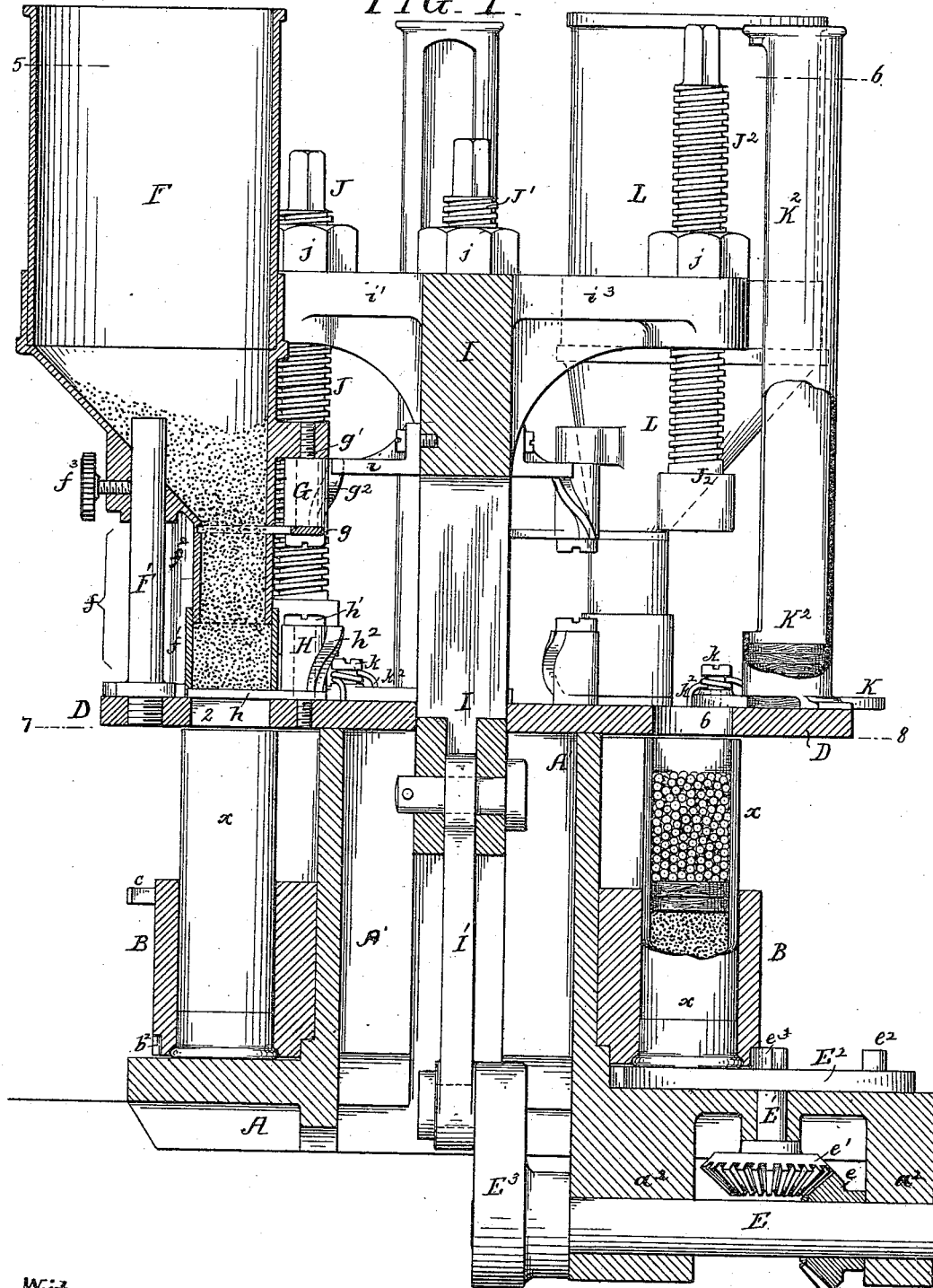
2 Sheets—Sheet 1.

W. REES.
CARTRIDGE FILLING MACHINE.

No. 419,473.

Patented Jan. 14, 1890.

FIG. 1.



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Inventor:
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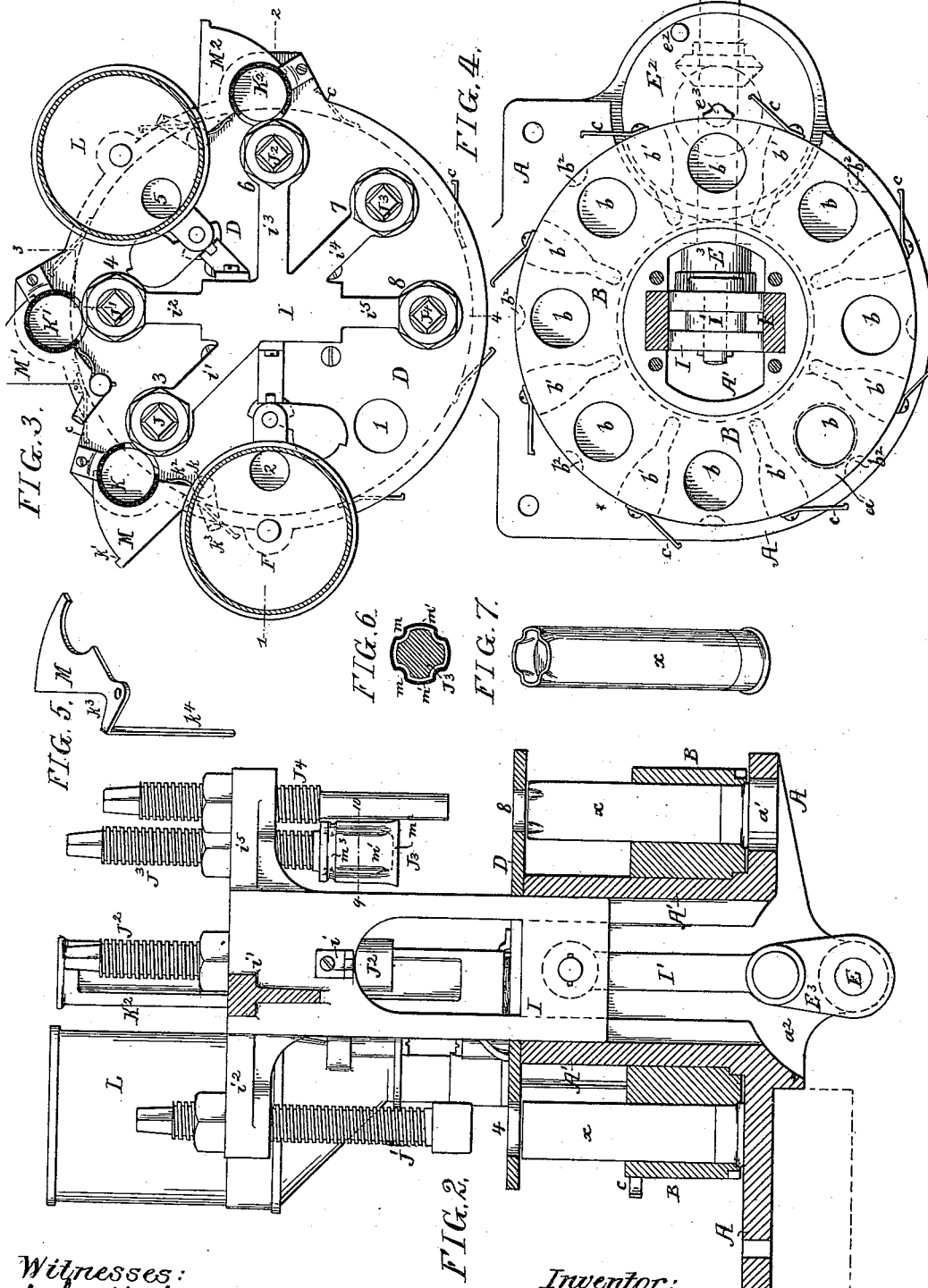
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W. REES.
CARTRIDGE FILLING MACHINE.

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Witnesses:
John Wilson Orr
John J. Keary.

Inventor:
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UNITED STATES PATENT OFFICE.

WALTER REES, OF PHILADELPHIA, PENNSYLVANIA.

CARTRIDGE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 419,473, dated January 14, 1890.

Application filed June 25, 1889: Serial No. 315,500. (No model.)

To all whom it may concern:

Be it known that I, WALTER REES, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Cartridge-Filling Machines, of which the following is a specification.

The object of my invention is to construct a simple and compact machine for loading
10 cartridges.

The invention is especially adapted for use by sportsmen themselves; but it will be understood that the machine can be used either by hand or power, as circumstances require.

15 In the accompanying drawings, Figure 1 is a vertical section of my improved machine on the line 1 2, Fig. 3. Fig. 2 is a vertical section on the line 3 4, Fig. 3. Fig. 3 is a sectional plan view on the line 5 6, Fig. 1. Fig.
20 4 is a sectional plan view on the line 7 8, Fig. 1. Fig. 5 is a detached perspective view of one of the valves of the machine. Fig. 6 is a section on the line 9 10 of the cartridge-crimping device, Fig. 2; and Fig. 7 is a perspective view of the loaded cartridge.

25 A is the base of the machine, which is supported on a table or bench and secured thereto by screws passing through the orifices in the base. This base portion has a central standard A', around which snugly fits the block B,
30 having orifices *b* for the reception of the cartridge-shell *a*. These shells are inserted in the block B through an opening *a* in the base A, (shown by dotted lines in Fig. 4,) and are
35 discharged through an opening *a'* in the base, as shown in Fig. 2. Supported by the standard A' is the disk D, having orifices corresponding with the orifices in the block B, for the passage of the charge for the cartridge,
40 as described hereinafter.

The block B has an intermittent rotary motion, so that it will stop for a limited time for the purpose of allowing the shells to be filled.

45 The driving-shaft E is adapted to bearings *a*² in the under side of the base A, and on this shaft is a bevel gear-wheel *e*, meshing with the bevel-wheel *e'* on the shaft E', carrying at its upper end a disk E², having a pin *e*²,
50 which, as the shaft revolves, passes into one of the recesses *b'*, (shown by dotted lines in Fig. 4,) turning the block B the required dis-

tance. To lock the block in position while the pin *e*² is out of the slot *b'*, I provide a cam-lug *e*³ in the center of the disk E², and a large
55 portion of this lug passes into one or other of the recesses *b*² in the edge of the block B, thus locking it in position while the pin is out of its recesses *b'*.

In the present instance there are eight
60 orifices in the block and eight orifices in the disk D, and I will number these orifices from 1 to 8. The orifice 1 in the disk D corresponds with the orifice *a* in the base-plate A. Above the orifice 2 in the disk
65 is situated the powder-hopper F, having a neck *f*, the length of which is adjustable to regulate the amount of charge of powder inserted in the shell. The portion *f'* of the neck is secured to the disk D, while the
70 portion *f*² forms part of the hopper F. The hopper is supported on a standard F', secured to the disk D, which passes through a portion of the hopper and is secured thereto by means of a set-screw *f*³, Fig. 1. The hopper
75 has two valves *g* and *h*, the valve *g* being the upper valve, and is secured to the hub G, swiveled on a pin *g'*, secured to the hopper, and the hub has a cam *g*², which engages with an arm *i* on a vertical reciprocating cross-
80 head I, described hereinafter, so that on the movement of the cross-head the valve will be thrown into or out of the hopper, cutting off or allowing the powder to flow. The valve *h* is similarly constructed and is secured to a
85 hub H, pivoted on a pin *h'*, and provided with a cam *h*², also in line with the arm *i* on the cross-head, so that as the cross-head nears its lowest point it throws the valve *h* open, allowing the powder to fall into the cartridge.
90 The upper valve, however, is closed, so that the charge will be the amount of powder between the two valves *g* and *h*. On the upward stroke of the plunger the valve *h* is again closed and the valve *g* opened, allow-
95 ing a fresh supply of powder to enter the neck *f*.

The plunger I is connected to a crank E³ on the shaft E by a connecting-rod I'. The cross-head is guided in the extension A' of
100 the base, as shown clearly in Figs. 2 and 4. On the upper portion of the cross-head are a series of arms *i'*, *i*², *i*³, *i*⁴, and *i*⁵. The arm *i'* carries a screw-threaded plunger J, this

plunger being threaded into the orifice in the end of the arm, and a jam-nut j above the arm holds the plunger in the position to which it is set. To one side of the plunger is a reservoir K, Fig. 3, in which are packed the first wads to be placed in the shell directly after the powder. This reservoir has an opening at the bottom to allow for the passage of the wads from the reservoir to a position directly above the opening 3 in the disk D. A gate M, pivoted at k , pushes the wad out into the position required. The gate is stopped in its outward movement by a lug k' striking a projection on the disk D. The spring k^2 returns the gate to its normal position, as shown in Fig. 3. The gate has an arm k^3 , a projecting lip k^4 of which passes down and into the path of the spring-arm c on the periphery of the block B, so that as the block is turned one or other of the spring-arms c strikes the arm of the gate, forcing a wad out of the reservoir into the path of the plunger J, which forces the wad into the shell of the cartridge. The wad fits snugly in the cartridge and has to be forced to its seat.

A plunger J' , similar to the plunger J, is secured to the arm i^2 , and a reservoir K' , similar in construction to the reservoir K, just described, is in close proximity to the plunger, and is provided with a valve M' , similar in construction to the one just described. The second wads are carried by the reservoir when two wads are to be placed between the shot and the powder.

L is the shot-reservoir, directly above the opening 5 in the disk D, and the valves are similar in construction to the valves of the powder-reservoir F, and therefore need not be described in detail.

Directly above the opening 6 in the disk D is a plunger J^2 , similar in construction to the plunger J, and is carried by the arm i^3 , and its wad-reservoir K^2 and valve M^2 are similar in construction to those described in connection with the reservoir K. This plunger J^2 places the last wad in the cartridge directly above the shot, as clearly shown in Figs. 1 and 3. The arm i^4 carries the crimping-plunger J^3 . (Shown in Figs. 2 and 6.) This crimping-plunger crimps the upper portion of the cartridge, preventing the wad from being removed or falling out. The cartridge when finished is in the form shown in Fig. 7. The crimping-plunger is grooved at m at two or more places, and placed over this grooved portion is a crimped sleeve m' , flared at its lower end m^2 , so as to readily pass over the end of the cartridge-shell. The plunger is also grooved at m^3 , so that by pressing the sleeve into this groove the sleeve will be held firmly in position on the plunger. The arm i^5 carries a discharging-plunger J^4 , which is merely a screw-threaded plunger reduced at its lower end. The reduced portion strikes the upper wad of the cartridge and forces the cartridge through the opening a' , as shown in

Fig. 2, although in some cases the cartridge-shell may be loose enough in its block to fall out of the machine without the use of this plunger.

On the under side of each wad-plunger is a sharp projection adapted to hold the wad onto the plunger when the wad is being forced into the cartridge-shell, so as to prevent it from falling and becoming clogged in the shell.

The arrangement of parts above described may be varied, depending upon the order in which the charges are to be placed in the cartridge, and when more wads are to be inserted in the cartridge the number of openings in the plungers will of course be increased.

I claim as my invention—

1. The combination, in a cartridge-loading machine, of the base having a hollow upright extension, a block adapted thereto carrying the cartridge-shells to be filled, with a vertically-reciprocating cross-head carrying wadding-plungers and guided in said hollow extension, wad-reservoirs adjacent to said plungers, valves for forcing the wads in the path of the plungers, with powder and shot reservoirs mounted above the block, and having discharge-valves acted upon by the cross-head, all substantially as and for the purpose set forth.

2. The combination, in a cartridge-loading machine, of the reservoir for containing powder or shot, made of two parts, one part mounted on the disk D and the other part adjustably secured to a post on the disk, with valves, one carried by the fixed portion and the other by the adjustable portion, so that on the adjustment of the movable portion the charge of powder or shot can be regulated.

3. The combination of the base, the rotating cartridge-carrier thereon, a reciprocating cross-head carrying plungers adapted to guides in the base, an arm on the cross-head, with a reservoir having a neck, valves G and H, cams on said valves adapted to be acted upon by the arm, whereby the valves are opened and closed, substantially as described.

4. The combination of the reservoir F, having a neck f , made in two parts, f' and f^2 , means for adjusting one in respect to the other, with a valve carried by each portion, said valve being mounted on hubs pivoted to pins, with a cam on the hub, with a cross-head, an arm thereon adapted to the cam, so that on the reciprocation of the cross-head one valve will be opened and the other closed, substantially as described.

5. The combination, in a cartridge-filling machine, of the base having a hollow extension, cartridge-shell block mounted on said extension, mechanism for intermittently moving said block, with a vertically-reciprocated cross-head carrying plungers, said cross-head adapted to ways in the hollow projection of the base and connected to the crank of the driving-shaft by a rod, substantially as described.

6. A plunger for a cartridge-filling machine,

having a pin projecting from its under side, by which the wad is carried until forced into the shell of the cartridge, substantially as described.

5 7. The combination, in a cartridge-filling machine, of the plunger, a reservoir, and a pivoted valve having an arm projecting in the path of a cam on the cartridge-block, so that on the rotation of the block the valve will be
10 moved, carrying a wad into the path of the plunger, substantially as described.

8. The combination, in a cartridge-filling machine, of the plunger, the reservoir, the valve cut out to receive a wad, having an arm
15 k^3 and a projection k^4 , with arms c on the cartridge-block B, and a spring k^2 , adapted to return the valve to its normal position after being struck by the arm c , substantially as
20 set forth.

9. The crimping device for cartridges, consisting of a plunger grooved substantially as described, a sleeve surrounding said plunger and grooved to correspond with the same, so

that when the plunger is forced into the cartridge the shell will be creased between the
25 plunger and the sleeve, substantially as set forth.

10. The combination, in a cartridge-filling machine, of the base A, the rotated cartridge-shell block B, with the hoppers and plungers
30 mounted above said block, with recesses b' on the under side of the block and recesses b^2 on the edge of the block, with a vertical shaft geared to the main shaft and carrying a pin adapted to the recesses b' , and a central cam
35 adapted to the recesses b^2 , so that the block will be intermittently fed and locked, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of
40 two subscribing witnesses.

WALTER REES.

Witnesses:

HENRY HOWSON,
HARRY SMITH.