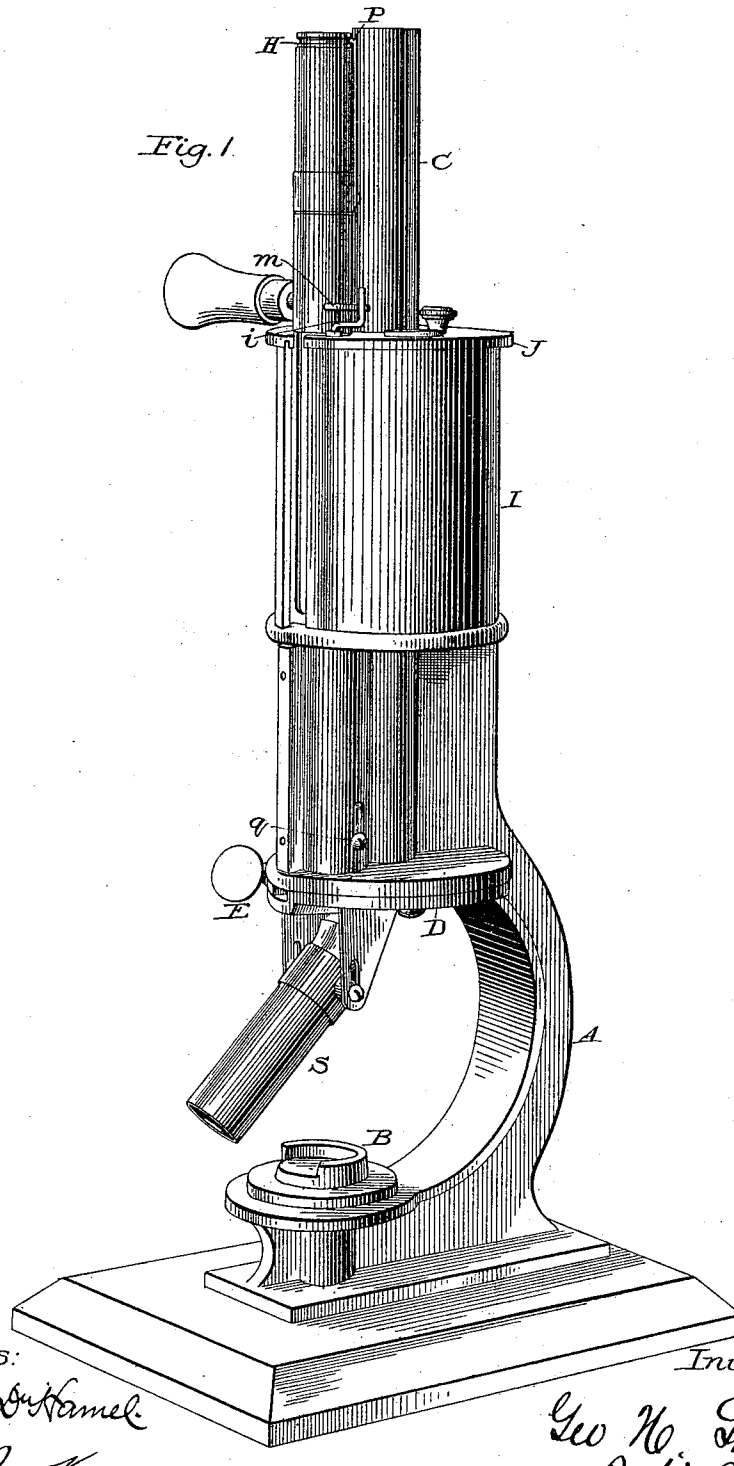
(No Model.) 2 Sheets—Sheet 1.

G. H. STAHL.

MACHINE FOR LOADING CARTRIDGES.

No. 366,744. Patented July 19, 1887.

Fig. 1.



Witnesses:
James P. DeKamel.
W. R. Kennedy

Inventor:
Geo H. Stahl.
By his Atty.
P. T. Dodge

N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

G. H. STAHL.

MACHINE FOR LOADING CARTRIDGES.

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Fig. 2.

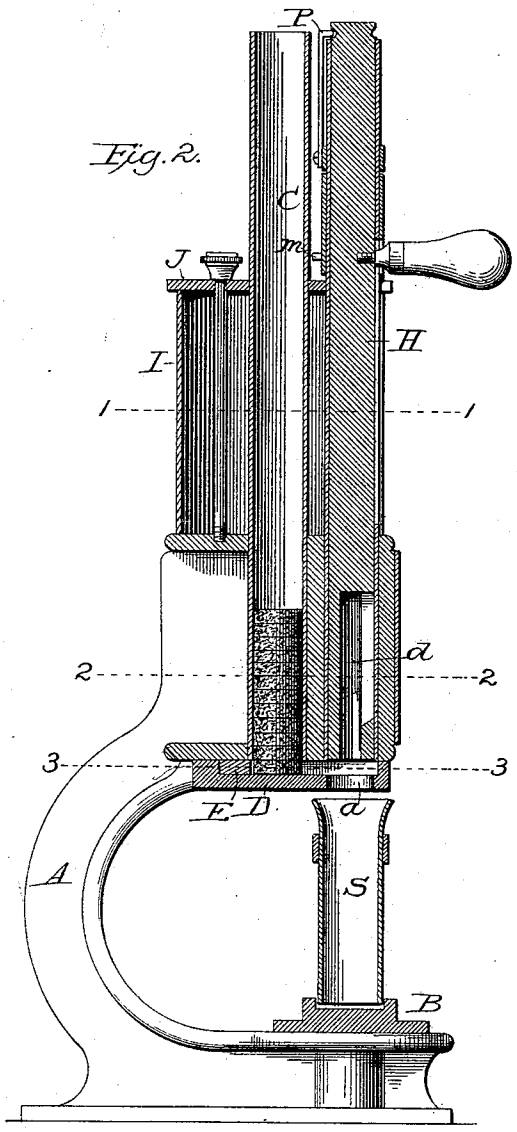


Fig. 3.

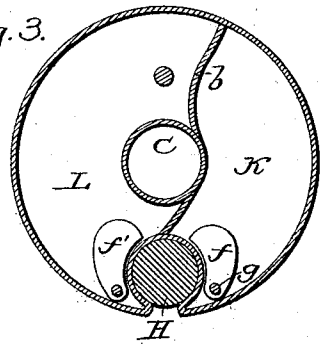


Fig. 4.

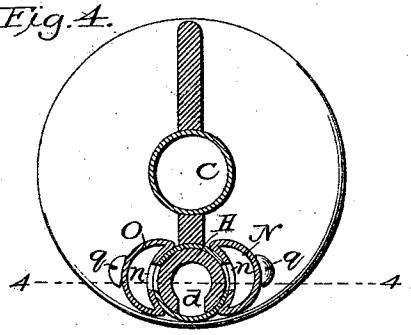


Fig. 5.

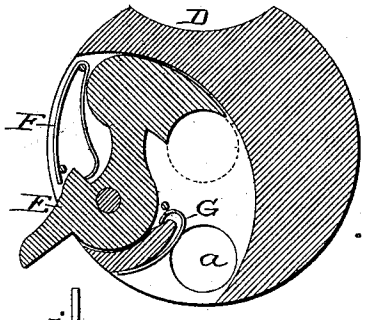


Fig. 6.

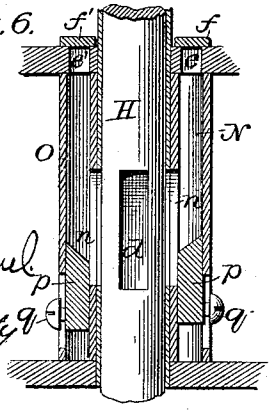
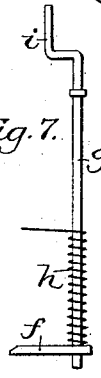


Fig. 7.



Witnesses:
James F. Hamel.
W. R. Kennedy.

Inventor:
Geo. H. Stahl
By his Atty.
P. T. Dodge.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE H. STAHL, OF QUINCY, ILLINOIS.

MACHINE FOR LOADING CARTRIDGES.

SPECIFICATION forming part of Letters Patent No. 366,744, dated July 19, 1887.

Application filed November 9, 1886. Serial No. 218,398. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. STAHL, of Quincy, in the county of Adams and State of Illinois, have invented certain Improvements in Machines for Loading Cartridges, of which the following is a specification.

My invention relates to a hand-machine adapted for rapidly introducing the powder, shot, and wads into primed cartridge-shells or cases now in use for sporting purposes; and it consists in the construction and combination of various devices, hereinafter explained, for measuring the shot and powder and delivering the same into the cartridge-shell, and for positively introducing the wads.

In the accompanying drawings, Figure 1 represents a perspective view of my machine. Fig. 2 is a vertical central section through the same. Fig. 3 is a horizontal section on the line 1 1. Fig. 4 is a horizontal section on the line 2 2. Fig. 5 is a horizontal section on the line 3 3. Fig. 6 is a vertical transverse section on the line 4 4, Fig. 4. Fig. 7 is a view of one of the valves and its operating-spindle.

A represents a standard, provided at its base with a plate, B, or equivalent support for the shell to be charged. In the upper end of this standard I mount a vertical tube, C, serving as a reservoir or magazine for the wads, which are placed therein one above another. At its lower end this wad-tube terminates over and a short distance above a stationary plate, D, by which the column of wads is sustained. In a slot in the frame, directly over the plate D, is pivoted a swinging arm, E, having one end projected at the front to form a thumb-piece by which to operate it. A spring, F, fixed to the standard acts upon the arm E, and holds the same normally in the position shown in Fig. 5, in rear of the column of wads; but when the forward end or thumb-piece of the arm is pressed laterally the arm acts to carry the lowermost wad forward from under the column and over the discharge-opening *a*, formed in the plate D, directly over the place occupied by the cartridge-shell. During its advance the arm supports the column of wads above it; but when it is retracted by the spring the wads descend, and the next succeeding wad is brought into position to be delivered in its turn by the arm. Under ordinary circumstances the wads will be of such size as to prevent them from falling accidentally through the opening *a;* but as a precautionary matter, and to hold wads of small diameter, a spring, G, is applied, as in Fig. 5, to bear against one edge of the wad, which bearing at its opposite edge against the standard is thus held in position.

In front of the standard, directly over the opening *a*, is mounted a vertically-sliding plunger, H, with a rigid handle, by which it may be driven downward at will to force the wads through the opening *a* into the cartridge-shells. A hole, *d*, extends upward centrally into the lower end of the plunger H and emerges through one side of the same in the form of a vertical slot, as shown in Figs. 2, 4, and 6, for the purpose of permitting the powder and shot to pass therethrough from the charging-tubes into the cartridge-shell, as will be presently explained.

On top of the standard I mount magazines to contain the powder and shot. These are preferably formed, as shown, by constructing the upper end of the standard with a flat circular face, and mounting thereon a metallic cylinder, I, closed by a cap, J, and divided by an internal vertical partition, *b*, into two separate compartments, K and L, designed to receive the powder and shot, respectively. The powder-chamber K is provided in its lower end, near the plunger H, with a discharge-opening, *e*, and the shot-chamber provided with a similar opening, *e'*, on the opposite side of the plunger. The powder-opening *e* is closed by a horizontally-swinging valve, *f*, on a vertical stem or spindle, *g*, acted upon by a spring, *h*, which tends to keep the valve in a closed position. The spindle extends above the magazine, and is provided on its upper end with a crank-arm, *i*. The shot-opening is closed by a similar valve, *f'*, having a spindle, spring, and crank, similar to those of the powder-valve.

It will be observed that the two crank-arms stand above the magazines and on opposite sides of the plunger, and that the plunger is encircled by and slides loosely through a sleeve having on its rear side a cam, *m*, and on its front side a vertical slot to receive the handle of the plunger. During its descent the handle of the plunger works in a vertical slot in the front of the magazine, whereby the rotation

of the plunger is prevented; but when the plunger is lifted to its highest point the arm is carried above the magazine-slot and into the slot of the sleeve bearing the cam, in which position of the parts the plunger and handle are free to turn horizontally in either direction, the effect of this rotation being that the cam *m* is caused to act on one or the other of the valve-spindles and thus open the powder or the shot valve, according to the direction of rotation.

Below the discharge-valves *f* and *f'*, respectively on opposite sides of the plunger, I mount two charge-tubes, N and O, which receive the powder and shot, respectively. The inner walls of these charge-tubes are curved to fit closely to the opposite sides of the plunger, and are provided at their lower ends with vertical slots *n*, leading to the plunger, as shown in Figs. 4 and 6.

It will be remembered that the plunger is provided at the lower end with an opening leading through its side. By the rotation of the plunger when in its elevated position, this opening *d* may be brought in register with one or the other of the charge-tubes N and O, and when thus brought in connection with either one it will permit the contents of the tube to pass through the opening *d*, and thence downward through the lower end of the plunger into the cartridge-case beneath. Thus it will be seen that the plunger serves not only as a means of inserting the wads, but also as a valve and conductor for delivering the shot and the powder alternately from the charge-tubes N and O to the cartridges. When the plunger is in its normal position, and when descending, this opening *d* is thrown out of register with the ports of the charge-tubes, as shown in Fig. 4, so that the escape of their contents is not permitted.

To prevent the accidental descent of the plunger I commonly employ a spring-arm, P, arranged to engage a notch in its upper end; but this is not a necessary feature of the invention.

In order to conduct the powder and shot into the shell with certainty, and to effect the necessary compression of the wads, I propose to employ a movable tube, S, adapted to receive the cartridge-shell within its lower end, and flared or enlarged at its upper end to effect the reduction of the wad, as in cartridge-loaders at present known in the art. To permit the convenient manipulation of the parts, this tube is sustained by pivots or journals at its upper end mounted in slotted ears depending from the upper part of the standard, this arrangement permitting the tube to be lifted, so that the head of the cartridge-shell may be dropped into the cavity in the head of the supporting-plate, the better to secure it in position.

The manner of operating the machine is as follows: The magazines being properly supplied with powder, shot, and wads, the parts stand normally in the position shown in Figs. 1 and 2, the powder and shot valves being closed and the plunger elevated. The operator, swinging the lower end of the tube S, inserts a shell therein and returns the tube to its vertical position beneath the plunger. He then turns the handle to the right, thereby revolving the plunger until the opening *d* is brought into communication with the powder-tube N, which has previously been filled with powder from the magazines above. The powder now flows from the tube N through the opening *d* into the cartridge beneath. At the same time that this occurs the cam *m*, actuated by the rotation of the handle, operates the valve *f'*, permitting the shot to descend into the charge-tube O, which was previously empty. The handle is now turned to its normal position, the arm E operated to place a wad beneath the plunger, and the plunger driven downward in order to carry the wad into the cartridge. The plunger is now lifted to its original position and turned to the left, the effect of which is to permit the passage of the shot from the tube O through the opening *d* of the plunger into the cartridge, the cam at the same time actuating valve *f* and again filling the charge-tube N with powder. The handle is now restored to its first position, a second wad placed beneath the plunger by the arm E, and the plunger depressed a second time, thereby seating the wad on top of the shot. This completes the loading operation. The handle is now raised to its original position, the cartridge-case removed, and the operations repeated.

It will be observed that the tubes N and O are filled alternately, and that they serve to accurately measure the charges of powder and shot, each charge being first delivered from its magazine into the charge-tube and subsequently delivered from the charge-tube into the cartridge by a distinct operation.

Each of the charge-tubes is provided in its lower end with a vertically-adjustable plug, *p*, secured by a set-screw, *q*, to permit of the charges being increased or diminished at will.

The essence of my invention resides in operating the powder and shot valves by means of the plunger and in adapting the plunger which seats the wads to effect the deliverance of the powder and shot from the charge-tubes into the cartridge, and it is manifest that the details may be variously modified within the range of mechanical skill without departing from the limits of the invention.

Having thus described my invention, what I claim is—

1. The combination, with the frame or standard, of the vertical plunger provided with the opening, as described, the powder and shot tubes or chambers at its sides, the wad-tube, the vibrating wad-delivering finger, its retracting-spring, and the spring to sustain the wad.

2. In a cartridge-loading machine, the vertical plunger having in its lower end the central hole and the lateral opening therefrom, in combination with a charge-tube located at the

side of the plunger and provided with a discharge-hole to register with the opening in the plunger, whereby the charge may be delivered from the tube through the plunger.

3. In combination with the two charge-tubes located on opposite sides of the plunger and provided with openings leading thereto, the rotary vertically-reciprocating plunger provided with the hole having a lateral opening, as described, whereby the plunger is adapted not only for seating the wads within the cartridge, but also for delivering the contents of the two charge-tubes to the cartridge.

4. In combination with the vertically reciprocating and rotating plunger H, the cam *m*, connected therewith, the powder and shot magazines K L, the magazine-valves *f f'*, and their spindles *g*, arranged in the path of the cam, whereby the rotation of the plunger in opposite directions will cause the discharge of the powder and shot successively.

5. In a cartridge-loading machine, the vertically reciprocating and rotating plunger provided with the opening *d* in its lower end, in combination with the cam *m*, the powder and shot magazines, the magazine-valves adapted to be operated by the cam, and the two stationary charge-tubes provided with discharge-openings to register with the openings in the plunger, said parts organized for joint operation, substantially as described, whereby the rotation of the plunger is caused to deliver the shot and powder from the magazines into the charge-tubes and from the charge-tubes to the cartridge.

6. In a cartridge-loading machine, the combination, substantially as hereinbefore described and shown, of the standard provided with a seat for the cartridge, the vertical wad tube or magazine, the vertically reciprocating and rotating plunger provided with an opening, *d*, in its lower end, the swinging finger E, for delivering the wads from their magazine beneath the plunger, the two charge-tubes provided with openings to register with the opening in the plunger, the powder and shot magazines, their valves, through which the powder and shot are delivered into the charge-tubes, the valve-spindles, and the cam connected with the plunger for operating the valve-spindles.

7. In a cartridge-loading machine, the combination of the cartridge-supporting plate and the receiving-tube S, having journals mounted in slotted supporting-ears, as described.

In testimony whereof I hereunto set my hand, this 22d day of October, 1886, in the presence of two attesting witnesses.

GEORGE H. STAHL.

Witnesses:
LOUIS H. BERGER,
SIMON BERGER.