G. P. SALISBURY & C. S. WELLS.

MACHINES FOR BURRING CARTRIDGE SHELLS.

No. 182,857. Patented Oct. 3, 1876.

Fig. 1.

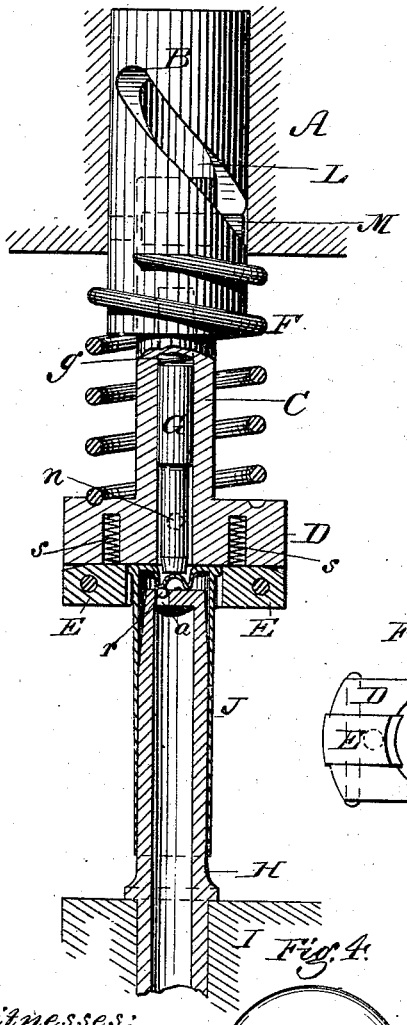


Fig. 2.

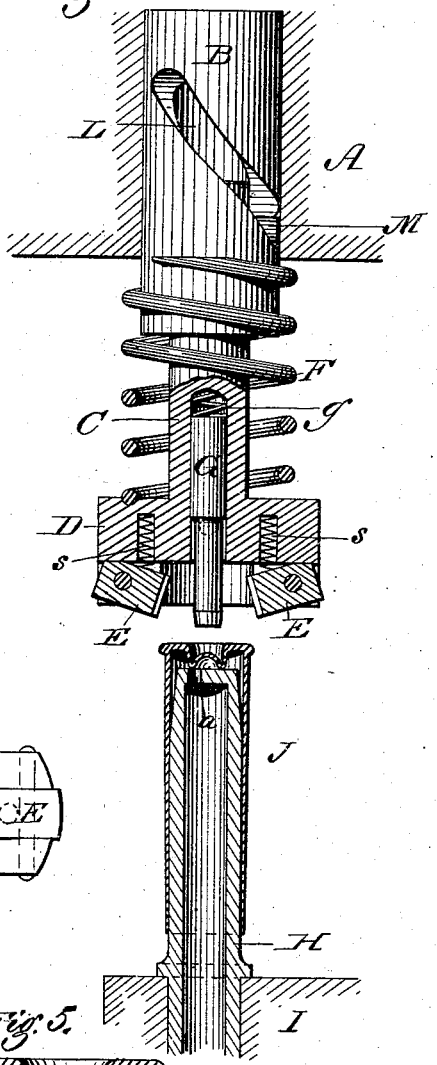


Fig. 3.

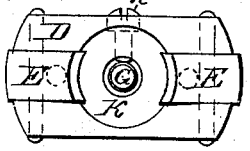


Fig. 4.

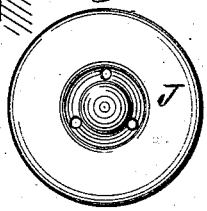
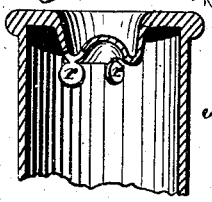


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE P. SALISBURY AND CHARLES S. WELLS, OF NEW HAVEN, CONN., ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BURRING CARTRIDGE SHELLS.

Specification forming part of Letters Patent No. **182,857**, dated October 3, 1876; application filed August 3, 1876.

To all whom it may concern:

Be it known that we, GEORGE P. SALISBURY and CHARLES S. WELLS, of New Haven, in the county of New Haven and State of Connecticut, have invented certain Improvements in Machine for Burring Cartridge-Shells, of which the following is a specification:

Our invention consists in a device for burring cartridge-shells, as hereinafter explained.

In the drawings, Figure 1 is a side view of our improved device, the lower portion being in section, and the device represented as clamping the head of the shell; Fig. 2, a similar view, showing the device raised up clear of the shell; Fig. 3, an end view of the device; and Figs. 4 and 5, respectively, an end and sectional view of a shell enlarged.

This invention relates to the manufacture of that class of cartridge-shells which are pierced in the head in one or more places, in order that the fire from the cap or primer may take effect upon the powder contained in the shell. Shells of this class are usually formed with a pocket or recess in the head, as shown in Figs. 1, 2, 4, and 5, in which is seated the cap or primer, the fire from the primer passing through small holes to the interior of the shell, as shown. The tools which punch these holes in the head or pocket of the shell cut therefrom small disks *r*, Figs. 1 and 5, which are generally detached from the shell in the act of punching the holes. If, however, these disks remain attached at any point of their periphery to the shell, either through not being completely cut, or by adhesion, or remain upon the shell exteriorly or interiorly, as they are liable to do, aided by such lubricating material as it may be found necessary to use, they interfere with subsequent operations of manufacture, and will often disable the gun in which the cartridge is used by falling into its mechanism. It is, therefore, of great importance that these disks should not remain upon the shell, and it is for their removal that the present device is designed. To accomplish this object the shells J are mounted upon pins H of a revolving dial, I, in the usual manner, with the difference that instead of being made solid, as is customary, the pins H are made hollow, as shown in Figs. 1 and 2. These pins are provided at their upper ends with one or more small holes corresponding to the holes pierced in the head of the shell, the holes in the pins opening into the hollow interior of the same, as shown. Before coming to the burring device the shells pass under the punching mechanism and the heads are pierced, such of the disks *r* as are detached from the shell passing through the small holes in the top of the pins, and through the hollow pins into a suitable receptacle placed below. Such of the disks *r* as remain attached to the shell will project down into the holes in the top of the pins, as shown in Fig. 1. With the shell in this condition the pin H is carried around by suitable operating mechanism until the shell comes directly under the burring mechanism. This mechanism consists of a hollow cylinder, B, securely and rigidly mounted in the reciprocating head-block A of the machine, and provided with a spiral slot, L. Working in the hollow cylinder B is a second cylinder, C, which has a vertical movement therein, and is furnished near its upper end with a projecting stud or pin, M, working in the slot L of the cylinder B, as shown in Figs. 1 and 2. The cylinder C is hollow through the greater part of its length, and carries in its lower end a plunger, G, which is forced outward by a spiral spring, *g*, as shown in Figs. 1 and 2, the outward movement of the plunger G being limited by a stop-screw, *n*. The cylinder C is formed with an enlargement or head, D, at its lower end, as shown in Figs. 1, 2, and 3, which is provided in its lower face with a circular recess, K, just large enough to freely admit the flange of the shell to be operated upon, and with two pivoted jaws, E, opening into the recess K on opposite sides, as shown in Figs. 1, 2, and 3. These jaws are forced outward from the block or head D by means of spring *s* seated in the block D, as shown. The shell J being brought directly under the burring device, as already described, the head-block

A of the machine is caused to descend, carrying the burring mechanism with it. As the head-block A descends, the plunger G, coming in contact with the head of the shell J, is prevented from descending farther, and the cylinder C rides down over said plunger, causing it to recede into the cylinder C, thereby compressing the spring *g*. At the same time the jaws E, coming in contact with the flange of the shell J, are caused to assume a horizontal position, as shown in Fig. 1, thereby firmly clamping the head or flange of the shell, which then rests solidly against the block D on its upper face. During so much of the operation, the cylinder C and block D are held outward from the cylinder B by means of a strong spring, F, encircling said cylinders, and resting one end against the under side of the head-block A, and the other end against the upper side of the block D, as shown in Figs. 1 and 2; but as the block D comes solidly against the head of the shell J, the downward movement of the block D and cylinder C is arrested, and the continued downward movement of the head-block A, causing the hollow cylinder B to pass down over the cylinder C. The spiral slot L, working on the pin M, causes the cylinder C, with its head or block D, to rotate. It will be seen that, as the jaws E clamp the shell firmly, the shell will also be caused to rotate, and the burrs or disks *r*, coming against the edges of the holes in the end of the stationary pin H, are rubbed or sheared off, and, falling down through the hollow pin, are caught in a suitable receptacle, which, as before stated, is placed below. The head-block A, having by this time reached the limit of its downward movement, begins to ascend, and the spring F keeping the block D pressed outward, the cylinder C and the shell J are rotated in a reverse direction, thus insuring the removal of the disks. This rotation continues until the pin M comes in contact with the lower end of the slot L, by which means the outward motion of the cylinder C and block D is limited, when they also commence their upward movement. As the block D travels away from the pin H, the springs *s* force the jaws E outward, causing them to release the flange of the shell, when the plunger G, acted upon by the spring *g*, forces the shell out of the recess K, and on to the pin H.

This forms a very simple, cheap, and efficient device, and one not easily disarranged. By attaching it to the same head-block that carries the pins for punching the holes, the burring may be automatically performed on each shell at the same time that another is being punched, thus saving the use of a separate machine and a separate operation for that purpose, thus materially expediting and cheapening the operation.

Having thus described our invention, what we claim is—

1. The combination of the cylinder B, the block D, provided with the clamping-jaws E, and spring F, and the spring-plunger G, all arranged to operate substantially as described.

2. The hollow pin H, with one or more holes in its upper end, arranged on a dial or feed-plate to hold the shells while being burred, as set forth.

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