

S. W. WOOD.

MACHINES FOR HEADING CARTRIDGE-SHELLS.

No. 178,825.

Patented June 13, 1876.

Fig. 1.

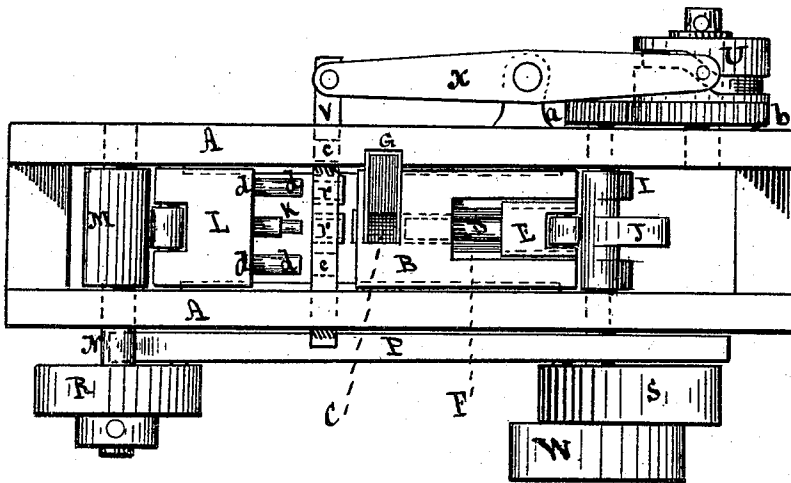
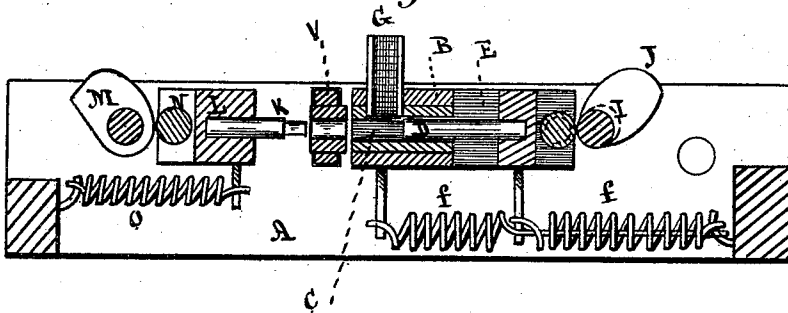


Fig. 2.



Witnesses:

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STEPHEN W. WOOD, OF CORNWALL, NEW YORK, ASSIGNOR TO WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR HEADING CARTRIDGE-SHELLS.

Specification forming part of Letters Patent No. **178,825**, dated June 13, 1876; application filed June 5, 1876.

To all whom it may concern:

Be it known that I, STEPHEN W. WOOD, of Cornwall, county of Orange, and State of New York, have invented a new and useful Improvement in Machines for Heading Metallic Shells for Cartridges and other purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

Figure 1 represents a top view or plan thereof; Fig. 2, a central longitudinal section.

My invention consists, in a machine for heading metallic shells for cartridges and other purposes, in providing two reciprocating dies, in which the shells are headed alternately—first in one die and then in the other—and expelled therefrom, after having been headed, from the same side of the die in which they were introduced.

A in the accompanying drawing represents the frame, upon which are mounted the several operating parts to head and expel the shells from the dies consecutively without intermission or stopping the machine. B is a sliding head, moving back and forth on the frame in suitable ways, in which sliding head is formed a channel, C, through which the shells are transferred into the dies to be headed as they are presented alternately to receive them. To hold a number of shells and conduct them to this channel, one by one, a trough or hopper, G, is provided, in the usual manner, and placed directly over the opening thereto. To carry the shells forward and through this channel C, and transfer them into the dies to be headed, one by one, a transferring-punch, D, is secured to the reciprocating head E, which head is mounted upon the sliding head B, and moves back and forth thereon in ways F. When a shell is to be transferred from the sliding head B into one of the dies to be headed, it is placed into the channel C through the trough G, and carried forward by the transferring-punch D until it has entered part way into the die, and the front end of the punch is even or flush with the entrance of the channel, when the two—punch D and head B—form a level surface, and advance together to head the shell.

These heads B E are operated forward and in unison by means of cams I J, mounted upon and driven by the same shaft that imparts the requisite intermittent movement to the dies in which the shells are headed. The larger cam, J, operates the conveying-punch D, to transfer the shells, one after another, into the dies, and the smaller cam, I, to move the head B forward at the same time the punch D continues to advance therewith, and at the same velocity, the two forming what is usually termed the "bunter" to head the shells, and are drawn back to repeat the movement by means of springs *ff* as the cams revolve. To support the shells while being headed, a shouldered punch, K, is secured to a sliding head, L, which head is moved forward by means of a cam, M, carrying the punch K into the dies as they are presented alternately, where it remains stationary until the head is formed on the shell, and is then withdrawn by the spring O, attached to the lower side of the head, to permit the die containing the headed shell to move to one side out of the way, and an empty die presented in its place to receive a new shell to be headed. To operate this shouldered punch in harmony with the transferring-punch and sliding head B, the two forming the bunter, a rod, P, is provided, one end of which is connected to a pulley, R, by which this cam M, secured to the same shaft N, receives a rocking motion through the cam S on the driving-shaft as it revolves. At right angles to the punch K and bunter B is arranged a reciprocating die-carrier, V, moving back and forth in suitable boxes secured to the frame A. To this reciprocating die-carrier two dies, *rr*, are fitted, in which the shells are headed, first in one die and then in the other, being presented alternately by means of the lever X, cam U, and cog-wheels *ab*, the latter being mounted upon the driving-shaft with the cams I, J, and S, which shaft is driven by a belt-wheel, W. After the shells have been headed they are removed from the respective dies by punches *dd*, secured to the head L, moving back and forth therewith, so that at the same time a shell is being introduced into one of the dies to be headed a headed shell is being punched out of the other die.

Holes *c c* (represented by dotted lines, Fig. 1) are formed in the die-carrier, to allow the punches *d d* to enter therein when not entering a die to remove a headed shell therefrom.

Having thus recited the functions of the various parts composing the machine in the operation of heading shells for cartridges, I will proceed to recapitulate these operations briefly in their order.

The shells to be headed are first placed in the hopper or trough, and pass thence into the channel directly in front of the transferring-punch, which carries the shells, one by one, forward, and transfers them into the dies, which are presented alternately by the reciprocating die-holder, first one and then the other, to receive them. At the same time a shell is being transferred into one of the dies from the channel the supporting-mandrel advances into the die to receive and support the shell transferred therein while being headed, remaining stationary within the shell while the bunter, composed of the sliding head and punch combined, continues to advance and form the head or flange thereon, and at the same time a shell is being introduced into one

of the dies to be headed a headed shell is being expelled from its die by one of the punches *d*, and so on the operation is repeated without intermission, heading shells in the dies alternately, first in one die and then in the other, and removing them therefrom by a different punch than the one upon which they were headed.

Having thus fully described my improvement in machines for heading shells for cartridges and other purposes, what I claim therein as new, and desire to secure by Letters Patent, is—

In a machine for heading shells for cartridges and other purposes, the combination of two or more reciprocating dies, a mandrel, a header, and discharging device, whereby shells may be headed alternately, first in one die and then in another, by a single punch and upon a single mandrel, substantially as described.

STEPHEN W. WOOD.

Witnesses:

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