

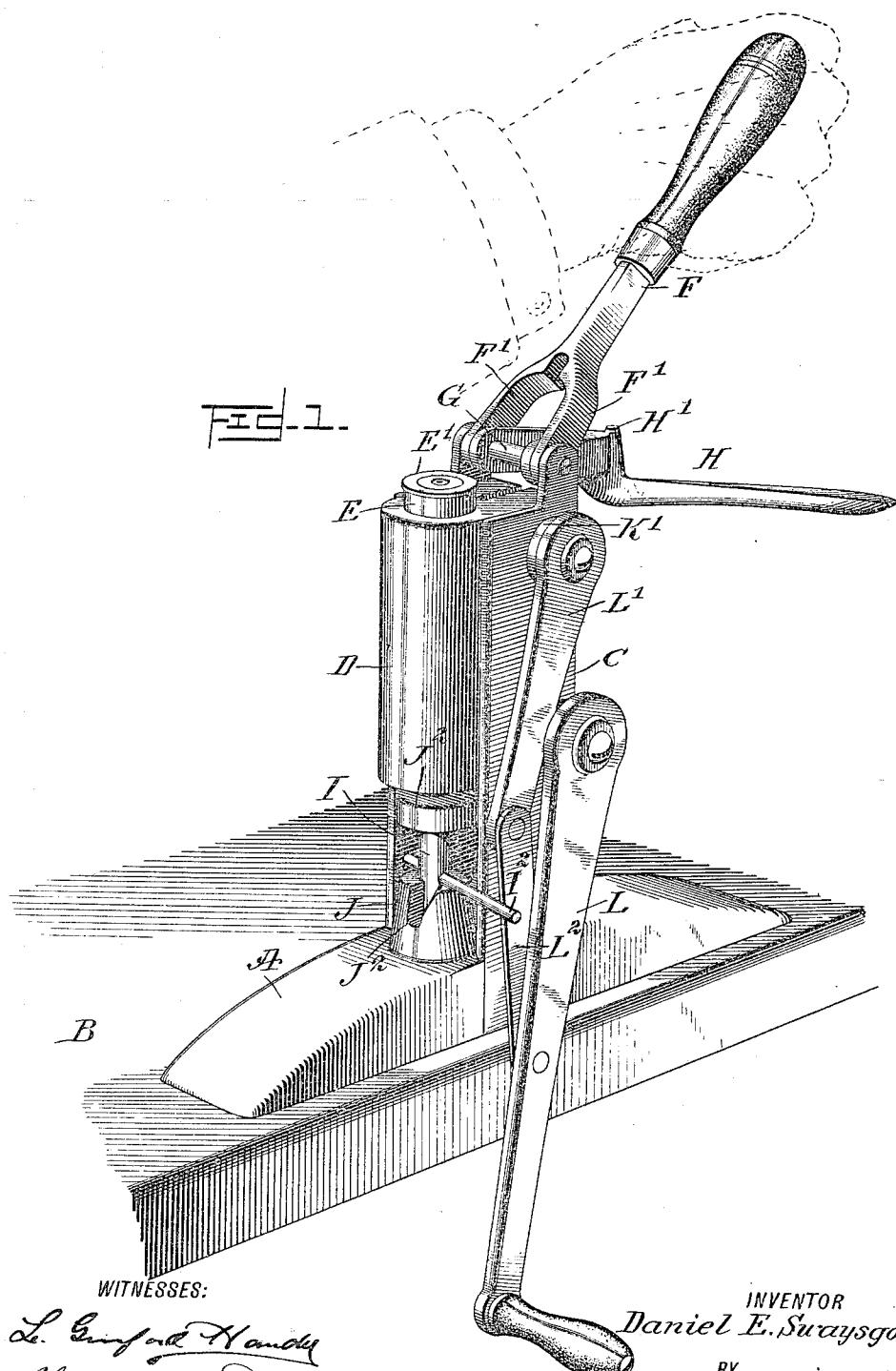
No. 835,480.

PATENTED NOV. 6, 1906.

D. E. SWAYSGOOD.
DECAPPING, RECAPPING, AND SIZING MACHINE.

APPLICATION FILED DEC. 17, 1904.

8 SHEETS—SHEET 1.



WITNESSES:

L. G. Ford
Handy
Rev. G. Foster

INVENTOR

Daniel E. Swaysgood

BY Miner

ATTORNEYS

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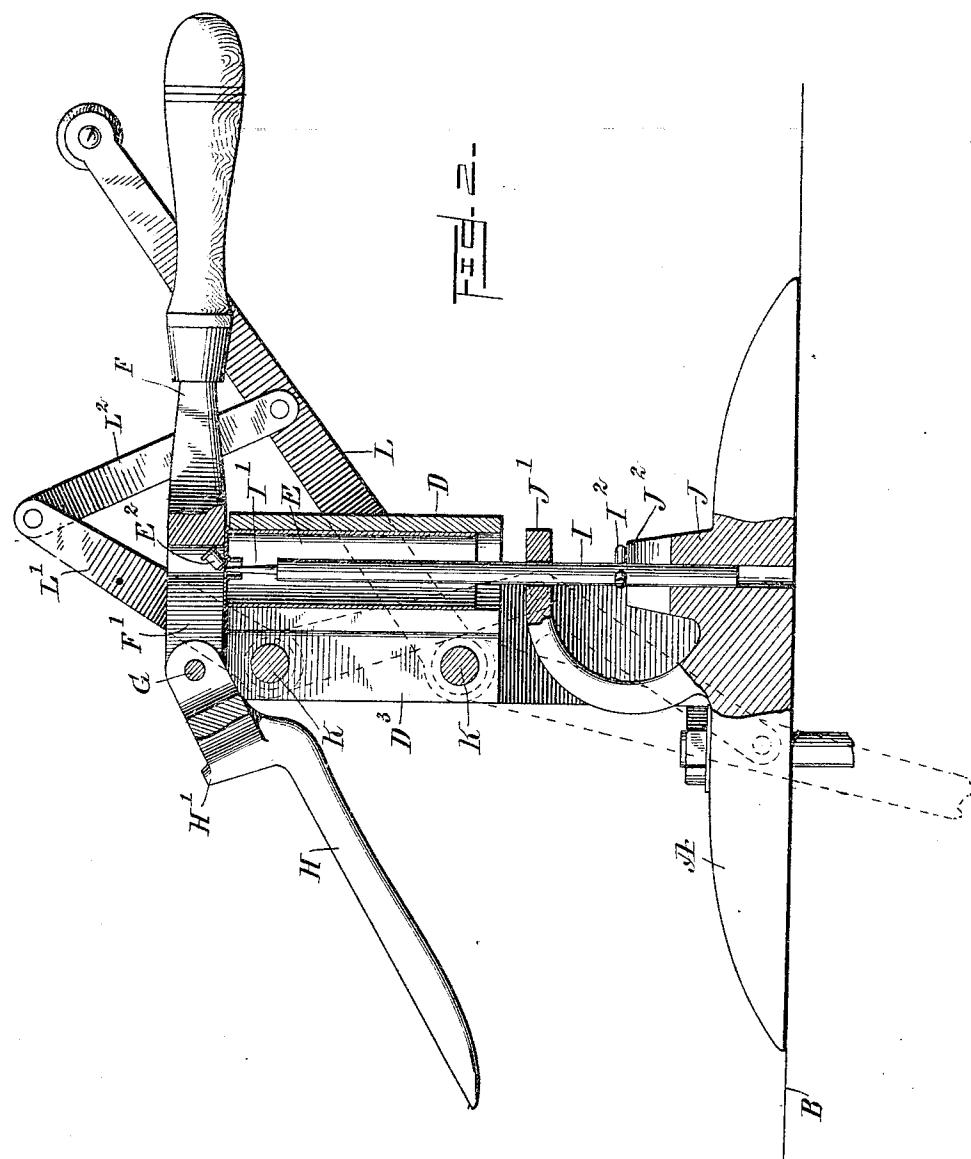
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3 SHEETS—SHEET 2.



WITNESSES:

L. Enfield Hander
Revol. Foster

INVENTOR

Daniel E. Swaysgood
BY *Wm. C. Swaysgood*
ATTORNEYS

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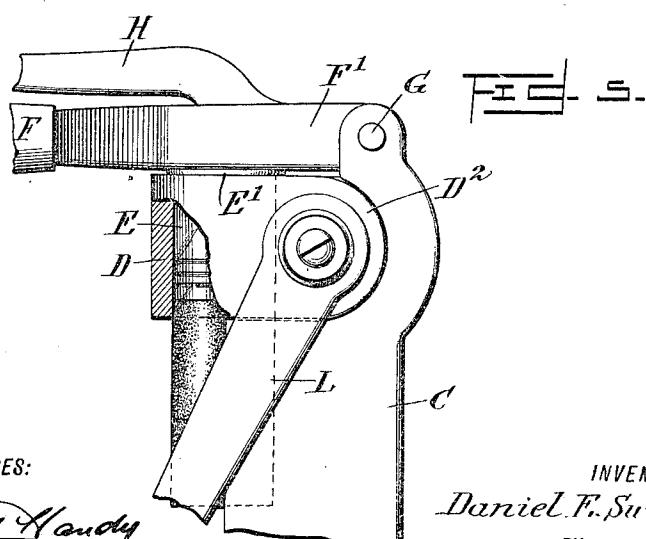
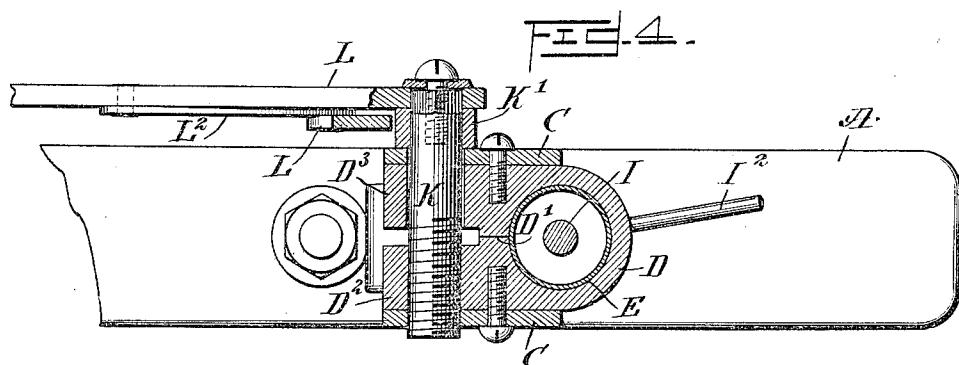
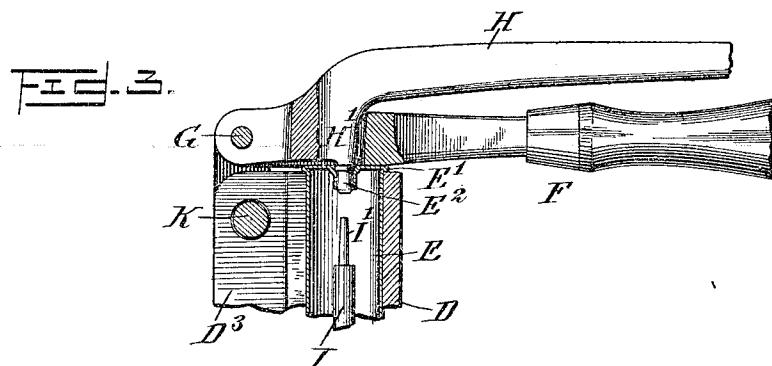
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3 SHEETS—SHEET 3.



WITNESSES:

LeGrand Handy
Rev. G. Webster

INVENTOR
Daniel E. Swaysgood
BY *Murphy*
ATTORNEYS

UNITED STATES PATENT OFFICE.

DANIEL ELMER SWAYSGOOD, OF MARK CENTER, OHIO.

DECAPPING, RECAPPING, AND SIZING MACHINE.

No. 835,480.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed December 17, 1904. Serial No. 237,324.

To all whom it may concern:

Be it known that I, DANIEL ELMER SWAYSGOOD, a citizen of the United States, and a resident of Mark Center, in the county of Delaware and State of Ohio, have invented a new and Improved Decapping, Recapping, and Sizing Machine, of which the following is a full, clear, and exact description.

The invention relates to cartridges; and its object is to provide a new and improved machine arranged to permit convenient decapping and recapping of the shells and accurate sizing thereof.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement arranged for decapping shells made of sheet metal. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a sectional side elevation of the same, showing the parts arranged for recapping the shell. Fig. 4 is a sectional plan view of the same; and Fig. 5 is a side elevation of the improvement as arranged for decapping, recapping, and sizing short shells made partly of sheet metal and partly of paper.

The base A of the machine is bolted or otherwise secured to a suitable support B, and to the said base A are secured standards C, between which is held a vertically-disposed cylinder D, adapted to receive the shell E to be decapped, recapped, or sized, as hereinabove more fully explained. The shell E has its metallic head E' arranged within the usual rim, adapted to be seated on the top of the cylinder D, and the face of the said head E' is adapted to be engaged by the members F' of a forked hand-lever F, fulcrumed on a pivot G, carried by the standards C. A lever-punch H, fulcrumed on the pivot G, is adapted to swing with its fulcrum portion between the members F' of the forked lever F, and on the said fulcrum portion of the lever-punch H is arranged a punch H' proper, adapted to engage a primer E², adapted to be forced into the central opening formed in the head E' whenever it is desired to recap the shell E.

When it is desired to decap the shell E,

then the primer E² is engaged at the inside of the shell E by the terminal I' of an anvil-die I, mounted to slide vertically in bearings J and J', secured on or forming part of the base 60 A. On the anvil-die I is secured a handle I², adapted to normally rest in the bottom of a slot J², formed in the bearing J, and the said handle I² is adapted to rest on the top of the bearing J when the anvil-die I is lifted into 65 an active position—that is, when it is to be used for decapping or removing the primer E² from the head E' of the shell.

In order to size a shell which has been fired, the following arrangement is made: The cylinder D is provided with a split D' and with ears D² and D³, extending integrally from the cylinder adjacent to the split D'. The ear D³ is provided with apertures for the passage of screw-rods K, and the ear D² is provided 70 with registering but threaded apertures, in which screw the said screw-rods K, and each of the latter is provided on its outer end with a shoulder K', abutting against the corresponding standard C. The outer terminals 80 of the screw-rods K are provided with levers L and L', of which the lever L is a hand-lever pivotally connected by a link L² with the lever L', so that when the hand-lever L is swung upward by the operator then a like 85 swinging motion is given to the other lever L'.

By the arrangement described both screw-rods K are screwed up simultaneously, so as to draw the ear D² toward the ear D³, thus closing the split D', and in doing so reduces 90 the interior size of the cylinder to resize the shell E in the cylinder at the time. Normally the lever L is in a lowermost position, as shown in Fig. 1, to allow the cylinder to open by its own resiliency for the convenient 95 insertion or removal of a shell.

The operation is as follows: When the several parts are in the position shown in Fig. 1—that is, when the levers L and L' are in an inactive position and the levers F and H are 100 thrown back and the handle I² is raised on the top of the bearing J—then the operator partly inserts a used shell in the upper end of the cylinder D, as plainly indicated in Fig. 1. When this has been done, the operator 105 swings the hand-lever F over, so as to engage with its members F' the head E' of the shell E, and by bearing down on the lever F the shell is forced further downward in the cylinder D, so that the old primer E² in the shell 110 engages the terminal I' of the raised stationary anvil-die I, whereby the primer E² is

forced out of its seat in the head E' at the time the head E' seats itself on the top of the cylinder D. When this has been done, the operator swings the lever L forward to screw up the screw-rods K to close the cylinder, and thus resize the shell to standard size. During the forward movement of the lever the link L² comes in contact with the handle I² to turn the anvil-die I for the latter to finally drop as soon as the handle I² registers with the slot J² in the bearing J. The lever L is then swung back to its normal position of rest. The operator now places a new primer in position in the opening in the head E', and then swings the lever-punch H forward, so that the punch H' engages the new primer and forces the same home in the cap E'. The levers H and F are then swung rearward, and the operator now slightly lifts the handle I², so as to cause the anvil-die I to lift the shell E in the cylinder D a distance sufficient for the operator to conveniently take hold of the upper end of the shell to draw the same out of the cylinder D.

From the foregoing it will be seen that by the arrangement described the shell is first decapped, then resized, and finally recapped before leaving the machine, and hence it is not necessary to handle the shell a number of times for performing the several operations, thereby saving considerable time and allowing the operator to do the work properly in a comparatively short time and with great accuracy as to the result.

For long shells it is desirable to have two screw-rods K, as described; but for short shells—that is, shells made partly of sheet metal and partly of paper—it is only necessary to employ a short cylinder D and a single screw-rod K and lever L, as indicated in Fig. 5; otherwise the operation is the same as above described—that is, the shell that has been fired is first decapped, then sized, and then recapped.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for decapping, recapping and sizing cartridge-shells, a support, a split cylinder carried by the support for receiving the shell and holding the shell, a forked hand-lever mounted on the support for pressing the shell in place in the cylinder, an anvil-die mounted in the support and extending centrally in the said cylinder and against which the primer is pressed by the hand-lever, to force the primer out of the shell, and a lever-punch mounted upon the pivot of the hand-lever and adapted to swing between the members thereof to engage a new primer to force the same home in the shell.

2. A machine for decapping, recapping and sizing cartridge-shells, a split cylinder, an anvil-die adapted to be raised and lowered and extending centrally in the said cyl-

inder, means for forcing the shell in the cylinder, for the anvil-die to force the old primer out of the shell, means for closing the cylinder along the longitudinal split thereof, to resize the shell, and means controlled by the cylinder-closing means, whereby the anvil-die will be moved into an inactive position.

3. In a machine for decapping, recapping and sizing cartridge-shells, a split cylinder, an anvil-die adapted to be raised and lowered and extending centrally in the said cylinder, means for holding the die raised, a hand-lever for pressing the shell home in the cylinder, for the anvil-die to force the old primer out of the shell, means for closing the cylinder along the longitudinal split thereof, to resize the shell, and means controlled by the cylinder-closing means, whereby the anvil-die-holding means will be released to permit the die to move into inactive position.

4. In a machine of the class described, a support, a split cylinder carried by the support for receiving and holding the shell, means for forcing a shell into the cylinder, an anvil-die mounted in bearings one of which is slotted, the said die being provided with a handle adapted to rest upon the slotted bearing to hold the die raised, and a lever-operated means for closing the cylinder along its split, a lever of said means being adapted to engage the handle of the anvil-die to bring the same into register with the slot of the said bearing.

5. In a machine of the class described, a support, a cylinder carried by the support for receiving a shell, means for engaging the head of a shell to force the shell into the cylinder, an anvil-die in the cylinder and having its lower end projecting beyond the lower end of said cylinder and mounted to slide in the support, and a handle on the lower end of the die and coacting with the support to hold the die raised.

6. A machine of the class described, comprising a cylinder for receiving the shell, a lever for engagement with the head of the shell, to slide the shell lengthwise in the cylinder, an anvil-die central in the cylinder and normally in an inactive position, the anvil-die having a handle for raising and lowering the anvil-die, and a base for supporting the anvil-die in its normal inactive position, the base having a raised portion for the said handle to rest on, to hold the anvil-die in a raised active position.

7. In a machine of the class described, a support, a split cylinder carried by the support and having ears adjacent to the split, a plurality of screw-rods mounted in the support and engaging the ears, for closing the cylinder, a lever on each screw-rod, the levers being of unequal length and the longer one being a hand-lever, and a link pivoted to the end of the short lever and to the long lever intermediate of its ends.

8. In a machine of the class described, a base, a split cylinder carried by the base, means for forcing a shell into the cylinder, a gravity anvil-die mounted to slide in the base and projecting into the cylinder, means for holding the die raised, and means for closing the split of the cylinder, said means also serving to release the die-holding means to allow the die to drop into inactive position.

9. A machine of the class described, comprising a cylinder for receiving a shell and having one end forming a seat for the rim of the shell-head to rest on, a forked lever adapted to engage the face of the shell-head on opposite sides of its center, to hold the shell seated on the cylinder, and a lever-punch adapted to pass between the members of the said forked lever, to engage and press a primer in position on the head of the shell, the said forked lever and the said lever-punch being mounted to swing on a common axis.

10. In a machine of the class described, a support, a cylinder carried by the support for receiving a shell and having one end forming a seat for the rim of the shell to rest upon, a forked lever adapted to engage the face of the shell on opposite sides of its center to hold the shell seated on the cylinder, an anvil-die mounted to slide in bearings in the support, one of the bearings being slotted, and a handle carried by the anvil-die, said handle working in the slot of the bearing and adapted to rest on the top of said slotted bearing to hold the die raised.

11. In a machine of the class described, a support, an open-ended cylinder carried by the support and having a longitudinal split and provided with ears each having two apertures, the apertures of one ear being threaded, screw-rods mounted in the support, the screw-rods passing loosely through the unthreaded apertures and screwing into the threaded apertures of the ears, a lever on one end of each screw-rod, the levers being of unequal length and the longer one being a hand-lever, and a link pivoted to the end of the short lever and to the long lever intermediate of its ends.

12. A machine for decapping, recapping and sizing cartridge-shells, comprising a support, a split cylinder carried by the support for receiving and holding the shell during the several operations, a forked lever mounted on the support for forcing and holding a shell in the cylinder, an anvil-die projecting into the cylinder, means for holding the die raised to permit a primer to be unseated while the shell is held by the forked lever, a lever-punch mounted upon the pivot of the forked lever and adapted to swing between the members thereof to press a primer into the shell, and means for closing the split cylinder, said means also serving to release the die-holding means to allow the die to move to inactive position.

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

DANIEL ELMER SWAYSGOOD.

Witnesses:

B. F. EUOR,
DEY AYERS.