(No Model.)

2 Sheets—Sheet 1.

G. W. MORSE.

CARTRIDGE RESIZING IMPLEMENT.

No. 346,213. Patented July 27, 1886.

Fig. 4.

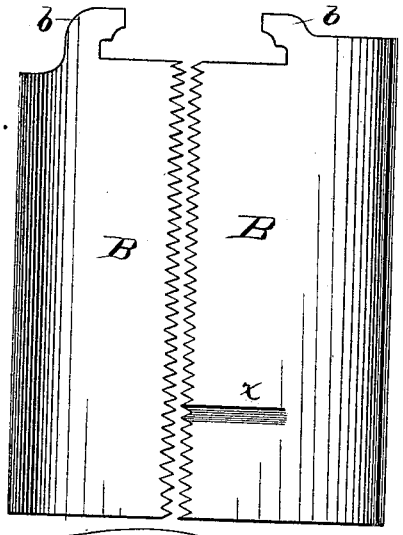


Fig. 5.

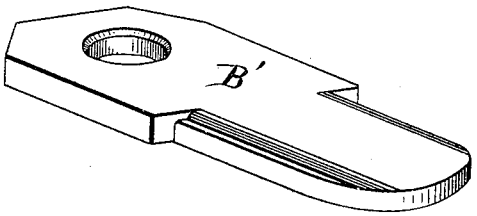
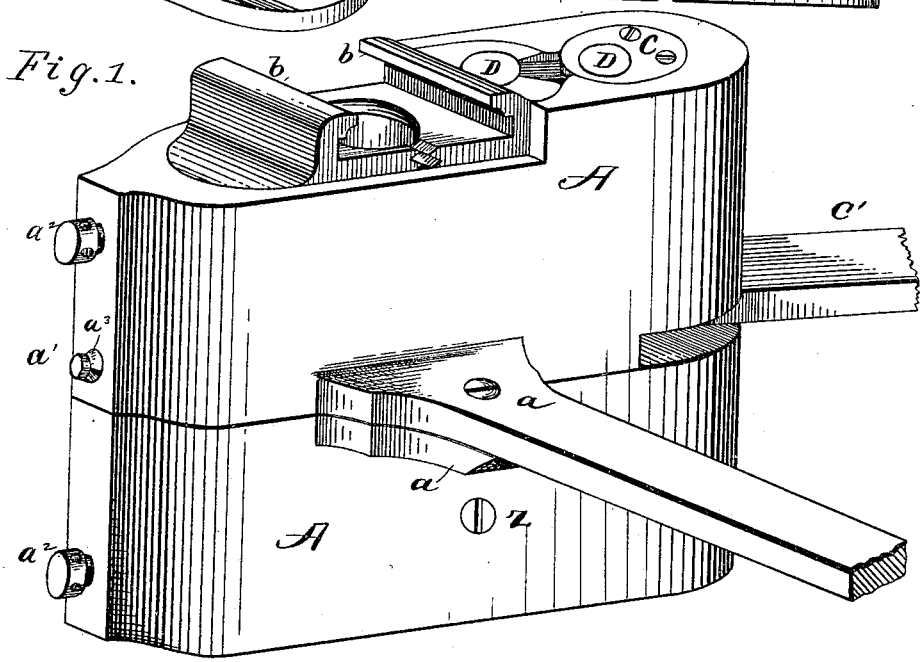


Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

G. W. MORSE.

CARTRIDGE RESIZING IMPLEMENT.

No. 346,213. Patented July 27, 1886.

Fig. 6.

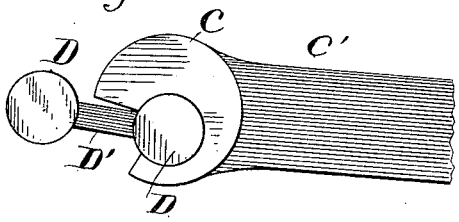


Fig. 2.

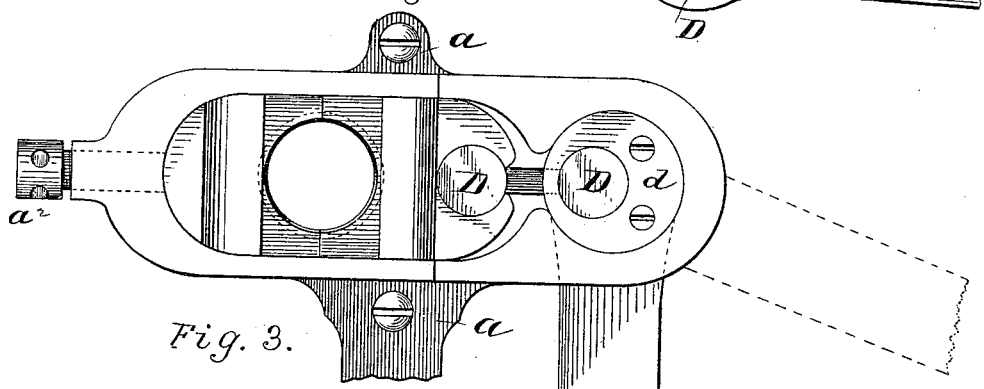
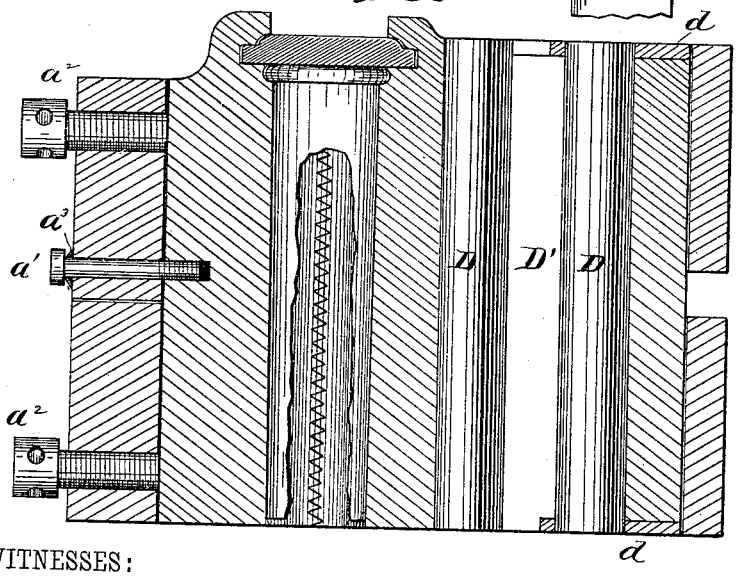


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. MORSE, OF WASHINGTON, DISTRICT OF COLUMBIA.

CARTRIDGE-RESIZING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 346,213, dated July 27, 1886.

Application filed October 1, 1884. Serial No. 144,447. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MORSE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Implements for Resizing Cartridges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to implements for resizing cartridges for fire-arms; and its object is to provide mechanical means for reducing the diameter of cartridge-shells throughout their entire length by compressing the walls thereof toward their axes by clamping between jaws, and to resize the head at the same time that the body is reduced.

In the drawings, Figure 1 is a perspective showing my invention. Fig. 2 is a plan of the same. Fig. 3 is a section showing the clamping-jaws closed upon a cartridge and the head-compressor in final position. Fig. 4 is a side elevation of the compressing-jaws open to receive a cartridge. Fig. 5 is a perspective of a plate, which serves as the head-compressor, ready to be placed in the jaws. Fig. 6 is a plan of my toggle for operating the jaws.

A A constitute a frame or buckle, within which the jaws and toggle are fitted and sustained. The parts of the frame A A are provided with flanges or ears *a a*, which serve as means for bolting the parts together, and one or both of which, from one side, extend out to form a handle or lever for use in operating the device. One of the jaws is normally stationary, and held in place by a screw, *a'*, but adjustable to a slight extent by means of set-screws a^2 a^2. In order that the adjustment may be made without changing the screw *a'*, I place a spring-washer, a^3, between the head of said screw and the body or frame, as shown.

B B are the clamping or compressing jaws, channeled so that when their adjacent edges are brought together the opening in them is circular and of just the dimensions required for a cartridge. The adjacent edges of the jaws are serrated, as shown, so as to lap and support the body of the cartridge at intervals, and thus the possible tendency to crimp or distort the cartridge is prevented. These serrations are chamfered or cut away slightly, so that when the jaws are apart the width of the opening will admit an expanded cartridge.

b b are lips formed with the jaws, provided with bevels, as shown, which operate on the head-compressor B' to reduce the thickness of the head of the cartridge to its proper dimensions just before the jaws are brought together to reduce the diameter of the cartridge.

A groove, *x*, is formed in the movable jaw, and the end of a screw, Z, fits therein to sustain the jaw in position in the frame.

The toggle for operating the movable jaw consists of an eccentrically-socketed cylinder, C, provided with or having formed thereon a handle or lever, C', and a link or bar composed of heads or bearings D D and web D'. The cylinder C is fitted in the frame, as shown at Figs. 1, 2, and 3, its arm or lever playing in a suitable slot through the frame. The heads D D of the link or bar fit in corresponding sockets in the movable jaw and cylinder C. The socket in the cylinder being eccentric, the rotation of the cylinder throws the link or bar and the attached jaw forward or backward, according to the direction in which the cylinder is moved. This form of mechanism gives great power, with adequate strength of parts in a narrow space, and is therefore especially adapted for a hand-tool for giving great pressure.

d d are disks provided with eccentric holes, through which projecting ends of one of the heads of the link work. These disks are secured to the opposite ends of the cylinder C, and serve to hold the link in its proper relation in its bearings, as well as to prevent the jamming of the head in the cylinder-socket in the act of opening the jaws.

The operation of my improved resizing-press is as follows: The jaws being open, an expanded cartridge is inserted in the socket between the jaws or dies, and the plate B' is placed in position under the lips *b b*, whereupon the handle C' is operated to close the jaws. In doing this the inclined lips *b b* first come into operation to bring the plate B' down to compress and resize the thickness of the head of the cartridge, after which the jaws or dies clamp and reduce the cartridge to the predetermined size desired. This operation is performed by the

application of pressure in a direction opposite to that power or pressure which expanded the cartridge.

It is obvious that a crimping-shoulder may be formed on or secured to the interior of the jaws just opposite the forward end of the cartridge, so that as the jaws are closed to reduce the cartridge the front end thereof will be crimped into the groove of the bullet.

It will be observed that the dies press upon the shell from end to end, and that all parts of the shell are compressed simultaneously. This avoids the tendency to bulge or crimp, and insures the perfect conformation of the outer surface of the shell to the shape and dimensions of the resizing-form, notwithstanding the differential pressure required at the opposite ends by reason of the re-enforce and difference in thickness.

By means of the set-screws a^2 a^2 the fixed jaw may be adjusted slightly, so as to bring it into proper relation with the movable jaw. Any suitable locking device may be employed to hold the screws a^2 a^2 from becoming loose or turning in the ordinary use of the device.

I am aware that resizers for cartridges have been used which reduce them as they are driven into a tapering socket or through a ring. Resizers of this class are not adapted to reduce cartridges after they are loaded, and, moreover, the process involved in their use tends to destroy the integrity of the metal near the head, as the force required to drive the cartridge home is very great and must be sustained throughout by the metal just forward of the flange. By my process of applying the force to reduce the cartridge in a direction exactly opposite to that which expands it the difficulty referred to is obviated.

It is observed that the operation is substantially like that of a lathe-chuck acting upon a body, and it will be understood that more than two jaws may readily be combined to carry out the principle of my invention.

Having now described my invention, I claim as new—

1. In a cartridge-resizing press, the combination of a plurality of jaws or dies embracing the cartridge, and movable in a right line with relation to each other toward a common center, whereby the diameter of a cartridge is reduced by the application of force to the entire exterior of the body acting in a direction exactly opposite to that which expanded it, as specified.

2. In a cartridge-resizing press, the combition of jaws or dies embracing the cartridge, moving toward or from each other, and a compressing-plate co-operating therewith and reducing the thickness of the head while the cartridge is retained within the jaws, as specified.

3. In a cartridge-resizing press, the combination of jaws or dies movable with relation to each other toward a common center, provided with lapping serrations, as shown, and provided with inclined flanges or lips on their heads, as b b, and a head-compressing plate embraced by such lips, substantially as set forth.

4. In a cartridge-resizing press, the combination of a frame, jaws or dies embracing the cartridge, and movable with relation to each other toward a common center, and a toggle for operating the movable jaws, as described.

5. The combination, in a cartridge-resizing press, of a toggle consisting of an eccentrically-socketed cylinder and a bar or link, one end of which is pivoted in one of the jaws of the press and the other in the eccentric socket of the cylinder, as shown and described.

6. The combination, in a cartridge-resizing press, of a jaw or die adjustably fixed in the frame, a jaw or die movable in relation thereto, and a toggle for operating the movable jaw, as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEO. W. MORSE.

Witnesses:
V. D. STOCKBRIDGE,
WM. A. ROSENBAUM.