

(No Model.)

O. F. BELCHER.

DEVICE FOR CRIMPING CARTRIDGE SHELLS.

No. 333,589.

Patented Jan. 5, 1886.

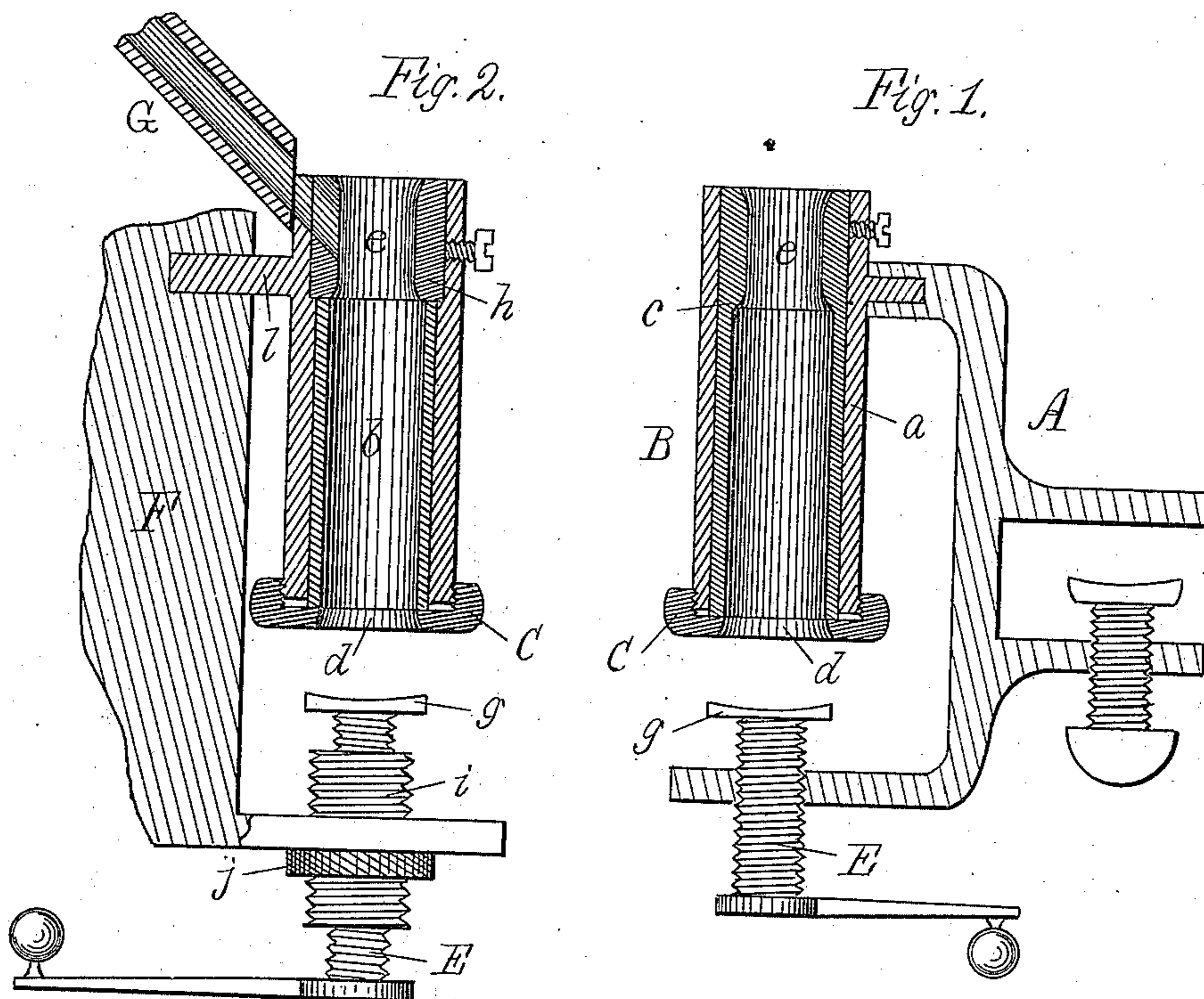


Fig. 3

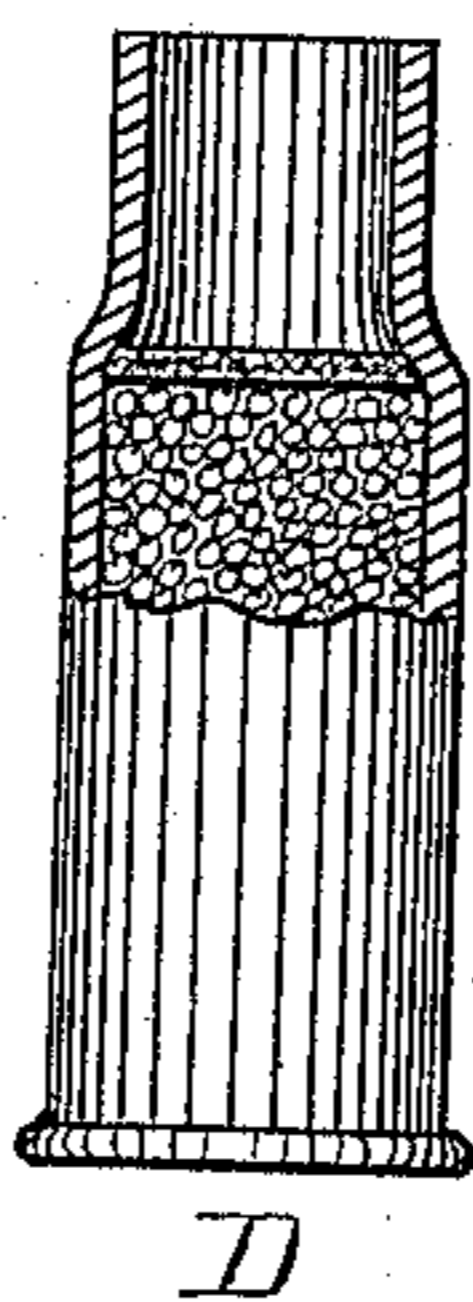
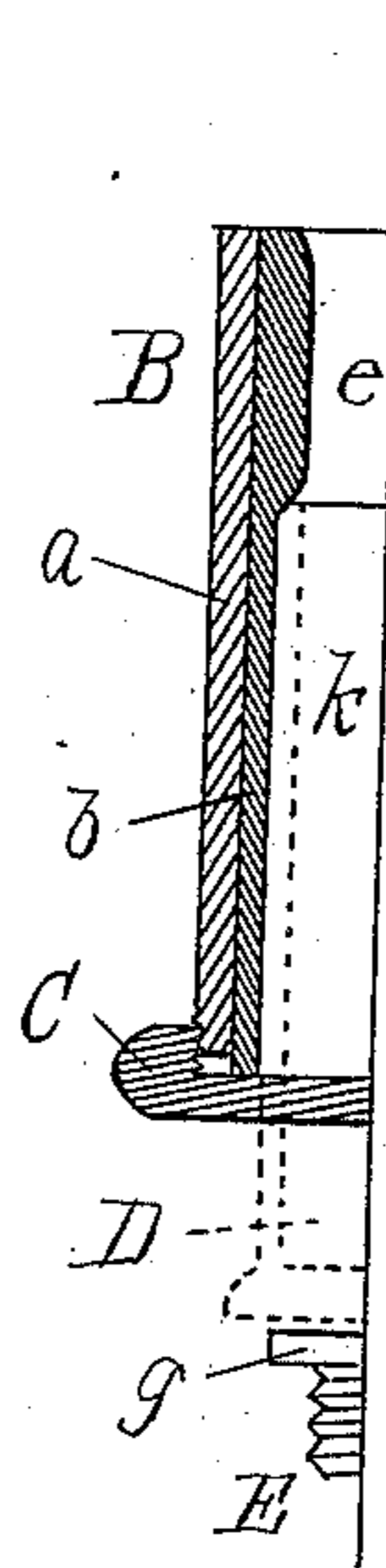


Fig. 4.



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DEVICE FOR CRIMPING CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 333,589, dated January 5, 1886.

Application filed October 10, 1885. Serial No. 179,462. (No model.)

To all whom it may concern:

Be it known that I, ORLANDO FULLER BELCHER, a citizen of the United States, residing at Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Devices for Crimping Cartridge-Shells; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to implements for loading cartridges; and it consists in a device by means of which a contraction or diminution of the unfilled portion of the cartridge is quickly and easily effected, which operation is technically termed "crimping."

My invention consists, especially, in the general arrangement and disposition of the operating parts, by which the implement may serve equally well as an attachment for "cartridge-loading machines," so called, or it may be employed as a "crimper" *per se*, for hand-loaded in contradistinction to machine-loaded cartridges.

The drawings accompanying this specification represent, in Figure 1, a vertical section of a crimping device embodying my invention. Fig. 2 shows a modified form adapted as an attachment for a cartridge-loading machine, while Fig. 3 is a cartridge after being crimped. Fig. 4 represents the position of the cartridge during the process of loading.

As shown in Fig. 1 of the drawings, A represents a standard or casting adapted to be secured to a table or other suitable support during active employment of the tool. This frame in the present instance is constructed with a cartridge-holder, B, which may or may not be cast integral therewith, and is affixed, as shown in the drawings, to a short arm. This cartridge-holder is composed of an outer shell or hollow cylindrical casing, *a*, which is fitted to receive and contain a tubular bushing, *b*. This latter is made removable to permit the introduction of bushings of varying sizes to suit the different cartridges, either paper or metal, as is desired. Furthermore, this bush-

ing is differentially bored, the larger diameter being adapted to contain the cartridge when being loaded, while the smaller one is to receive the unfilled portion of the shell *D* in the act of crimping. By the formation of this contracted oppositely-flared portion *e* in the bushing *b* a shoulder, *c*, is formed of about the thickness of a cartridge, and to compensate therefor. Thus the obstruction offered to the ramming of a wad into the cartridge is obviated. The lower flare is to more readily enable the cartridge, when being crimped, to pass within the contracted portion, while the upper or oppositely-disposed funnel or flare is to more readily expedite matters during the process of loading, and admit the introduction of powder and shot without waste of material.

I have in this instance made the bushing in one piece, since for every size of cartridge the amount which it must be contracted when crimped must vary; hence the contracted portion *e* for a No. 10 shell would not crimp a No. 12 or 14 properly; hence by this method the introduction of a bushing adapted for the latter size, with the contracted portion integral therewith, will positively insure the proper crimping of a cartridge of that number.

To secure the different-sized bushings firmly within the bore of the casing *a*, I have slightly flared their lower extremities, while a screw-thread is cut upon the lower exterior portion of the cartridge-holder to engage and retain the cap *C*, which when screwed home bears firmly against the flared end of the bushing. Moreover, this cap is provided with a bore, *d*, of sufficient size to freely admit the body of the cartridge.

After the introduction of the charge within the cartridge the operation of crimping is effected by means of a screw-threaded rod, *E*, supported in a short arm, *f*, which forms part of and is pivoted to the frame *A*. This screw is provided with a head or shelf, *g*, which supports and upon which the cartridge rests when in the shell-holder *B* during the process of loading; hence it is only necessary to give the handle attached to the screw a few turns and the cartridge is forced upward in the contracted part *e*, when the crimping is completely and effectually accomplished without removal of the cartridge from the implement.

In Fig. 2 I have shown a slight modification of the parts more especially adapted to be used as an attachment upon and with the cartridge-loading machine as described in Letters Patent of the United States, No. 305,136, issued to me on the 16th day of September, 1884. It will be seen upon reference to that patent that a very similar arrangement of parts exists, since the cartridge-holder is to exercise the same functions as hitherto performed, but with an additional one—that of crimping the cartridge. For this reason I have inserted in the upper portion of the shell-holder B a double opposite-flared or funnel-shaped bushing, *h*, and have secured said bushing to the casing *a* by a set-screw or screw-thread, or may be by other means such as will resist the upward thrust of the cartridge against it during the act of crimping. This bushing, it will be observed, is not made integral with the lower one, *b*, holding the shell. This cartridge-holder B incloses the two bushings *b h* from end to end. Furthermore, I have provided the shelf or seat *g*, which upholds the cartridge D when in the holder B, with a handle, whereby a few turns of the latter forces the cartridge upward within the shoulder *e*, and the operation of crimping is performed.

Since the adjustment of the shelf *g* is to vary somewhat with the length of the cartridges in process of loading, and since, for convenience, it is better to have the seat *g* return to a fixed point every time after the crimping of a cartridge, I have secured the screw E within an adjustable bushing, *i*, which is also exteriorly screw-threaded and movable in the arm *f* of the standard A. Thus the bushing *i* may be adjusted up or down and maintained in any desired position by a check-nut. (Shown at *j*.) With such an attachment it will be seen that after the empty cartridge is once placed within the holder B removal of said cartridge is not required until completely loaded and crimped, which is a great advantage in economy of time as hitherto practiced, where generally the cartridge is removed to a special crimping device.

Upon reference to Fig. 4 it will be seen that the internal arrangement of the cartridge-holder B is such that the interior bore, *k*, of the cartridge is in alignment with the contracted portion *e* of the holder; hence in loading there is no obstruction offered to the wads, which otherwise, when forced down, might cripple the material composing the cartridge, while the rounded edge forming the shoulder *c* does not prevent free upward movement of the cartridge when advanced by the screw-threaded rod E.

The shell-holder B in Fig. 1 of the drawings is shown as composed of one piece, with its interior bushing integral, but of two sizes, while in Fig. 2 the bushing is in two parts, and the contraction in the bore or smaller diameter thereof is effected by a bushing; but

I consider this a modification which would suggest itself to any skilled mechanic, and does not, therefore, affect the spirit or depart from the gist of my invention, which consists in a cartridge-holder open at both ends, and adapted to contain a differentially-bored removable bushing, the larger bore to receive the body of the cartridge to be loaded, while the other and small bore is to receive the unfilled part of said cartridge when in the act of being crimped, which result is accomplished by a screw-threaded rod or a reciprocating plunger.

Furthermore, Figs. 1 and 2 have alternative methods of introducing the cartridge into the holder B. In the former figure the holder is fixed to the standard A, and the arm *f*, carrying the forcing-screw E, is pivoted, while in the latter, or Fig. 2, the cartridge-holder is pivotally arranged. Thus F represents a portion of the machine-frame, and *l* the pivot of the cartridge-holder B, which swings in vertical paths of movement, while G represents the delivery end of the duct or passage which conducts the powder and shot to the cartridge then in process of loading.

The operation of this implement, as shown in Fig. 1, is as follows: The operator first swings the arm *f* to one side of the cartridge-holder, and is thus enabled to insert an empty cartridge within the holder from below, when the cartridge is pushed into the position shown in Fig. 4. After this operation the arm *f* is swung back until the shelf *g* is in central alignment with the vertical axis of the cartridge, when a turn or so of the screw-rod E adjusts said shelf into proper position to act as a support for the cartridge, when the powder, shot, and accompanying wads are then introduced into the top of the holder. When the cartridge is loaded, a further turn or two of the forcing-screw E drives the unfilled portion of the cartridge within the bore *e* of the holder, and the crimping is effected. The screw-rod E is now withdrawn, the arm *f* swung around, and the cartridge removed, ready for immediate use, if desired.

I am aware that cartridges hitherto have been crimped in various ways by contracting their diameter above the wad retaining the shot, and therefore in the present instance I do not intend to make any claim to the precise manner in which the diameter of the cartridge is reduced; but

What I desire to claim as my invention is—

1. In combination with the screw E, for acting against the lower end of a cartridge-shell, the lower bushing, *b*, which incloses the body of the cartridge, the upper doubly-flared bushing, *h*, for crimping the upper end of the cartridge, and the cylindrical cartridge-holder B, which incloses both of said bushings from end to end, substantially as set forth.

2. In combination with the screw E and the two bushings *b h*, the screw-threaded holder B, which incloses both of said bushings, and

cap C, which screws on said holder to keep them in place, substantially as set forth.

3. In a crimping device, the combination, with the standard A, pivoted shell-holder B, and co-operating screw E, of the tubular bushing opened at both ends, and provided with a contracted oppositely-flared mouth, which operates substantially as and for the purposes herein described.

10 4. The combination, with the pivotally-dis-

posed cartridge-holder B, composed of the shell *a*, bushing *b*, cap C, and double oppositely-flared bushing *e*, of the forcing-screw E and its support, as herein set forth.

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

ORLANDO FULLER BELCHER.

Witnesses:

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