C. A. R. DIMON.

Cartridge-Loading Implement.

No. 213,877. Patented April 1, 1879.

Fig: 1.

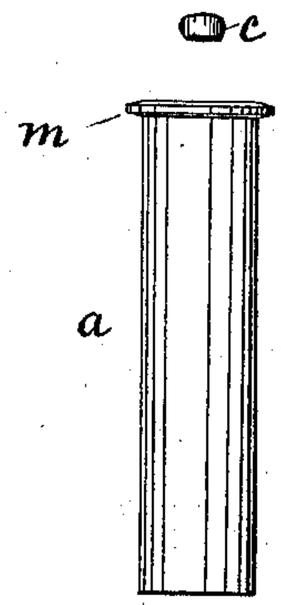


Fig: 9

Fig: 2

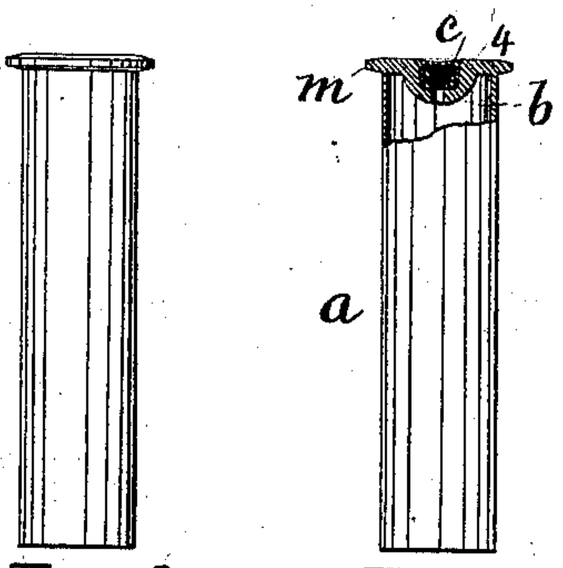


Fig: 10

Fig: 3

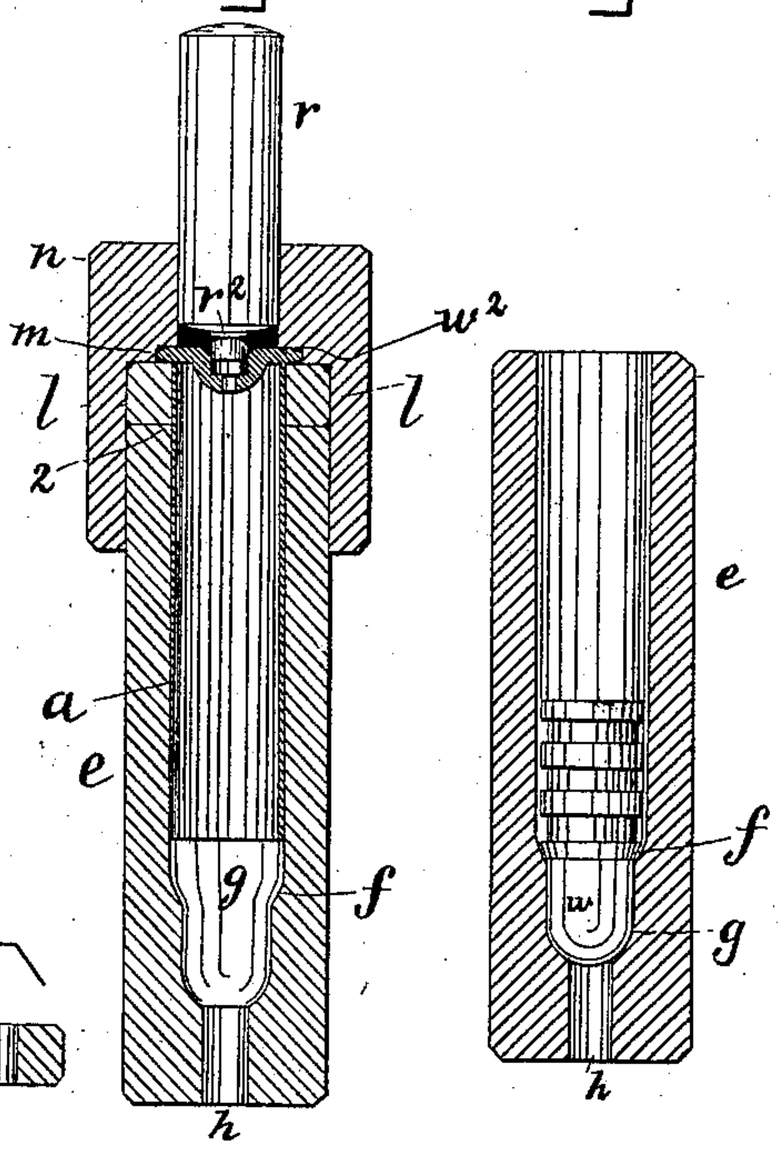


Fig: 4

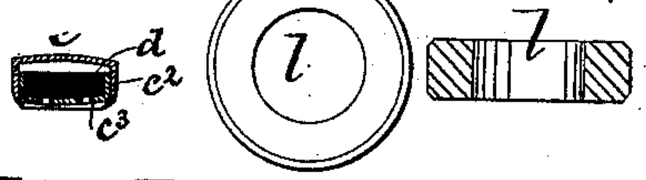


Fig: 5

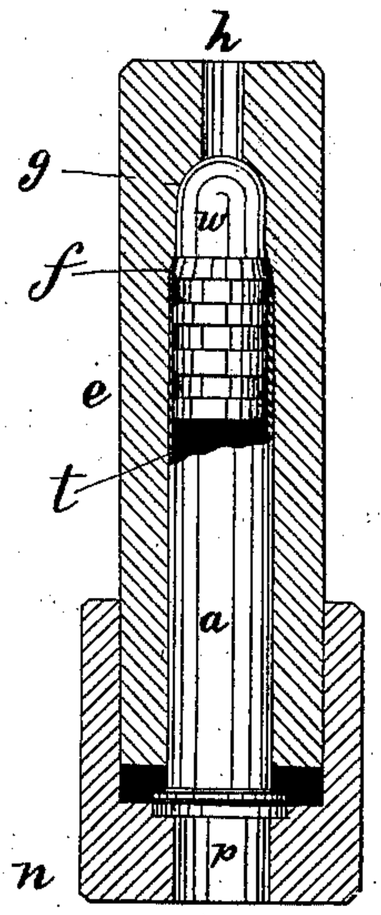


Fig: 6

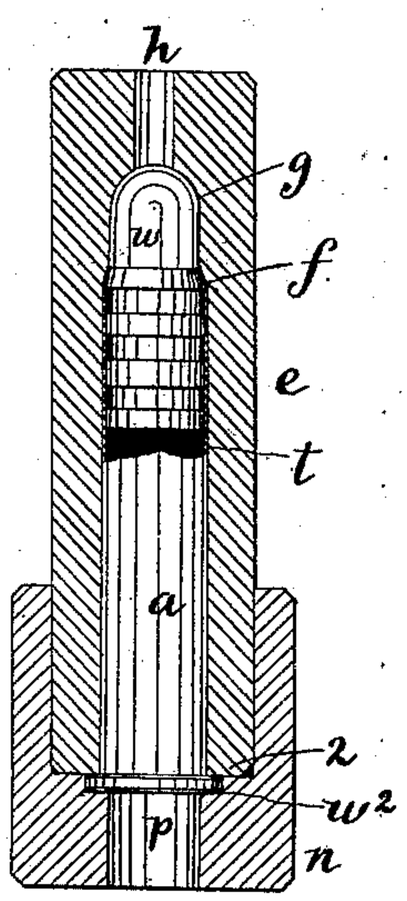
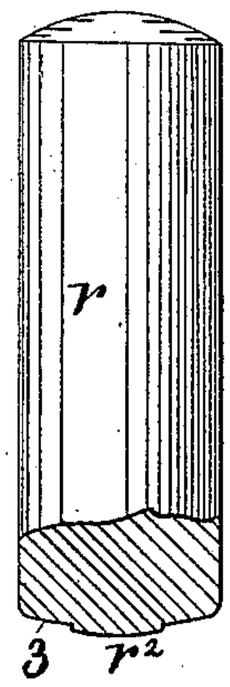


Fig: 7

Fig: 8



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES A. R. DIMON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN CARTRIDGE-LOADING IMPLEMENTS.

Specification forming part of Letters Patent No. **213,877**, dated April 1, 1879; application filed January 13, 1879.

To all whom it may concern:

Be it known that I, CHAS. A. R. DIMON, of Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Reloading Apparatus for Cartridge-Cases, of which the following description, in connection with the accompanying drawings, is a specification:

This invention relates to an apparatus by which to reload a cartridge-case from which a ball has been fired, or to load a new case.

The object of the invention is to produce a reloading apparatus which may easily be carried, be of such light weight as not to seriously inconvenience a soldier, and above all be expeditiously and safely handled.

In this exemplification of my invention the cap, provided with the usual fulminate, is first applied to the portion or base of the case which is made to receive it, and in setting the cap, which is done by means of a capping-punch of peculiar construction, as hereinafter described, the outer surface of the cap is concaved or depressed, so that its lower face substantially touches the fulminate of the cap, the case in the meanwhile being held in an elevated position in the compressing-die.

After the cap has been set, the case filled with powder is entered into the die-opening and made to pass over the end of the ball seated and held centrally therein, when the case is driven into the die until the open end of the case, by the action of the compressing portion of the die, is crimped upon the ball. During this last operation the capped case, then being driven into the die, is so guarded that the cap cannot be struck and fired.

Figure 1 represents in side view a case and a cap before being applied together; Fig. 2, the same after being applied; Fig. 3, a section of the die and other parts in position to cap the case; Fig. 4, the die with the ball held in the ball-seat; Fig. 5, a die provided with a ball and case, the safety guide-block being in position to drive the case into the die and crimp the case upon the ball. Fig. 6 shows the case driven into the die far enough to crimp its lower end upon the ball. Fig. 7 represents the ejector; Fig. 8, a section of the capping-punch enlarged; Fig. 9, an enlarged section of the cap; and Fig. 10, the rim-supporting washer in top view and section.

The metallic case *a* for the cartridge has a central depression, *b*, at its flanged end, within which is applied the cap *c*, composed of an outer shell, c^2, an inner shell, c^3, and an intermediate fulminate, *d*. (See Fig. 9.)

The die *e* is made preferably from a cylindrical block of steel bored to form a chamber for the reception of the case *a*. The opening in the said die, especially when the die is used for military cartridges, is contracted at *f* to form a compressing or crimping portion, and below the crimping portion *f* is a ball-seat, *g*, and below the ball-seat is an opening, *h*, for the reception of the cartridge-dislodging pin *i* of the ejector *j*, which, at its other end, has a cap-detaching pin, *k*, that, after a cartridge has been fired, may be inserted in the case, and the pin *k* be made to strike against the interior of the exploded cap to detach it from the case preparatory to again applying a new cap and reloading the case.

When the case is to be capped the rim-supporting washer *l* is applied between the under side of the rim *m* of the case and the upper end, 2, of the die, so as to keep the open or ball-receiving end of the case from entering the die far enough to meet the crimping portion *f*, which would otherwise crimp its end.

The cap should always be applied before the powder and ball are inserted, to thereby obviate all liability of accident should the cap be exploded when being set.

The case being supported by its rim *m*, as in Fig. 3, the safety guide-block *n*, for capping and balling, is applied about the die and case, and in the central opening, *p*, of the said guide-block is placed the capping-punch *r*, provided at its lower end with a conical protuberance, r^2, of substantially the diameter of the cap *c*. This protuberance is of such length that as the face 3 of the capping-punch meets the flat face 4 of the butt of the case the upper convexed portion, c^2, of the cap *c* will be concaved or sunk just sufficient to place the interior face of c^2 against the fulminate *d*. (See Fig. 2.) This depressing of the cap is of great practical importance, as it insures a ready and quick fire, and relieves the firing-pin of the duty of compressing the part c^2 of the cap *c*, as is now common, and consequently the strain upon the firing-pin is greatly reduced, and at the same time avoids the possi-

bility of the cap coming in contact with the breech-block, and also in magazine-guns with succeeding cartridges.

The case being in the die, as described, and shown in Fig. 3, the capping-punch *r*, guided by the safety guide-block *n*, is driven down and acts to set the cap in the exact position it should occupy.

After the case has been capped, as described, it is taken from the die and the washer is removed, the case is partially filled with powder *t*, and a ball, *w*, is placed in the ball-seat *g*, leaving an open space between the upper or large end of the ball and the inner wall of the die passage or opening, the upper end of the ball extending above the compressing portion *f* of the said die, as in Fig. 4.

The case being partially filled with powder is held open-end up, while the die with a ball in it is passed over the case, and during this operation the case, guided or directed by the wall of the die, is passed over and made to encompass the butt-end of the ball, the space between the large end of the ball and the interior of the die being sufficient for the entrance of the case between them. Holding the ball in this way in the die while the case is slipped over it is more expeditious, convenient, and correct than the old plan of putting the butt of the ball into the case by hand.

The case having been started over the end of the ball, and the safety-block resting on a firm support, (see Fig. 5,) by the action of a hammer, or by a blow upon the end of the die, the die is driven down to the position shown at Fig. 6, the open end of the case, during the descent of the die, meeting the portion *f*, whereby the end of the case is crimped upon the ball below its grooved portions, which may be filled as usual with grease, and when the die-block and block meet the case is crimped upon the ball.

The safety guide-block has a shoulder, w^2, which rests upon the extreme outer edge of the rim of the cartridge-case, and opposite the cap or central or firing part of the said block is an opening, *p*, to avoid the possibility of a blow upon the cap when the case is being crimped about the ball, and in this way the block *n* is made a safety-block, for it prevents the possibility of accidentally firing the cartridge as the case is being driven upon the ball.

The block *n* is chambered to fit the outer side of the die, whereby the block is guided in the exact line of the die.

In loading cartridges, such as sporting cartridges, in which the case is not necessarily crimped, because the friction between the ball and case is sufficient without it, the die *e* is made without tapering the part *f*.

This apparatus is so light and simple that a soldier can carry it during the march without inconvenience.

The cartridge herein described and shown as provided with a concaved outer shell or case depressed to a position substantially in contact with the fulminate is not herein claimed, as it will form the subject-matter of another application for Letters Patent.

In this my invention it will be observed that the cartridge-case when being capped, and when being crimped, is held within one and the same die, and not first supported outside a mandrel and then within a socket while a ball is applied, as heretofore common.

I claim—

1. A reloading apparatus composed of a die to receive a metallic case within it, a rim-supporting washer to be applied to the die to support the case solely by its annularly-projecting rim, a safety guide-block provided with a central opening, and a capping-pin, to operate substantially as described.

2. The die provided with the opening for the case and the rim-supporting washer, combined with the safety guide-block provided with a shoulder, w^2, and adapted to surround the washer and fit closely to the outer end of the die, and with the capping-pin, to operate substantially as described.

3. The die provided with a die passage or opening shaped to hold the ball and crimp the case as it is driven into the die-opening, combined with the safety guide-block, having a central opening and a shoulder, and fitted to be guided by the outer portion of the die as the said block is made to force the case into the die-opening, substantially as and for the purpose set forth.

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

CHAS. A. R. DIMON.

Witnesses:
W. D. GILKEY,
E. I. KENYON.