

R. WHITE.
CARTRIDGES.

No. 179,634.

Patented July 4, 1876.

Fig. 1.

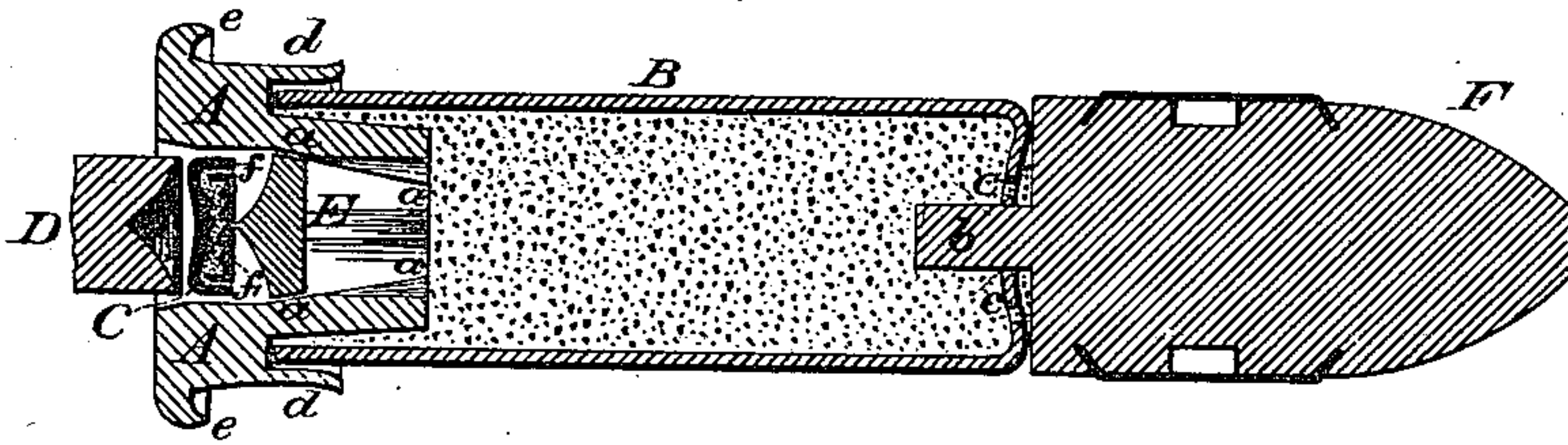


Fig. 2.

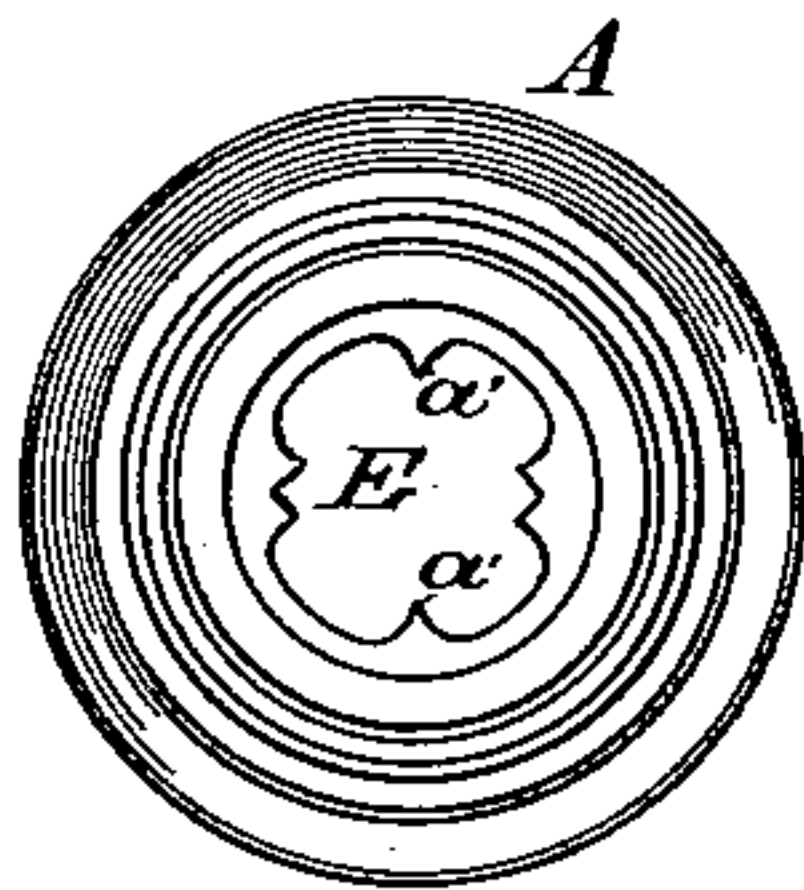


Fig. 7.

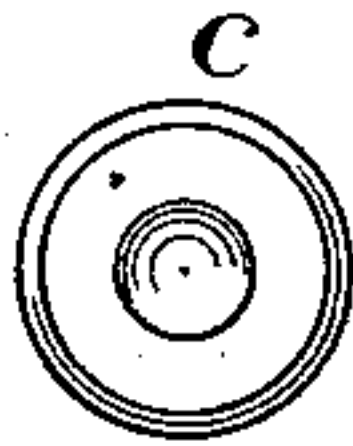


Fig. 10.

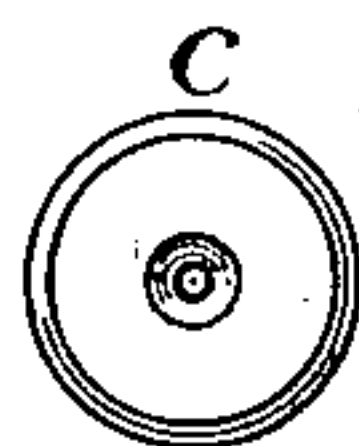


Fig. 13.

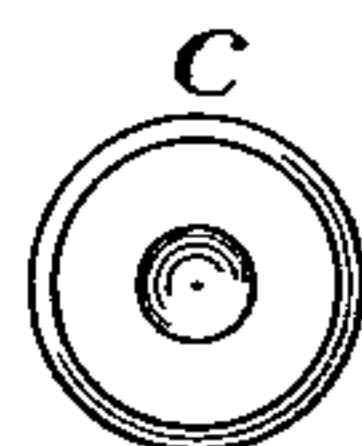


Fig. 3.

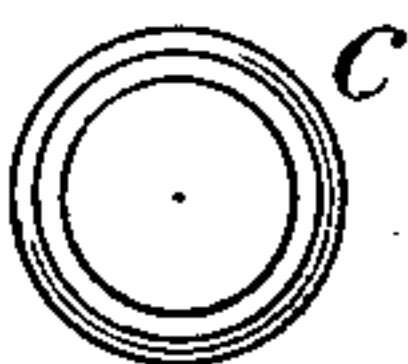


Fig. 5.



Fig. 8.



Fig. 11.

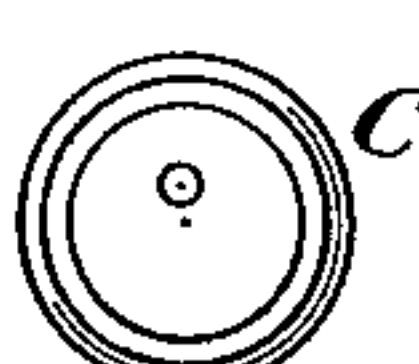


Fig. 14.



Fig. 4.

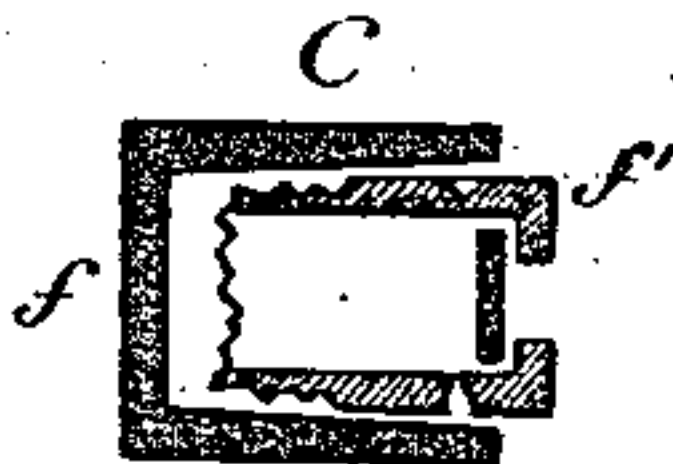


Fig. 6.

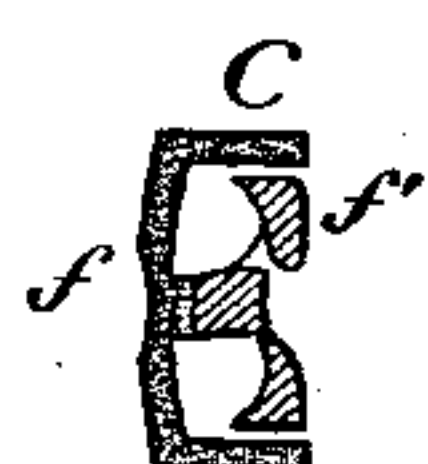


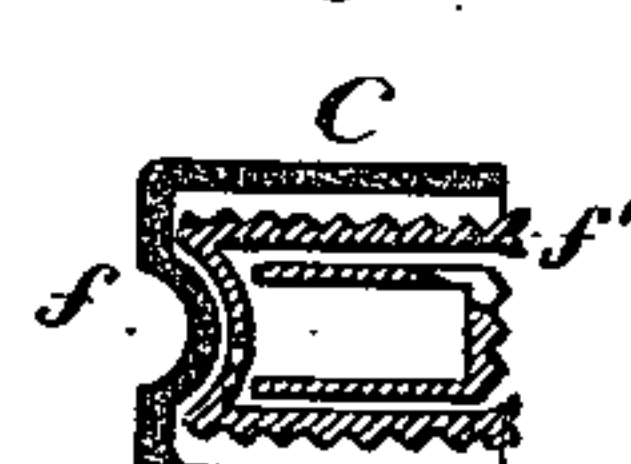
Fig. 9.



Fig. 12.



Fig. 15.



Attest:
Charles Thurman.
L. W. Seely

Inventor:
Rollin White.
by Geo. W. Dyer to
attys.

UNITED STATES PATENT OFFICE.

ROLLIN WHITE, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN CARTRIDGES.

Specification forming part of Letters Patent No. 179,634, dated July 4, 1876; application filed March 20, 1876.

To all whom it may concern:

Be it known that I, ROLLIN WHITE, of Lowell, Middlesex county, Massachusetts, have made certain new and useful Improvements in Cartridges for Fire-Arms, of which the following is an accurate description, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the cartridge, with projectile in place. Fig. 2 is an elevation of the front end of the base of the same. Fig. 3 is the front end of the primer. Fig. 4 is a vertical longitudinal section of the same. Fig. 5 is the front end of a modification of Fig. 3; Fig. 6, a vertical longitudinal section of Fig. 5. Fig. 7 is the rear end of a modification of Fig. 3; Fig. 8, the front end of the same; Fig. 9, a vertical longitudinal section of the same; Fig. 10 is the rear end of a modification of Fig. 3; Fig. 11 is the front end of the same; Fig. 12, a vertical longitudinal section of the same; Fig. 13 is the rear end of a modification of Fig. 3; Fig. 14, the front end of the same; Fig. 15, a vertical longitudinal section of the same.

Like letters denote corresponding parts in each figure.

The object I have in view in my invention is the production of a cartridge, the base of which may be conveniently reprimed and reused, which will be economical in manufacture, effective in use, and conveniently extracted for a second use; and my invention therein consists principally in such a construction of the cartridge that it may be fired by pressure or friction, instead of by concussion, that the body of the cartridge may be easily separated from the shell, so that the latter may be preserved, and that the quantity of fulminate may be increased or diminished without changing the sensitiveness of the primer, and in the various operative combinations of the principal parts.

In order to enable those skilled in the art to make and use my cartridges, I now proceed to describe the same more fully.

A represents the base of the cartridge, which is separate from the body B; C, the primer; D, the plunger or firing-pin; E, the vent, with converging sides *a*, and *a'* flanges to same; F, the projectile; and *b*, the stem of

the same, where it enters and is secured in the cartridge; and *c*, the vent-opening at the front end of the cartridge.

It will be observed that this base has an external flange, *d*, between which and the walls of the vent is a recess into which the body B is compressed and retained by friction. This flange, however, should turn out a little toward the front end, so that when the cartridge is put in position in the chamber of a pistol for discharge, the flange, by compression, will fit more tightly in such chamber. This base has also a hook-shaped flange, *e*, in order to adapt it better for extraction. The primer C is composed of an outer cup, *f*, and an inner cup, *f'*, with roughened or indented inner surfaces. The inner cup *f'* is smaller than the outer cup, and when placed therein there should be space between the side walls of both cups for fulminate as well as between the cups in the usual way.

As has been already indicated this cartridge is adapted to be exploded by compression, or by friction, the mechanism for doing which is described in an application which I have filed for Letters Patent of the United States.

In discharging the cartridge shown in Fig. 1, the plunger D forces the primer C into the vent E, and by the compression of the side walls of the primer by the converging sides of the vent, or by flanges *a* in its passage through the vent, the fulminate in the primer is ignited, and fire communicated to the cartridge, the outer cap *f* remaining in the vent, as shown in shaded lines in Fig. 1, and serving to stop back escape in the usual way. When the base is reused it requires simply the insertion of another primer, with or without the removal of the exploded cap *f*, which, if allowed to remain, will not affect the discharge of the new primer.

The manner shown in Fig. 1 of securing the projectile in the cartridge by means of the stem *b*, gives a better support to the projectile, which may be cemented, riveted, or held by powder-cake; and at the same time the closed end of the cartridge-body by its support enables the body to be of thinner metal or of other cheaper material, and the vent-holes *c* will insure the separation of the projectile from the cartridge-body, which, in all in-

stances will pass out of the barrel of the fire-arm in its discharge.

It is evident that there may be many modifications of a primer adapted to be discharged by compression or friction, of which another instance is shown in Figs. 3 and 4, where the inner cup *f'* has a rough inner edge and rough outer walls, and an opening in the bottom of the cup, and a wad or plate to hold the fulminate, or powder, or both, which may be placed therein.

Figs. 5 and 6 show another modification, in which the opening is of a crescent form, which may be effected by having a seam through the plates, by means of which a free portion can be bent so as to make the vent larger or smaller, as desired.

Figs. 7, 8, and 9 show another modification for a more sensitive primer, in which there are two openings close together in the inner cup, preferably inclined in opposite directions, by means of which a communication with the cartridge is more certainly effected. In this modification the outer cup is shown with the center recessed and made thinner at that point, and a wad is also shown in the interior between the cups, to protect against an untimely explosion.

It will be observed that the openings above mentioned in the inner cups, as shown in Figs. 5, 6, 7, 8, and 9, are made in a recess in the face of such inner cups, the object of which, by its arching form, is to give better support to the metal already weakened by such opening.

Figs. 10, 11, and 12 show another modification, intended for a still more sensitive primer, where a thin intermediate plate and a wad inserted between the two cups and an additional small cup inserted over an anvil in the inner cup. By this means a very sensitive primer is insured, sufficiently protected against untimely explosion, and adapted to hold the fulminate against loss or escape in handling.

Figs. 13, 14, and 15 show another modification of a sensitive primer, in which there is an intermediate inverted cup, the outer walls of which are roughened, between which cups it is intended to place fulminate.

It is to be understood that in the foregoing description, where the inner cup is mentioned, there is intended to be covered not only cups properly, but cylinders or plates more or less dishing, which effect the same result.

It is evident that, with regard to the con-

verging sides and the converging flanges of the vent, that either or both of these features may be adopted in fire-arms or in ordnance, and become a permanent construction in the same, to be used with the primer described, instead of having the same in the cartridge itself.

Having thus described my improvement, what I claim as new therein, and of my own invention, is—

1. In a cartridge-primer, the combination of an outer cup and an inner cup, with a space within the walls of the two cups, one or both of the adjacent walls being roughened, substantially as and for the purposes described.

2. In a cartridge-primer, as described, a separate wad or plate interposed between the cups, substantially as and for the purposes set forth.

3. A cartridge-primer with a cut or seam through the face, so that the portion of the metal included in the cut or seam may be bent and produce a vent, which may be enlarged or diminished as the metal is more or less bent, substantially as described.

4. A cartridge-primer with openings in the face of the inner cup leading out of separate arched recesses, substantially as and for the purposes set forth.

5. In combination with a primer, a cartridge provided with converging flanges adapted to compress the primer passing between them, substantially as and for the purposes described.

6. A cartridge with a vent in its base, having converging flanges, substantially as described.

7. A cartridge with a hooked flange to its base, to assist in the ready extraction of the same, substantially as described.

8. In combination with a cartridge-body adapted to be discharged, and having a close forward end, the projectile *F*, having the stem *b* secured to the forward end of the cartridge-body, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of March, 1876.

ROLLIN WHITE.

Witnesses:

E. L. WHITE,
H. R. WHITE.