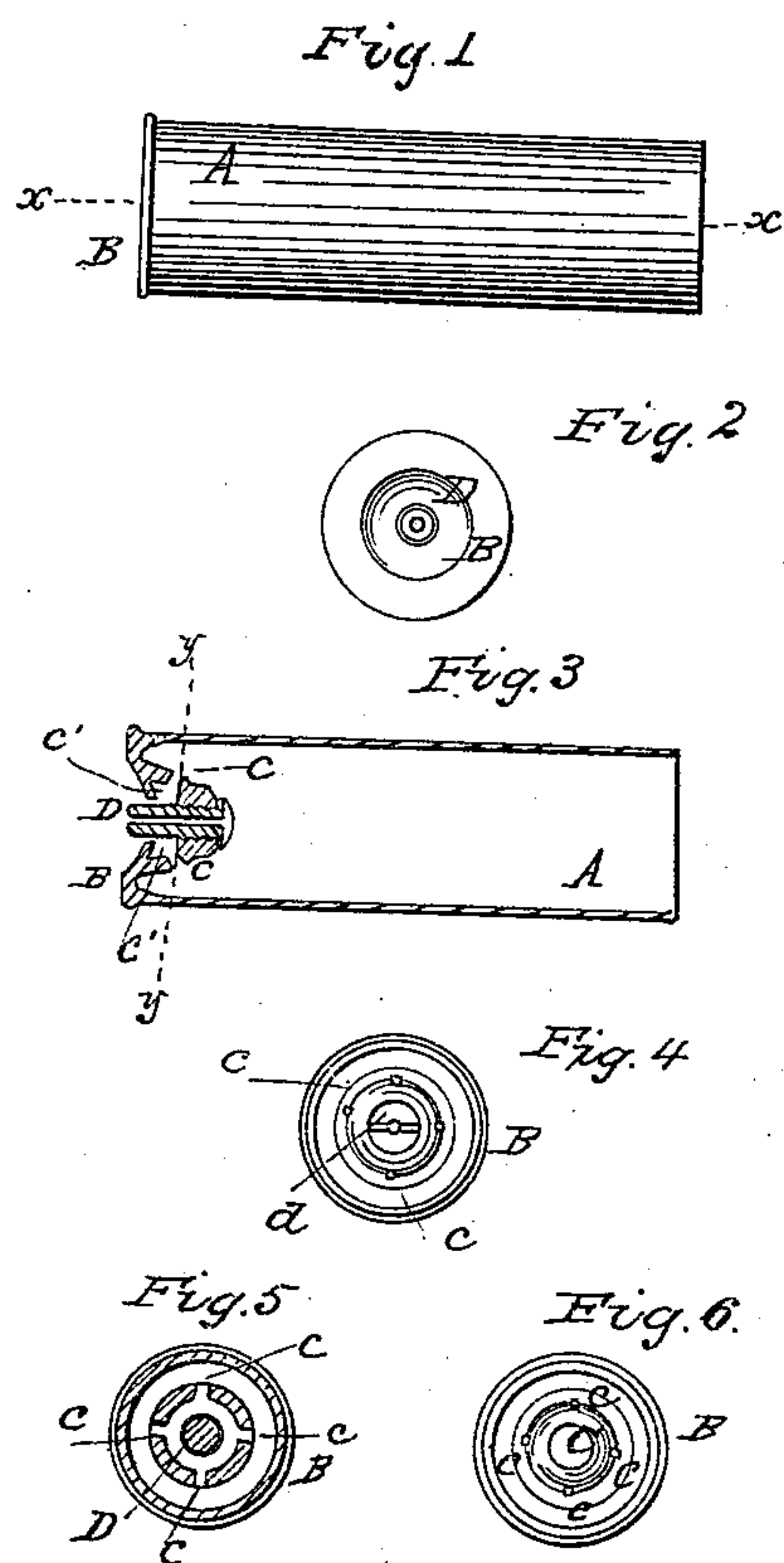


W. H. SMITH.  
Metallic Cartridge.

No. 98,439.

Patented Dec. 28, 1869.



Witnesses  
Chas H Poole  
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attys

# UNITED STATES PATENT OFFICE.

WILLIAM H. SMITH, OF CHARLESTOWN, MASSACHUSETTS.

## IMPROVEMENT IN METALLIC CARTRIDGES.

*Specification forming part of Letters Patent No. 98,439, dated December 28, 1869.*

*To all whom it may concern:*

Be it known that I, WM. H. SMITH, of Charlestown, in the county of Middlesex, and in the State of Massachusetts, have invented a certain new and useful Improvement in Cartridges for Breech-Loading Fire-Arms; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a side elevation of my improved device. Fig. 2 is an end elevation of the same. Fig. 3 is a longitudinal central section on the line *x x*, of Fig. 4. Fig. 4 is an elevation of the inner face of the head. Fig. 5 is a cross-section on the line *y y* of Fig. 3; and Fig. 6 is an elevation of the inner face of the head, with the nipple removed.

Letters of like name and kind refer to like parts in each of the figures.

My invention belongs to a class of cartridges used for breech-loading fire-arms, in which the charge is exploded by means of an ordinary cap applied to a nipple upon said cartridge, so as to permit the case to be re-charged and used.

In ordinary cartridges of this class, upon exploding a cap, a small portion only of the fulminating-gases pass into the cartridge through the opening in the center of the nipple, the balance forcing its way outward around said nipple, so as to not only be of no service in igniting the powder, but also to foul and corrode the mechanism of the gun.

To obviate this is the design of my invention, which consists in the employment of a recess or chamber outside of and near the base of the nipple, which chamber communicates with the interior of the case by means of a number of openings, substantially as hereinafter described.

It also consists in the peculiar construction of the nipple, and in the manner of its application to the head, as is hereinafter specified.

In the annexed drawing, A represents the cylindrical portion of the case, composed of sheet metal, in the usual manner.

The front end of the case A is open for the reception of the charge, while its rear end is closed by means of a head, B, having the general form shown in Fig. 3, its outer face being

slightly concave, while its inner face extends inward in the form of a cone.

Extending longitudinally through the center of the head B is an opening, C, through which passes a nipple, D, having the customary form of its outer end for the reception of the cap, from whence it slightly increases in size, and is provided with a head, *d*, at its inner end.

A male screw-thread is provided upon the periphery of the nipple immediately above the head *d*, which, fitting into a corresponding female screw-thread within the forward end of the opening C, holds said nipple firmly in place within the head, said nipple being inserted from within the case, and screwed home by means of a screw-driver, for the reception of which a suitable slot is provided within its end.

As thus arranged, the outer end of the nipple projects slightly beyond the concave portion of the outer face of the head, at which point the opening C is of such a size as to permit an ordinary cap to pass between its walls and the nipple; but immediately beneath said surface said opening is expanded laterally, so as to form a recess or chamber, C', having about twice its former diameter, and extending inward to a point just beyond the lower or inner end of the cap.

A number of small openings, *c*, passing radially outward and forward from the chamber C' into the interior of the case, completes the device, the operation of which is as follows:

Upon the explosion of the cap, the gases which would otherwise be thrown backward pass forward into the chamber C', and from thence through the openings *c* into the cartridge, by which means their fouling and corroding effect upon the mechanism of the gun is avoided, and the ignition of the powder rendered certain, as it not only receives the entire charge of fulminating-gas, but is operated upon at five different points at one and the same time, instead of at one point, as is usually the case.

Having thus fully set forth the nature and merits of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The chamber or recess C', surrounding the base of the nipple D, and communicating with the interior of the cartridge by means of a



number of openings, *c*, substantially as and for the purpose specified.

2. The nipple *D*, constructed as described, in combination with the head *B*, provided with the recess *C'* and openings *C* and *c*, substantially as shown, and for the purpose set forth.

In testimony that I claim the foregoing I

have hereunto set my hand and seal this 19th day of November, 1869.

WM. H. SMITH. [L. S.]

Witnesses:

ZADOCK BRADFORD,  
G. D. COOPER.