A. B. SMITH.

CARTRIDGE.

No. 189,069. Patented April 3, 1877.

Fig. 1.

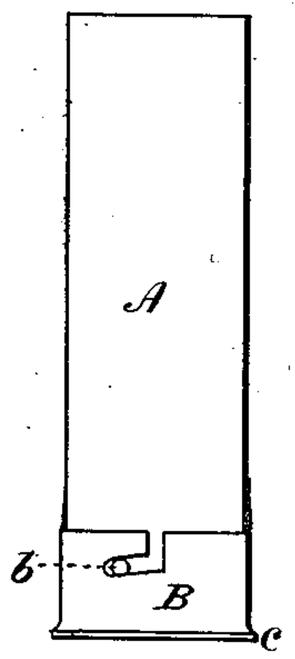


Fig. 2.

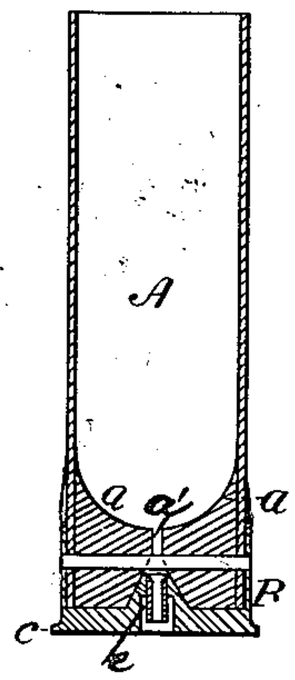


Fig. 4.

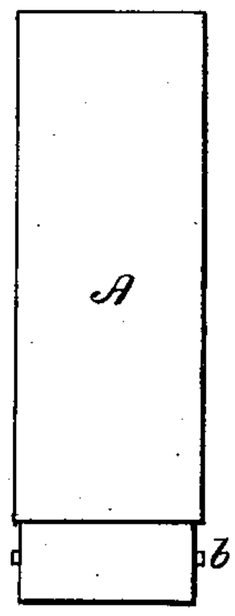
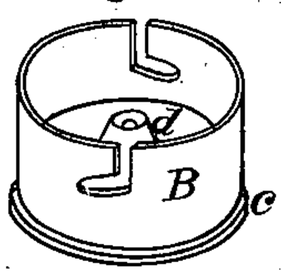


Fig. 3.



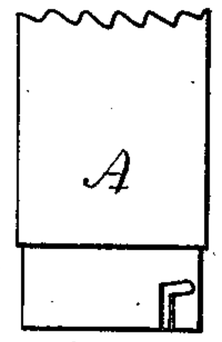
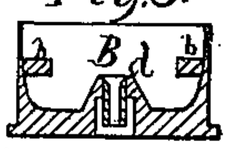


Fig. 5.



Witnesses

J. Jones

H. Dale

Inventor

A. B. Smith

by J. J. Greenough Atty.

UNITED STATES PATENT OFFICE.

ALBERT B. SMITH, OF GENEVA, NEW YORK.

IMPROVEMENT IN CARTRIDGES.

Specification forming part of Letters Patent No. **189,069**, dated April 3, 1877; application filed February 6, 1877.

To all whom it may concern:

Be it known that I, ALBERT B. SMITH, of Geneva, New York, have invented certain Improvements in Cartridge-Cases for Fire-Arms, of which the following is a specification:

My invention relates to the construction of a cartridge-shell formed of paper or like cheap material, to which a metallic base or cap can be readily attached, by which the fulminate is kept separate from the loaded cartridge until it is ready for use, at which time it has free and open communication with the charge, by which means the body of the shell only is thrown away, and the base or cap is retained for further use, the greatest safety, simplicity, and cheapness in making, loading, and handling the ammunition being thereby attained.

The special object of my invention is to so securely and accurately unite the paper shell and the metal base or head B, in the axis of which the percussion-cap is located, as to insure their being readily and properly inserted in the fire-arm when united, with a certainty of being discharged.

The construction is as follows, referring to the accompanying drawing, in which Figure 1 is a side view of a shell. Fig. 2 is a vertical section in the plane of the axis of the cylindrical shell. Fig. 3 is a perspective view of the base or cap. Fig. 4 is a shell re-enforced with metal at the base; Fig. 5, a modification.

The same letters of reference are used in all the figures.

A represents a hollow cylinder or shell of paper or any suitable cheap material suited to the purpose, in the base of which a disk of wood or other sufficient material, *a*, forms a head, in the center of which there is a conical hole, *a'*. A piece of wire, *b*, runs radially through the shell, projecting slightly on both sides beyond the surface. The base of the conical hole in the disk *a* is closed by a thin paper impervious to dampness.

The base or cap B, of brass or other metal, is a short cylinder, closed at the rear end by the head *c*, that projects beyond the sides, as seen in the figures. The sides are thin, forming a cup, into which the shell A accurately fits, the edges of the cap being cut to form a bayonet-fastening on each side to receive the projecting ends of wire *b*, by which the two parts are securely united and easily separated at will. A small projection, *d*, stands up from the inner face of head *c* at the center, which, when the parts A B are united, breaks through the paper and opens directly into the charge in the shell A. A hole is made down through the center of this projection *d*, and an annular recess is made around it on the outside at *e*, to form a nipple for a percussion-cap of usual form.

When it is deemed necessary, the base of the paper shell that enters cap B may be re-enforced with a metal ring, (shown at Fig. 4,) and Fig. 5 shows the bayonet-fastening pins *b* projecting inward from the base B, and the slot cut in the paper shell A.

I am aware that paper diaphragms have heretofore been applied to the inside of the shell to prevent the escape of powder; but I find such application objectionable, for the reason that when a weak cap is used the fire sometimes fails to penetrate said diaphragm. In my construction this objection is obviated by rupturing the diaphragm in the act of connecting the head and shell, thus leaving an open passage for the fire from the fulminate.

Having thus described my improvements, I claim—

1. A metallic cup-shaped head, B, for cartridges formed with a conical projection, *d*, on its interior face, in combination with shell A, formed with a conical opening in its base, the head and shell constructed to be secured together by bayonet-fastening, as shown and described.

2. The paper diaphragm covering the base of the cartridge when applied on the outside of the shell, so as to be ruptured in the act of connecting the base to the shell, as set forth.

ALBERT B. SMITH.

Witnesses:

ARTHUR B. BURTIS,

E. SEYMOUR YOUNG.