

No. 640,856.

Patented Jan. 9, 1900.

C. A. BAILEY.
CARTRIDGE.

(Application filed July 3, 1899.)

(No Model.)

Fig. 1.

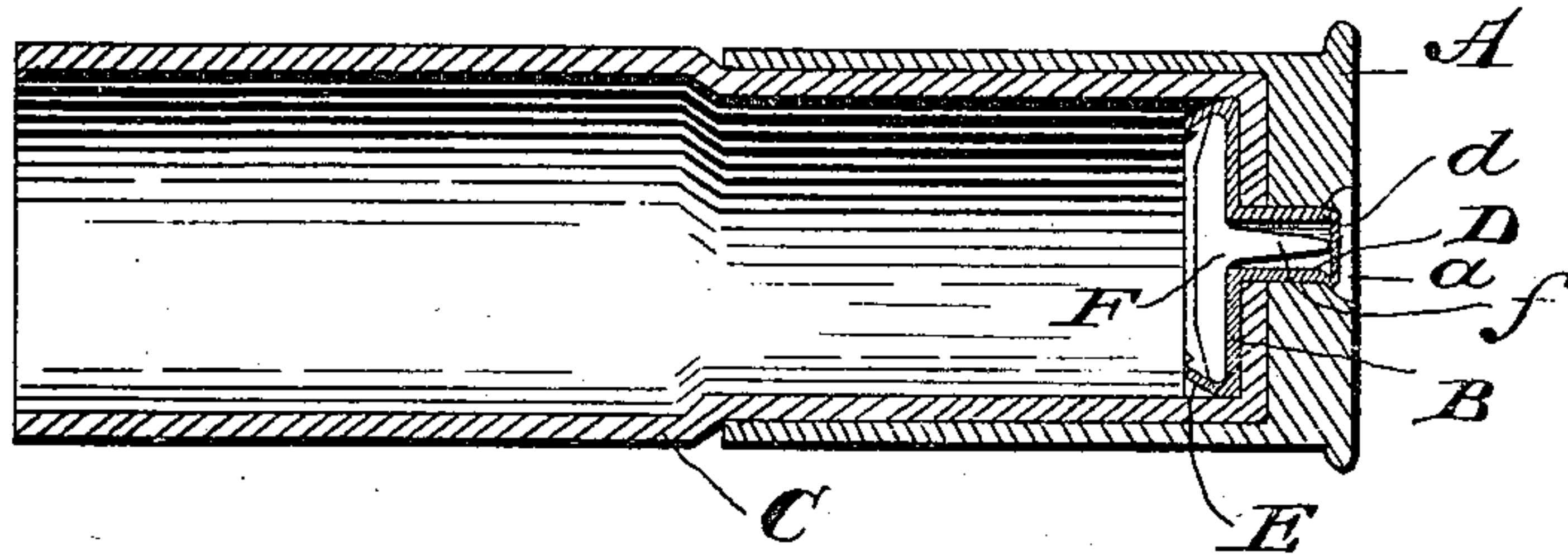


Fig. 2.

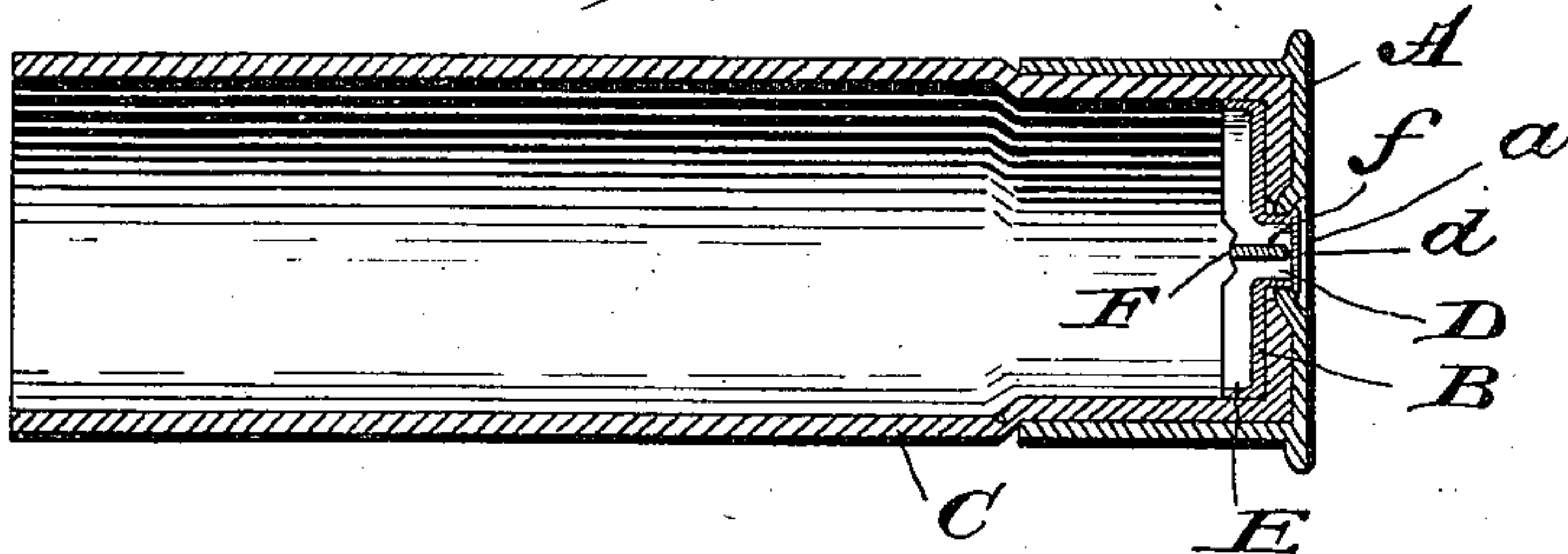


Fig. 3. E

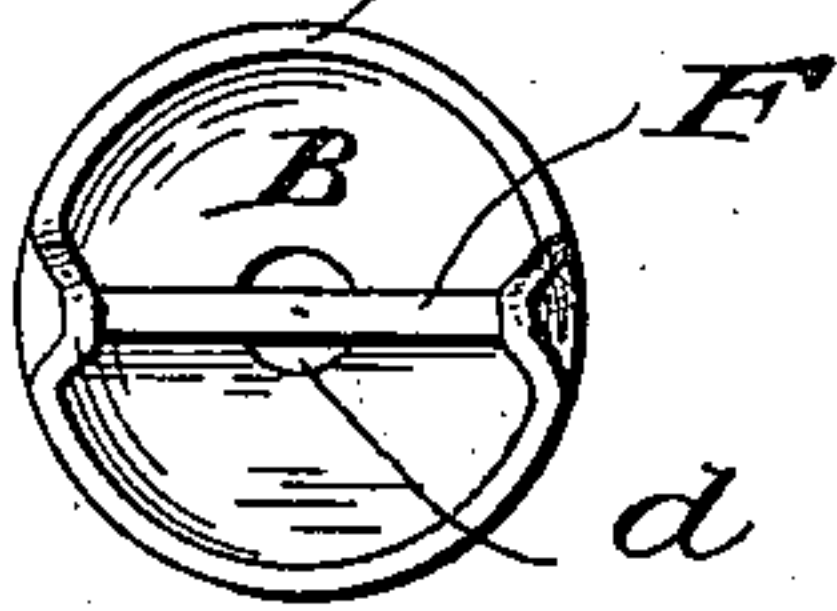
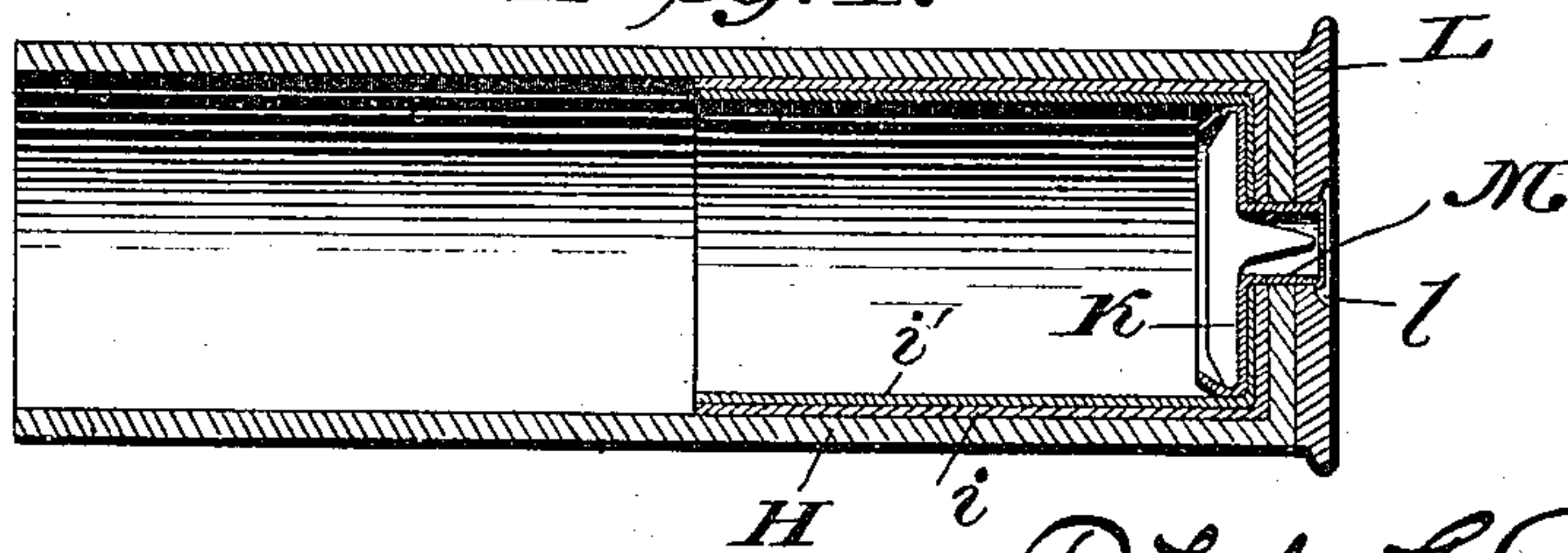


Fig. 4.



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CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 640,856, dated January 9, 1900.

Application filed July 3, 1899. Serial No. 722,694. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BAILEY, a citizen of the United States, residing at Cromwell, in the county of Middlesex and State of Connecticut, have invented an Improvement in Cartridges, of which the following is a specification.

The primary object of the invention is to so improve the ordinary paper-shell cartridge as to secure a firm connection between the paper tube and metal cap and also provide an effective primer that will insure the ignition of the powder from the flash of the fulminate, these objects being attained by a cheap and simple form of cartridge.

The invention consists, therefore, in the combination, with the metal cap provided with a central opening, of a breech-piece having a projection or nipple adapted to extend into the opening of the metal cap and be upset thereon to connect the parts, the inner end of the paper tube being crimped over the breech-piece and clamped between said breech-piece and head of the cap.

The invention further consists in providing the nipple of the breech-piece with a thin outer wall, in connection with an anvil held in said nipple by upsetting the edges of the breech-piece upon the ends of the head of said anvil.

The following specification enters into a detail description of the invention, reference being had to the accompanying drawings, and to letters thereon which designate the different parts, and what it is desired to protect by Letters Patent is more specifically set forth in the appended claims.

In the drawings forming a part of this specification, Figure 1 is a sectional view of a cartridge constructed in accordance with this invention. Fig. 2 is a similar view showing the application of the invention in connection with a metal cap having a very thin head. Fig. 3 is a detail view of the breech-piece and anvil carried thereby. Fig. 4 is a sectional view of a modification of the invention wherein provision is made for reinforcing the paper tube at the breech of the cartridge.

In carrying out my invention the head A of the metal cap is provided with a central opening *a*, and in case a very thick head is employed the outer end of said opening is

countersunk in the usual manner, as shown in Fig. 1, while the metal of a thin-head cap, Fig. 2, is depressed around said opening, for the purpose hereinafter explained.

In connection with the metal cap I employ a breech-piece B, which is adapted to firmly hold the paper tube C within the metal cap and also provide an effective priming device for the cartridge. To this end the said breech-piece is made up of a disk the central portion of which is stamped or drawn to provide a projecting nipple D, having a thin outer wall *d*, and the outer edge is turned to form the flange E. The nipple D is of such size relative to the metal cap that the outer end thereof will fit snugly within the opening in the head of said cap, and the length of said nipple is determined by the thickness of the head at the opening and the thickness of the paper tube, for in making up the cartridge the inner end of the paper tube is crimped over the edge of the breech-piece, and after both are placed in the metal cap with the nipple projecting through the opening the outer end of said nipple is upset upon the head and serves to clamp the parts together. By countersinking the outer end of the opening in the head of the metal cap the outer end of the nipple is located below the plane of the outer surface of said head, and as the fulminate is carried by said nipple the danger of an accidental explosion will be lessened.

The fulminate is placed on the inner side of the thin outer wall *d* of the nipple D, and in order to provide for exploding the fulminate an anvil F is located within said nipple and is held firmly with its point *f* touching the fulminate. This anvil is preferably T-shaped, as shown, the cross-bar extending across the disk or breech-piece to bear against the same, while the stem or point *f* projects into the nipple, the said anvil being held in place by upsetting the flange E over the ends of the cross-bar of the same, and for this purpose the ends of said cross-bar are preferably beveled, as shown. It will be here noted that this form of anvil will permit a quantity of powder to collect around the point of the same and against the fulminate, so that the full benefit of the flash will be had to ignite the powder. A very effective priming device is therefore provided in connection with the

particular manner of making up the cartridge, and in case the head of the metal cap is made very thin the thickness of the disk B may be increased to form a breech-block.

5 In the modification, Fig. 4, I have shown a construction of cartridge which contemplates the reinforcing of the rear portion of the paper tube H by short sections of paper and metal tubes *i* and *i'*, respectively, which are
10 let into said tube H and crimped over the breech-block K with the same, as shown. The reinforcing tubes or sections are intended to extend only the distance occupied by the powder in the cartridge, and as they serve to
15 thoroughly reinforce the tube at the breech the collar of the metal cap may be dispensed with and only the head L employed, the said head or washer being provided with an opening *l* to receive the nipple M, extending from
20 the breech-block K, and projects sufficiently to form the usual rim.

The principal advantages attained by making up a cartridge in the manner herein shown and described are that a firm and secure connection is had between the metal cap or head
25 and the paper tube, and the particular manner of making the connection also provides a nipple to receive the fulminate on the inner side of the same and combines an anvil which
30 will permit a quantity of powder to collect in such close proximity to the fulminate as to insure a positive explosion of the cartridge from the flash. The crimped end of the paper tube is firmly clamped between the breech-
35 piece and head of the metal cap, and the parts being thereby securely connected will not be liable to pull apart in extracting the cartridge.

In some cases the paper tube could be reinforced at the breech by inserting only a
40 metal tube instead of metal and paper tubes, as shown in Fig. 4, and of course the said metal tube would be spun over the breech-piece, so as to be securely held when the parts are connected.

45 Though I have described the cap as made of metal, it is obvious that other material may be employed, for in some instances I contemplate making said cap of composite fiber or compressed papier-mâché. When made of
50 this material, the head and sleeve would necessarily be thicker than when said parts are made of metal.

Having thus described my invention, what I claim as new, and desire to secure by Letters
55 Patent, is—

1. A cartridge, comprising a metal cap or head having an opening therein, a breech-piece provided with a projecting nipple adapted to fit into the aforesaid opening, and an
60 anvil secured to the breech-piece and provided with a point or stem extending into the nipple; together with the tube held in place by the cap and breech-piece, substantially as shown and described.

65 2. A cartridge, comprising a metal cap or

head having an opening therein, a breech-piece provided with a nipple projecting into the aforesaid opening and upset upon the metal cap or head, and an anvil secured to the breech-piece and having a point extending
70 into the nipple; together with the tube held in place by the cap and breech-piece, substantially as shown and described.

3. In combination with the metal cap and breech-piece connected together substantially
75 as shown, the breech-piece having a nipple extending through the cap, of an anvil secured to the breech-piece and presenting a point extending into the nipple, substantially as shown and for the purpose set forth. 80

4. In a cartridge, the combination with the metal cap and breech-piece connected together substantially as shown, the breech-piece having a nipple extending through the cap and a
85 flange, of an anvil secured to the breech-piece by upsetting the flange over the ends of said anvil, the anvil having a point projecting into the nipple, substantially as shown and for the purpose set forth.

5. In a cartridge, the combination, of the
90 metal cap or head having an opening there-through, a breech-piece provided with a nipple adapted to enter the aforesaid opening and be upset upon the cap or head, an anvil secured to the breech-piece and having a stem
95 projecting into the nipple, and the paper tube crimped over the breech-piece and clamped between said breech-piece and cap or head, substantially as shown and described.

6. In a cartridge, the combination, of the
100 metal cap or head having an opening through the same, a breech-piece provided with a nipple adapted to enter the aforesaid opening and be upset upon the cap or head, a flange on the
105 breech-piece, and an anvil secured to the breech-piece by upsetting the flange over the ends of said anvil; together with the paper tube having its inner end crimped over said
breech-piece and clamped between said breech-piece and cap or head, substantially
110 as shown and for the purpose set forth.

7. In a cartridge, the combination, of the metal cap or head having an opening through the same, a breech-piece provided with a nipple adapted to enter the aforesaid opening and
115 connected to the cap or head, a flange on the breech-piece, and an anvil secured to the breech-piece by upsetting the flange over the ends of the anvil; together with the paper tube and reinforcing-sections crimped over
120 the breech-piece and clamped between said breech-piece and cap or head, substantially as shown and for the purpose set forth.

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

CHAS. A. BAILEY.

Witnesses:

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