No. 640,855. Patented Jan. 9, 1900.

C. A. BAILEY.

CARTRIDGE.

(No Model.) (Application filed July 3, 1899.)

Fig. 1.

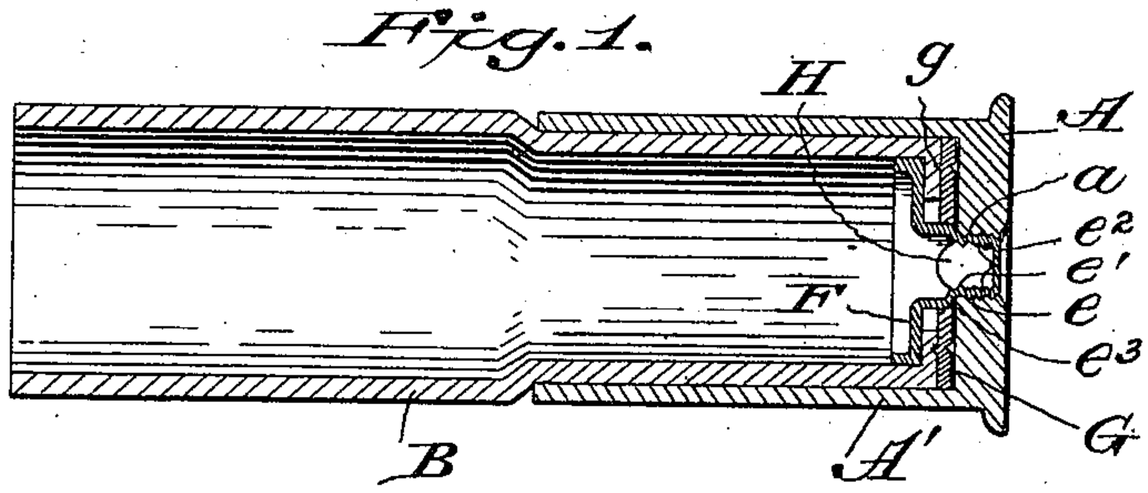

Fig. 2.

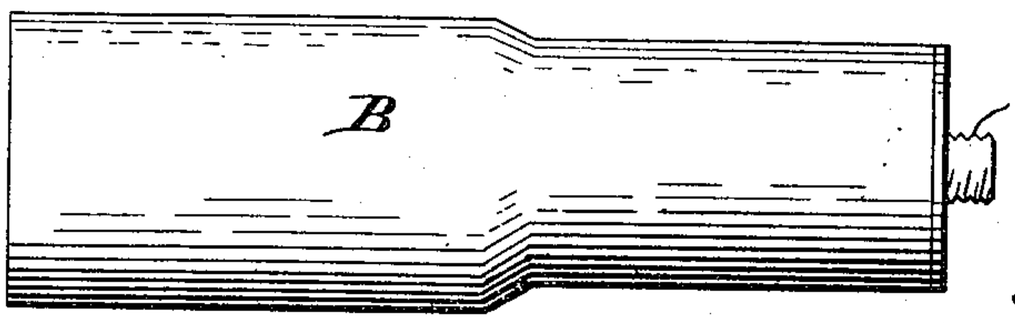

Fig. 7.

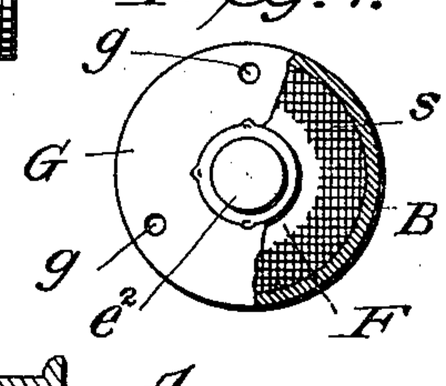

Fig. 3.

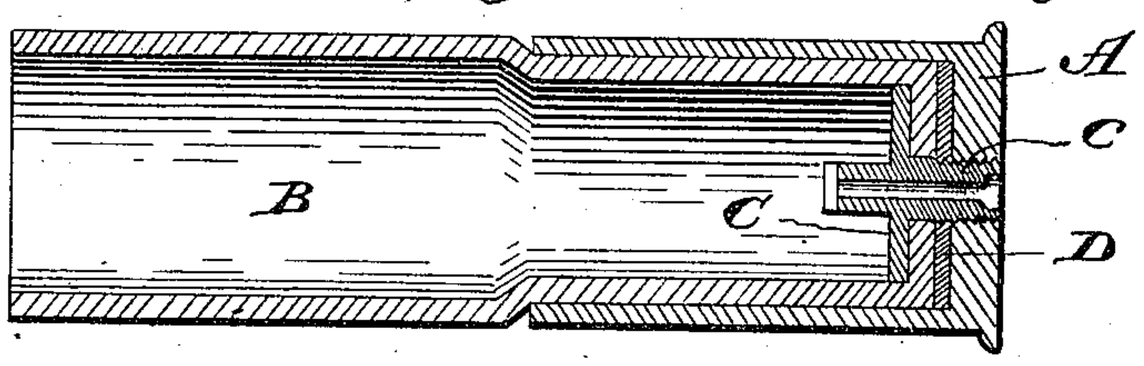

Fig. 4.

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 640,855, dated January 9, 1900.

Application filed July 3, 1899. Serial No. 722,693. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BAILEY, a citizen of the United States, and a resident of Cromwell, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Cartridges, of which the following is a specification.

The object of this invention is to provide an improved cartridge in which the brass cap comprising the flanged head and integral sleeve is a separate individual part and removable from the destructible paper tube and nipple which carry the load and fulminate, so that the said flanged head, with its integral sleeve, being the most expensive part of the cartridge, can be removed and used an indefinite number of times, thereby greatly reducing the cost of reloading or forming a new cartridge.

In the ordinary shotgun-cartridges now made there is not always a positive igniting of the powder, more especially where a slow powder is used, owing to the fact that the flash of the primer has to pass through a small hole. A further object of my invention, therefore, is to overcome this by providing an improved nipple in connection with the cartridge, the said nipple being threaded and provided with a thin outer wall, on the under side of which the fulminate is placed, an anvil being held in the nipple against the fulminate and leaving spaces for powder to collect in said nipple.

The invention therefore contemplates the production of a cartridge or paper shell as a separate article of manufacture to be used in connection with the metal cap or flanged head and integral sleeve, comprising a breech-block and threaded nipple stamped or struck up from a plate of metal, a paper or thin metal tube with its inner end crimped over the breech-block, a washer placed over the nipple and secured to clamp the parts together, and an anvil having teeth by which it is screwed into the nipple up against the fulminate therein, said cartridge receiving a load and adapted to be readily connected to the metal cap to form a complete cartridge.

The following specification enters into a detail description of my invention, reference being had to the accompanying drawings, and to letters of reference thereon, which designate the different parts, and what I claim as new and desire full protection upon 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 separable cartridge, showing the preferred form of construction. Fig. 2 is a detail side elevation of the paper tube and parts carried thereby. Fig. 3 is a longitudinal sectional view of a modification. Fig. 4 is a detail view of the anvil. Fig. 5 is a detail view of a modification of the anvil. Fig. 6 is a detail view of the breech-block with anvil applied. Fig. 7 is an end view of Fig. 2, the washer and tube being partly broken away to better illustrate features of construction.

In carrying out my invention I make the metal cap or flanged head and integral sleeve a separate part of the cartridge, the flanged head A being provided centrally with a threaded opening *a* to receive the threaded nipple, hereinafter described, while the sleeve A′ may be of any desired length. The flanged head of this metal cap is of considerable thickness to receive the impact of the explosion and not be injured thereby, and as the cap is intended to be used a number of times it is preferably made of brass, and the sleeve can be of greater length than is usual with paper cartridges. In connection with this metal cap I make up a paper tube or cartridge proper which carries the load and fulminate and is intended to be manufactured and sold as a separate article, being readily and conveniently secured to said cap to form a complete cartridge. To this end the tube B, which may be of paper or thin metal, is crimped inward at its inner end over the edge of a metal disk or breech-block C, which lies within the tube and is provided with a rearwardly-projecting portion or nipple *c*, threaded externally to engage the threaded opening *a* of the metal cap. The projecting portion or nipple may be threaded up to the block, or nearly so, as shown in Fig. 3, so that the washer D may be screwed thereon against the crimped end of the tube and clamp the parts firmly together. In this form of breech-block and nipple (illustrated in Fig. 3) the said nipple is provided with an opening through the same tapered at its outer end to receive the firing-cap and is of such length relative to the open-

ing in the metal cap that when applied the outer end of the same will be flush with the rear surface of said cap.

The enlarged outer end of the opening in the nipple is adapted to receive a flat anvil, which is inserted before applying the percussion-cap.

In the preferred form of construction (illustrated in Figs. 1, 2, and 3) the breech-block and nipple are struck up or stamped from sheet metal, and in forming the nipple (designated by the letter E) the body of the same is swaged to form external and internal threads thereon, (designated by the letters *e* and *e'*, respectively,) while the outer end presents a thin wall e^2, against which the firing-pin of the fire-arm is adapted to strike. In this form an annular shoulder e^3 is located at the inner end of the nipple adjoining the block F, and the outer surface of said block is preferably roughened, as indicated by *s* in Fig. 7. After the tube has been crimped over the edge of the breech-block a washer G is placed over the nipple engaging the shoulder, and the outer edge of said shoulder being upset against said washer will secure the parts firmly together. In order to increase the engagement of the parts to prevent the tube turning independent of the breech-block and washer, the said washer is provided with inwardly-projecting teeth *g*, which pass into the crimped end of the tube, and the edge of the opening in the washer may be indented, so that the edge of the shoulder may be upset into said indentations. These precautions are followed to insure a strong and firm engagement of the parts with each other, for it will be understood that in placing the cartridge or paper tube and parts carried thereby in engagement with the metal cap and disengaging the same therefrom the tube is turned to screw the nipple into the threaded opening in the head of the cap. By forming the internal threads *e'* in the nipple I provide for holding an anvil H in place, said anvil being a small flat piece of metal, having teeth at each edge to engage the threads, and beveled at opposite directions at its lower end to form a small contact-point. In priming the cartridge the fulminate is placed in the nipple on the inner side of the thin wall e^2 and the anvil is then screwed into the nipple up against the fulminate. The exploding of the cartridge is effected by the firing-pin striking the thin wall at the outer end of the nipple and, indenting said wall, mashes the fulminate on the point of the anvil. The anvil being a flat piece of metal leaves spaces at each side into which the powder will pass, and thereby insures a positive igniting of the powder of the cartridge.

As shown in the modification of the anvil, Fig. 5, the said anvil I is provided at its outer end with extensions *i*, which forms stops to contact with the offset presented by the formation of the shoulder on the nipple and prevent the point being forced into the fulminate when inserting the anvil. By providing the extensions *i* and by the upsetting of the shoulder upon the washer the said shoulder will also be upset on the extensions of the anvil and hold the latter in place. The shoulder on the nipple could be made octagonal and a corresponding hole formed in the washer to prevent said washer turning upon said shoulder.

By making up a cartridge in the manner hereinbefore described it is apparent that the metal cap, which is the most expensive part, can be used an indefinite number of times, and therefore any one having a supply of metal caps on hand will only be required to purchase the tube and parts carried thereby to form a complete cartridge, and said tube and parts can be bought at small cost.

The invention provides a manner of greatly reducing the cost of reloading cartridges, and the operation of removing the tube from the metal cap and applying a new one can be readily and conveniently accomplished. The particular construction and arrangement of parts also prevents any rupture caused by the explosion of the cartridge, and presents an effective priming device, the latter feature being also susceptible of application to an ordinary cartridge.

In some cases I contemplate providing a cup-shaped washer instead of a plain washer herein shown.

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

1. In combination with a metal cap having a threaded opening in its head, of a tube, a breech-block or disk over which the tube is crimped, a threaded nipple formed on the breech-block and provided with a shoulder, and a washer placed on the shoulder, the latter being upset upon the washer to clamp the parts together, substantially as shown and for the purpose set forth.

2. In combination with a metal cap having a threaded opening in its head, of a tube, a breech-block or disk upon which the tube is crimped, a threaded nipple projecting rearward from the center of the breech-block and adapted to engage the threaded opening in the cap, and a washer secured upon the threaded nipple against the crimped end of the tube, substantially as shown and for the purpose set forth.

3. In combination with a metal cap having a threaded opening in its head, of a tube, a breech-block or disk over which the tube is crimped, said breech-block having its outer surface roughened or serrated, a threaded nipple projecting rearward from the center of the breech-block and provided with a shoulder at its inner end, and a washer placed over the shoulder to engage the crimped end of the tube, said washer having inwardly-projecting teeth, substantially as shown and for the purpose set forth.

4. In combination with a metal cap having a threaded opening in its head, of a tube, a

breech-block or disk over which the tube is crimped, a nipple projecting rearward from the breech-block and provided with external and internal threads and a thin outer end, and a washer placed over the nipple to clamp the crimped end of the tube between said washer and the breech-block; together with a flat piece or anvil screwed into the nipple, substantially as shown and for the purpose set forth.

5. In combination with a metal cap having a threaded opening in its head, of a tube, a breech-block or disk over which the tube is crimped, a nipple projecting rearward from the breech-block and provided with external and internal threads and a thin outer end wall, and a washer placed over the nipple to clamp the crimped end of the tube between said washer and breech-block; together with a flat metal piece or anvil having teeth at opposite sides and lateral projections at its rear end, substantially as shown and for the purpose set forth.

6. In combination with a metal cap having a threaded opening in its head, of a tube, a breech-block or disk over which the tube is crimped, said breech-block having its rear surface roughened or serrated, a nipple projecting rearward from the breech-block and provided with external and internal threads and with a shoulder at its inner end, and a washer placed over the shoulder and provided with inwardly-projecting teeth, to clamp the crimped end of the tube between said washer and breech-block; together with an anvil screwed into the threaded nipple, substantially as shown and for the purpose set forth.

7. As an improved article of manufacture for use in connection with a metal cap, comprising a tube, a breech-block in the tube provided with a rearwardly-projecting nipple having internal and external threads, a washer placed over the nipple to clamp the parts together, and an anvil screwed into the nipple, substantially as shown and described.

8. An improved article of manufacture for use in connection with a metal cap, comprising a tube, a breech-block in the tube provided with a rearwardly-projecting nipple having a thin wall at its end, fulminate on the inner side of said wall, and an anvil held in the nipple against the fulminate, the nipple being threaded externally to engage a threaded opening in the metal cap, substantially as shown and described.

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

CHAS. A. BAILEY.

Witnesses:
WILLIAM S. STICKNEY,
CHRISTINE L. STICKNEY.