

(No Model.)

N. G. WHITMORE.
PRIMER FOR CARTRIDGES.

No. 567,114.

Patented Sept. 1, 1896.

Fig. 1.

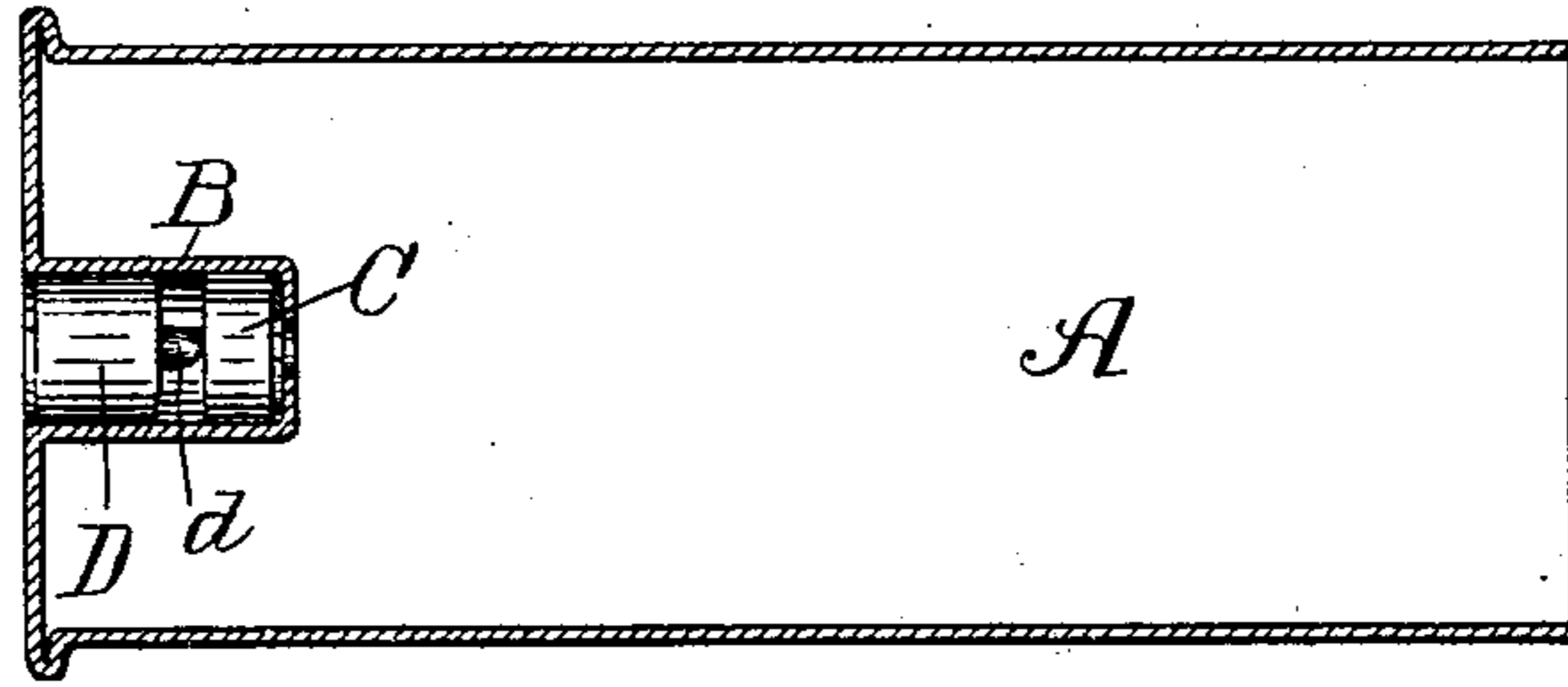


Fig. 2.

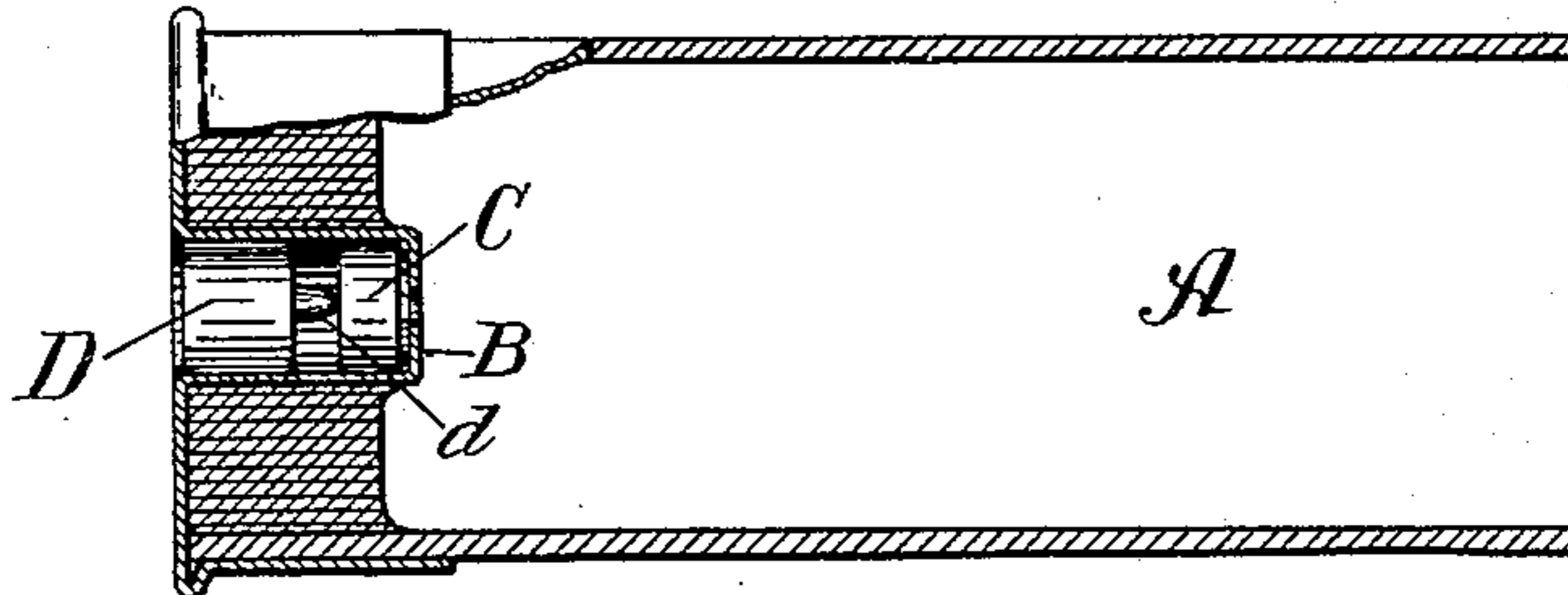
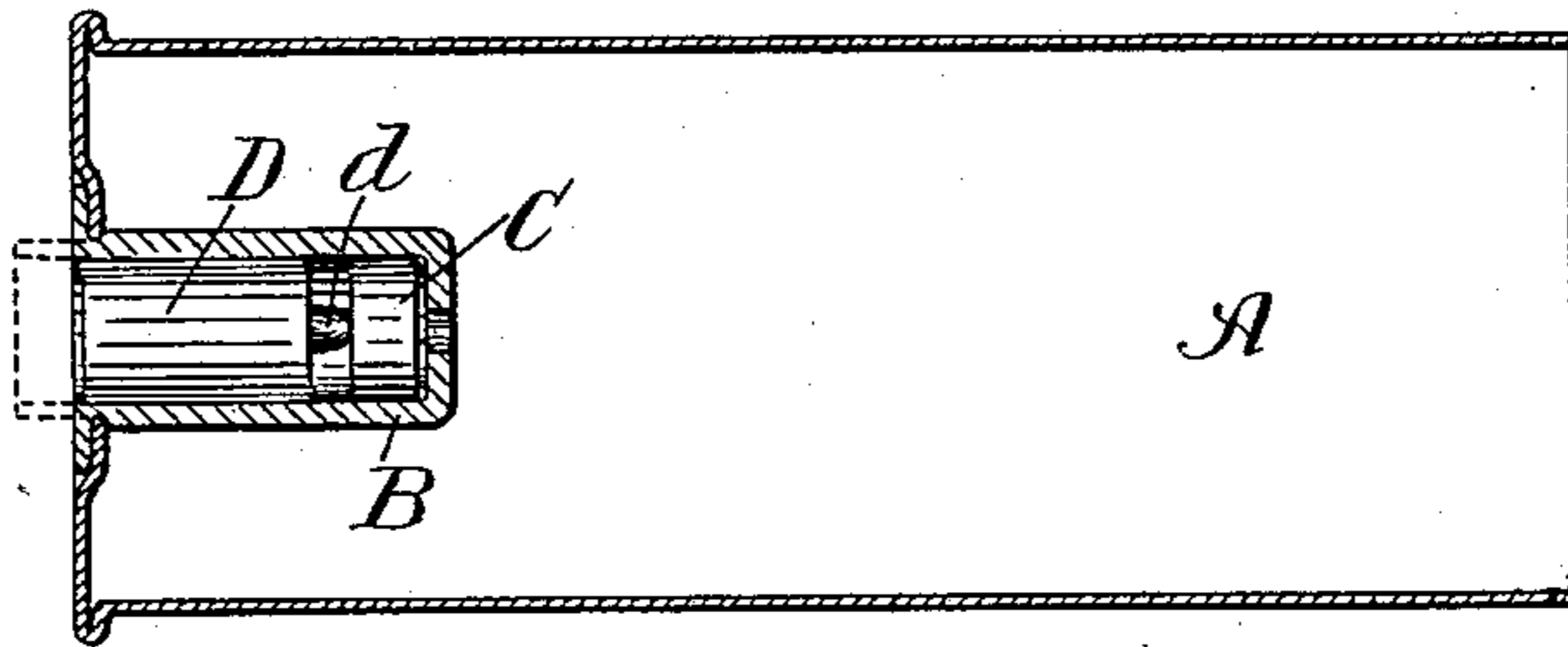


Fig. 3.



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NATHANIEL GILBERT WHITMORE, OF TAUNTON, MASSACHUSETTS, ASSIGNOR
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PRIMER FOR CARTRIDGES.

SPECIFICATION forming part of Letters Patent No. 567,114, dated September 1, 1896.

Application filed June 13, 1895. Serial No. 552,631. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL GILBERT WHITMORE, of Taunton, in the county of Bristol and State of Massachusetts, have invented an Improved Cartridge, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a section through a brass cartridge-shell; Fig. 2 is a section through a paper cartridge-shell, and Fig. 3 is a section of a modified form of Fig. 1, each embodying my improvement.

In the drawings the shell A and cap or primer D are as usual, and the tube B or anvil-chamber is also as usual, except that it is made longer, so as to be deep enough to receive the firing-pin D with the projection *d* at its inner end above the cap C and with the end of the firing-pin D flush with or a little below the outer surface of the base of the shell. The tube B is nearly closed at its inner end, as usual, to form the usual anvil-chamber and is integral with the base of the shell in Figs. 1 and 2, as usual, except that it is made longer than heretofore, as above explained; but in Fig. 3 the tube B is inserted in an opening in the base of the shell and turned back over the edges of the opening, as will be clear from Fig. 3, the dotted line showing that portion of the tube which is turned back.

When used on paper shells, (shown in Fig. 2,) either of the above constructions may be used; but I have shown the tube B integral with the metallic base. The essential matter is a tube B, nearly closed at its inner end and formed with or attached to the base of the shell and long enough or deep enough to form a central chamber for the cap C and the firing-pin D, the cap closing the perforated bottom of the chamber which forms its anvil, as usual, and the firing-pin filling the chamber above the cap. The firing-pins are preferably made of sections of wire with one end turned off to make the projection *d*. When made a snug fit for the chamber, they will not fall out. Their length is determined by the length of the chamber, being such that the projection *d* will clear the cap and the outer end will be slightly below the plane of the base of the shell.

The operation is as follows: The cap being

placed on its seat in the bottom of the chamber and the firing-pin in position, the firing-pin in the cartridge is struck by the firing-pin in the gun, and the blow drives the projection *d* against the cap C and explodes it, igniting the powder. When the shell is to be reloaded, the exploded cap and the firing-pin are forced out of the shell with an ordinary cap-extractor. A new cap is put in place and the same firing-pin used as before. In practice I prefer to make the firing-pins of practically the same diameter as the inner diameter of the tube B, so that they will be sure to stay in place and yet will not fit so tightly that the blow of the hammer of the gun will not move them endwise against the cap. I have also made the firing-pins of slightly-larger diameter for a portion of their length near the butt than for the rest of their length; but this difference in diameter is too slight to be shown by a drawing, and all skilled in the art will readily understand the fit necessary to retain the firing-pin in the anvil-chamber and yet not prevent its being operated by the hammer of the gun. The firing-pin D may be made a loose fit and the base of the shell slightly upset near the mouth of the tube B, so as to slightly contract that mouth and thereby prevent the firing-pin from falling out.

The main advantages of my improved cartridges are that the cap or primer is more certain to explode and its perfect operation as a gas-check insured, for the projection *d* is always brought against the center of the cap and all danger of injury to the firearm or the user from blow-back is obviated. These advantages are especially marked when any high explosive, such as nitro-powder, is used. Moreover, as shown in Figs. 1 and 2, the cap can be brought near the middle of the charge of powder; also the firing-pin D fills the anvil-chamber B and prevents extraneous matter entering that chamber and covering the cap C.

I am aware of the patents No. 83,434, dated October 27, 1868, to Abraham and Bayliss; No. 220,030, dated September 30, 1879, to McGowan; No. 430,229, dated June 17, 1890, to Garland, and No. 148,366, dated March 10, 1874, to Hobbs, and I disclaim all that is shown in those patents, for none of them con-

tain any hint or suggestion of a cartridge-shell with a cap or primer at the bottom of the anvil-chamber covered by a plug or pin adapted to be struck by the firing-pin in the
 5 firearm and having a flat inner end with a conical projection held centrally in relation to the cap, which is the distinguishing characteristic of my invention. Nor does any
 10 one of the above-mentioned patents show any means for exploding a primer by means of a small cone of metal which will always indent the primer centrally and which projects from a flat-faced pin of metal that receives the
 15 blow from the firing-pin of the firearm, so that a lock with a light spring will be sufficient to cause the conical projection to indent the cap, while a lock with a powerful spring cannot rupture the metal of the cap because of
 20 the flat face of the pin carrying the indenting projection; and in either case the primer, the anvil-chamber, and the plug or pin in

that chamber, and covering the primer, will form an efficient gas-check and prevent all possibility of the gases generated by the explosion from blowing back. 25

What I claim as my invention is—

In a cartridge-shell central tube B fast to the base of the shell and nearly closed at its inner end; cap C filling the lower end of tube B with its edge pressed against the inner walls and closed end of tube B; and pin 30 D with a flat inner face having the small conical projection d at its center, and a flat outer face, the pin D filling tube B above cap C, and with its flat outer face nearly flush with the outer surface of the base of the shell; all 35 combined substantially as and for the purposes specified.

NATHANIEL GILBERT WHITMORE.

Witnesses:

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