

No. 53,388.

PATENTED MAR. 20, 1866.

H. BERDAN.  
PRIMING METALLIC CARTRIDGES.

Fig. 2.

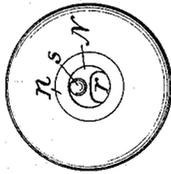
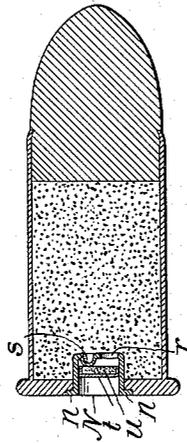


Fig. 1.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PRIMING METALLIC CARTRIDGES.

*Specification forming part of Letters Patent No. 53,388, dated March 20, 1866.*

*To all whom it may concern :*

Be it known that I, HIRAM BERDAN, of the city, county, and State of New York, have invented a new and useful Improvement in Cartridges for Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

This invention relates to an improvement in that class of cartridges known as center-fire cartridges, whether such cartridges have their entire shells or their heads or bottoms only made of metal. The object of this improvement is partly to insure the prevention of the accidental ignition of the fulminate-priming to which other center-fire cartridges are liable in the manufacture, or when packed and transported, a number together; partly to better insure the ignition of said priming by the blow of the hammer; and partly to enable the shell to be reloaded, reprimed, and used over again, if desired, for target practice, or in any case in which it might be convenient to save the shell, without renewal or replacement of any of its parts but the cap, pellet, or other primer. The head or bottom of the cartridge is constructed or fitted with a cup, into which the fulminate-priming, in the form of a cap, pellet, or otherwise, is inserted in such manner as to be entirely contained some distance within the outer face of the head or bottom of the shell; and in the bottom of the said cup there is a permanently-fixed projection in a rearward direction, against which the fulminate-priming is driven by the hammer, and which presents a point or so small a surface that the entire force of the blow of the hammer is so concentrated on a small portion of the priming as to insure its ignition.

Figure 1 in the accompanying drawings is a central longitudinal section of a ball-cartridge constructed according to this invention, on a scale larger than the real size. Fig. 2 is a rear end view or the same.

Similar letters of reference indicate corresponding parts in both figures.

The shell of the cartridge is represented in the drawing as made entirely of copper; but it may be made of paper, with a copper or other metal head. The cup N, which receives the priming, is represented as made in a separate

piece, inserted tightly into a hole in the center of the head, and with a flange, *n*, counter-sunk into the head; but it might be practicable to make it of the same piece with the head. In the bottom of this cup, which projects into the cartridge, there is a vent-hole, *r*, for the passage of the fire from the priming to the charge, and there is also an outward teat-like projection, *s*, or projecting point, which is represented as formed by indenting the bottom of the cup on the inner side; but which may be formed by depressing the metal around it, or by making a hole and inserting and securing a small pin or teat of solid metal; but in any case it must constitute a permanent portion of the cup which will not be detached during the use of the cartridge. The priming is represented as being in the form of a shallow pellet-like cap, *t*, containing the fulminate *u*; but it may be in any other form that will permit its insertion loosely into the cup N, in which it is secured by means of water-proof varnish or other adhesive material, at such distance from the outside of the head that it may be protected from the points of the conical bullets or any other bodies, the contact or concussion of which might be liable to produce the ignition of the fulminate. The fulminate is toward the teat or point *s*.

The fulminate is to be fired by means of a firing-pin struck by the hammer or by the point of a hammer, which will enter the cup N, and drive the priming forward against the teat or point *s*, which presents so small a surface that the force of the blow is concentrated on an exceedingly small surface of the priming and will insure its explosion. The rim of the cap *t* expands within the cup N in firing, in such manner as to form a gas-check.

In the operation of this cartridge no portion of the metal is displaced, the pellet, cap, or priming alone being driven forward against the fixed point *s*; and when the discharged cartridge-shell or its metal head has been withdrawn from the fire-arm, the cap *t* or residual portion of the priming will drop out from the cup, in which a new priming can be inserted if desired to reload the cartridge.

One advantage of this cartridge is that it may be loaded before the application of the priming, thus not only rendering its manufac-

ture less dangerous than that of other primed cartridges, but permitting the cartridges to be stored in an unprimed condition, and the priming to be applied just before they are required to be used, thereby not only rendering the storage safer, but preventing the deterioration to which the fulminate-priming is subject in cartridges when kept for a long time.

What I claim as my invention, and desire to secure by Letters Patent, is—

The fixed permanent tent-like projection *s* at the bottom of the cup N in the head of a cartridge, in combination with the pellet or other priming inserted into and protected within the said cup, substantially as herein set forth.

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