(No Model.)

J. H. BULLARD.

CARTRIDGE PRIMER.

No. 278,394. Patented May 29, 1883.

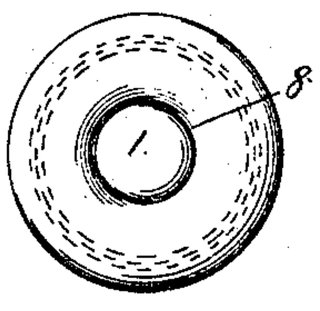

Fig. V

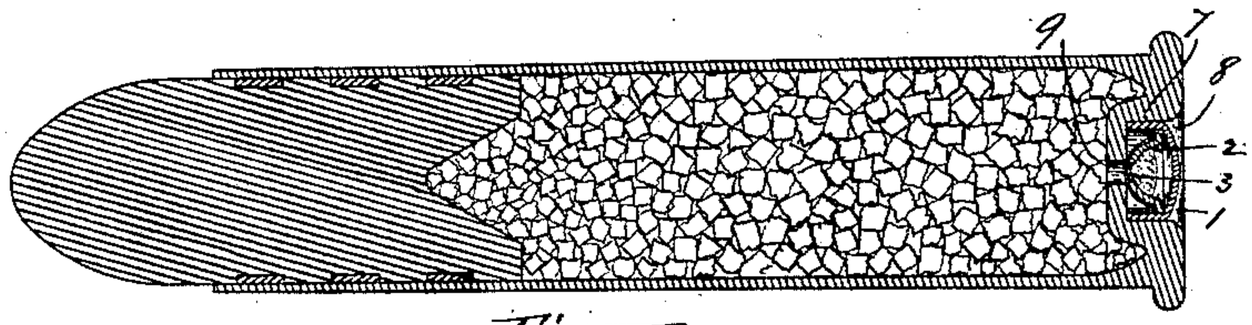

Fig. VI

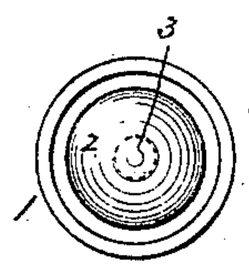

Fig. I

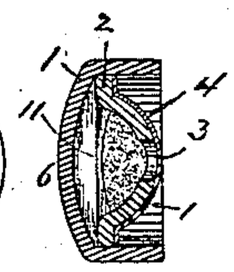

Fig. II

Fig. III

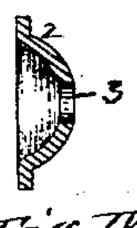

Fig. IV

Witnesses.
Chas. H. Wood
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Inventor.
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UNITED STATES PATENT OFFICE.

JAMES H. BULLARD, OF SPRINGFIELD, MASSACHUSETTS.

CARTRIDGE-PRIMER.

SPECIFICATION forming part of Letters Patent No. 278,394, dated May 29, 1883.

Application filed September 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BULLARD, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Cartridge-Primers, of which the following is a specification and description.

The object of my invention is to provide a primer for cartridges which, when the latter are in position within the magazine of a fire-arm, cannot be exploded by violent contact with the end of the ball of the next adjacent cartridge, caused by a sudden jar or by the recoil of the arm in firing, and I accomplish this by the mechanism substantially as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure I is an inside view of a primer made according to my invention. Fig. II is a longitudinal section of the same at the axis of the primer. Fig. III is a longitudinal section at the axis of the primer with the anvil removed therefrom. Fig. IV is a central transverse section of the anvil. Fig. V is an end view of a cartridge having my invention applied thereto. Fig. VI is a longitudinal section of the same at the axis of the cartridge.

In the drawings, 1 represents the shell of the primer, whose head or closed end is concave on the inside and preferably convex on the outside, as shown clearly in Fig. III, and 2 represents the anvil, which consists of a metal disk of suitable size to fit snugly the inside of the shell in the direction of its diameter. This anvil 2 is cupped or of concave form on the side next the head 6 of the primer-shell, as shown clearly in Figs. II, IV, and VI, and is provided with fire-holes, as 3, through which the fire of the fulminate in the concave side of the anvil, when it is exploded, may be communicated to the charge of powder within the cartridge-shell. The holes 3 may be made at the center of the anvil or at the edges, or at any other desired points in the anvil, so that the fire from the explosion of the fulminate may readily pass through to ignite the charge in the cartridge, the force of the explosion breaking through the water-proof covering on the outer side of the anvil. The fulminate 10 is placed in this concave side of the anvil, as shown in Figs. II and VI, and it may then be covered with a tinfoil or other convenient water-proof disk, 11, and the outer convex side of the anvil is covered with a similar covering, 4, to protect the fulminate from dampness and render the primer water-proof.

It will be seen that the outer side of the anvil projects forward in the primer-shell to a point on the same plane as the open end of the latter; and in using these primers each is forced into a recess, 8, made in the head of a cartridge-shell with the open end of the primer against the inner end of the recess, and with the anvil against the inner end of the said recess 8, or very near thereto, as shown clearly in Fig. VI.

In some cartridges the hole 9, for the fire to pass through to ignite the powder, is made through the head of the shell at the center, as shown in Fig. VI, in which case the primers used with such cartridges should have the fire-hole 3 made in the center of the anvil; but in some cartridges there are two fire-holes—one each side the center of the head—in which case primers having two or more holes may be used.

When the magazine of a fire-arm is charged with cartridges ready for use, they lie with the primer of one cartridge directly in front of the end of the ball of the next cartridge behind, the magazine being filled in this manner; and it is evident that the accumulated weight of several balls at any sudden or quick movement of the gun—such as its recoil at the discharge—would be sufficient to drive the ball of one cartridge against the primer of the next with considerable force, quite enough to explode the primer and cartridge with others also and to burst the magazine. By this construction, however, it is impossible to explode a primer, as the end of the ball cannot indent the head of the primer sufficiently far to reach or to press the metal of the head against the fulminate, the latter being at too great a distance from the head of the primer to be exploded by that means; but when the cartridge is inserted in its place in the chamber of the gun, to discharge it the end of the firing-pin, when the latter is driven forward by the hammer, indents the head of the primer to a sufficient distance to cause the metal to suddenly impinge against the fulminate, and the anvil having a solid bearing against the metal in the head of the cartridge the fulminate is exploded.

Having thus described my invention, what I claim as new is—

The combination of a primer-shell, the interior surface of whose head is concave, an anvil consisting of a perforated disk fitted snugly into said shell, and whose side toward the head of the primer is concave and forms a cup to contain the fulminate, and whose opposite side extends to a point in the same plane with the open end of the primer-shell, and a water-proof covering secured on the outer side of the anvil to protect the fulminate within from the action of the atmosphere, substantially as described.

JAMES H. BULLARD.

Witnesses:
T. A. CURTIS,
N. E. DWINNELL.