W. W. HUBBELL.
Cartridge.

No. 212,313. Patented Feb. 18, 1879.

Fig. 1.

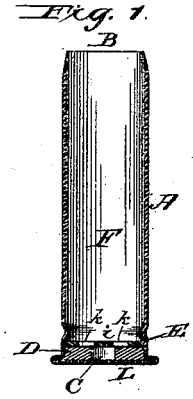


Fig. 2.

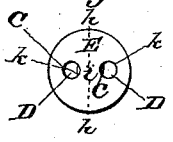


Fig. 4.

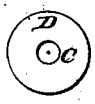
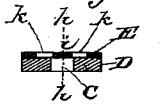


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM W. HUBBELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN CARTRIDGES.

Specification forming part of Letters Patent No. **212,313**, dated February 18, 1879; application filed December 28, 1878.

To all whom it may concern:

Be it known that I, WILLIAM WHEELER HUBBELL, of Washington, in the county of Washington and District of Columbia, have invented an Improved Metallic Cartridge; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to the peculiar construction and combination of a circular metallic perforated plate with the circular fulminate-carrier and solid fire-tight metallic case and head in one piece, as will be hereinafter more fully set forth and described.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved metallic cartridge. Fig. 2 is a plan view of the retaining disk or anvil. Fig. 3 is a diametric section of the fulminate-carrier, plate, and anvil; and Fig. 4 is a plan view of the fulminate-carrier.

A is a cylindrical metallic cartridge case or shell, with solid rear end, L, in one piece therewith, and both fire-tight, open only at the front end, B, to be primed and loaded at this front opening.

D is a circular disk of paper or any suitable substance, perforated through the center for the reception of the fulminate in this perforation or chamber C.

This paper disk when charged with fulminate is placed against the bottom L of the metallic case A. E is a circular metallic plate closely fitting inside of the case A, down upon the paper disk D, where it is held in place by contracting or pinching in the case A, which forces the plate E down upon the disk or base of the case and makes a tight joint around the edge of the plate.

The plate E is provided with perforations *k k* upon either side of a central line drawn through its axis, as shown at *h h*, Figs. 2 and 3, sufficient space being left between these perforations to form the bar *i*, of a breadth nearly equal to the diameter of the perforation C, immediately over which it rests.

F is the space in the cartridge, which is loaded as usual with a charge of powder and bullet of any desired weight and shape. The fulminate-chamber C may be recessed or formed in the metal of the circular plate E, with the central bar *i* and two side perforations *k k* over it, dispensing with the paper. The central anvil affords a firm resistance to a central striker acting on the center of the base L, and compressing the fulminate to ignite it with certainty. The two side vents diffuse the fire into the base of the charge of powder, and its instant explosion presses back the circular anvil-plate, and prevents it from being blown out in the barrel, the charge being consumed from the base forward without reaction of the fire or waste of the powder.

The distinguishing feature of my invention is the organized construction to carry into complete effect the expressed principles of operation of the fulminate of mercury or detonating powder and the powder-charge. In this organization the fulminate, although the superior explosive force, is contracted into a diminished or small central chamber and fills it. The flange and head of the metallic case are solid, all in one piece. This chamber at its sides or outer extreme edges communicates directly and exclusively with the powder-charge, so that the explosive force of the fulminate is not allowed to expand under a larger area of the anvil-plate and blow it out, but is compelled to diffuse its explosive force, not in a central stream, but in a diffused body into the base of the powder-charge. To effect this the central anvil-piece has no central aperture, is as wide as the fulminate-filled chamber, and the perforations are at the extreme outer sides of this fulminate for two purposes. One is to diffuse the fire from this center most thoroughly. The other is to have an unperforated anvil over and against the fulminate, as it rests solid in its chamber, to receive the central blow of a striker and obtain complete resistance by the anvil-bar, and yet have free escapement for the explosive force at once from beneath the anvil-plate without any chamber or space for it to expand into under the plate. This assures a certain ignition, security of the anvil-plate to keep its position, and a complete combustion of the powder-charge, from the base forward, as it impels the bullet out of the gun.

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

In the bottom of a solid metallic-flange cartridge case or shell, the combination of a circular base inclosing a central chamber of fulminate and an anvil over the fulminate provided with two or more openings, whose inner edges nearly coincide with the edges of the central chamber of fulminate in the base of the cartridge, substantially as described.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

WM. WHEELER HUBBELL.

Witnesses:

ALBIN M. LONG,

WM. G. HENDERSON.