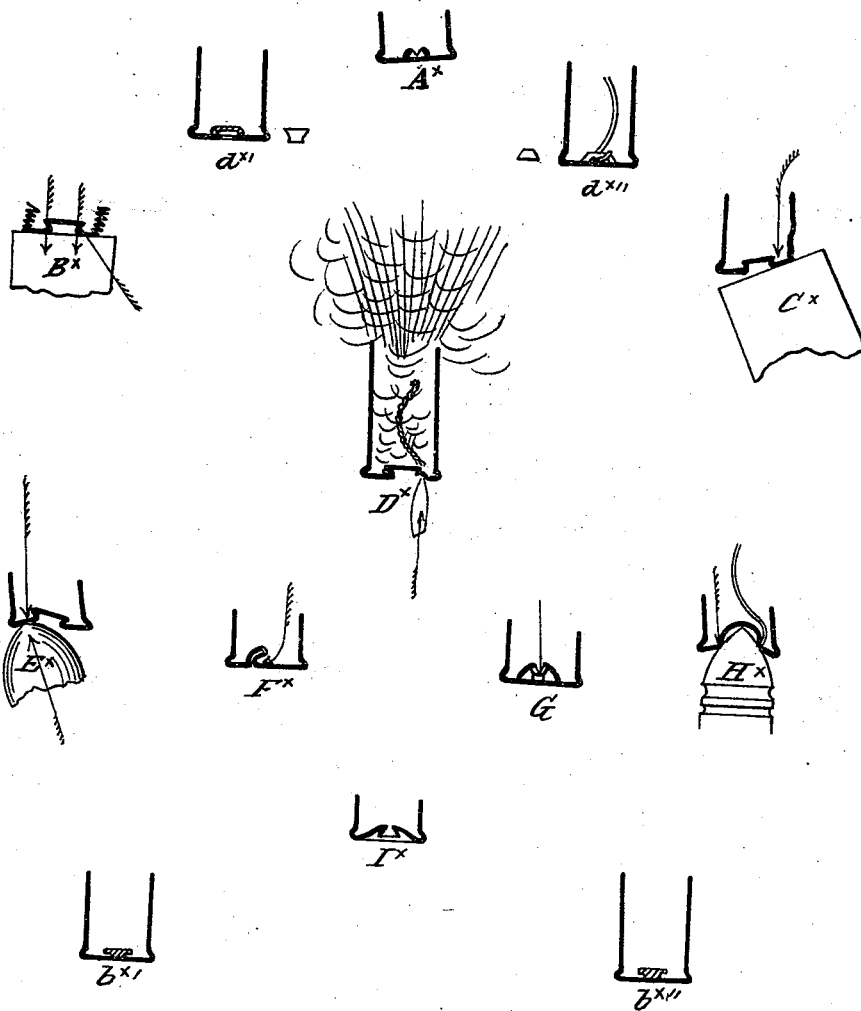


J. V. MEIGS.
Metallic Cartridge.

2 Sheets—Sheet 2.

No. 87,352.

Patented March 2, 1869.



Witnesses:
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UNITED STATES PATENT OFFICE.

J. V. MEIGS, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. 87,352, dated March 2, 1869.

To all whom it may concern :

Be it known that I, JOE V. MEIGS, of Washington city, in the District of Columbia, have invented a new and useful Method of Constructing Metallic Cartridges, of which the following is a full, clear, and exact description:

The objects of my invention are to secure in a metallic cartridge certainty in firing, simplicity and cheapness in construction, and immunity from accidental explosions; and to these ends the improvements herein claimed consist in a novel mode of constructing cartridge-shells with a central chamber to receive the fulminate formed in the base of the cartridge, this chamber being so formed as not to extend to the edge of the base of the shell, by which means the cartridge can only be exploded by a sharp punching stroke in the line of the axis, as otherwise the metal would yield and widen the space in which the fulminate is contained instead of compressing it, which compression is necessary to produce an explosion.

To carry out these objects I stamp out or spin up the case A in any well-known way, into the shape shown in Fig. 1, and then compress the central cavity B into the form shown in Fig. 2^a. The fulminate C is then placed around the neck or flange, as shown in Fig. 3. In order to insure the instantaneous explosion of the charge, I propose to place around the fulminate and within the shell a fuse, D, which will burn even more rapidly than powder, and thus accelerate the explosion of the entire charge; or the fuse may be so constructed as to ignite the charge at its forward end. The bending or folding of the metal renders the case rigid enough to resist the blow of the hammer without an anvil, and it will be seen that the bottom of the case is concave; which form prevents the fulminate from accidental explosion by dropping on a flat surface.

The operation of my improved cartridge is illustrated by Sheet 2 of the accompanying drawings, in which—

Figure B^x represents the effect of an axial crushing force exerted by a blunt-pointed instrument larger than the base of the shell. Fig. C^x represents the effect of a diagonal inward blow from a similar instrument. Fig. D^x represents the effect of an axial punching stroke from a firing-pin, such as I propose to use. Fig. E^x represents the effect of a diagonal outward blow from a bullet. Fig. H^x represents

the effect of a direct blow from the point of a bullet. Fig. A^x represents a circular receptacle inclosing the fulminate. Fig. d^{x'} represents a chamber riveted in the shell. Fig. d^{x''} represents a similar one soldered to the base of the shell. Fig. b^{x'} represents a riveted button-shaped fulminate-chamber, and Fig. b^{x''} a similar soldered one. Fig. F^x represents a single indented overlapping straight flange; Fig. G^x, a similar double overlapping flange, and Fig. I^x, still another form of the same.

From these diagrams it will be seen that any blow (except that of a sharp punching instrument as in Fig. D^x) on the shell will tend to separate the walls of the fulminate-chamber instead of compressing them, and thus prevent the ignition of the fulminate, and consequently greatly diminish the liability to accidents, which is so great among cartridges as at present constructed.

In Fig. 4 I have shown the fulminate as inclosed in the overlapping flanges of a straight central groove, by which the same result is attained in a different manner from that heretofore described.

Figs. 5 and 6 show another mode of accomplishing the same result by a cross-shaped groove.

By the modes of construction above shown the walls of the fulminate-chamber are rendered sufficiently rigid to explode the fulminate by the blow of the hammer upon the firing-pin without using a separate anvil, and the fulminate chamber itself forms the anvil on which to explode the fulminate by compressing it in its groove, but when the cartridge is struck in any save the proper direction and by the proper point, the groove in which the fulminate is held will open instead of being compressed, and thus prevent the explosion.

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

The method, herein described, of preventing accidental explosions in metallic cartridges by placing the fulminate in such relation to the base and to the anvil formed by the walls of the fulminate-chamber that it can only be exploded by a blow in a given direction, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

Witnesses: JOE V. MEIGS.
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