

LOGAN & ELDREDGE.

Cartridge Shell.

No. 97,537.

Patented Dec. 7, 1869.

Fig. 1

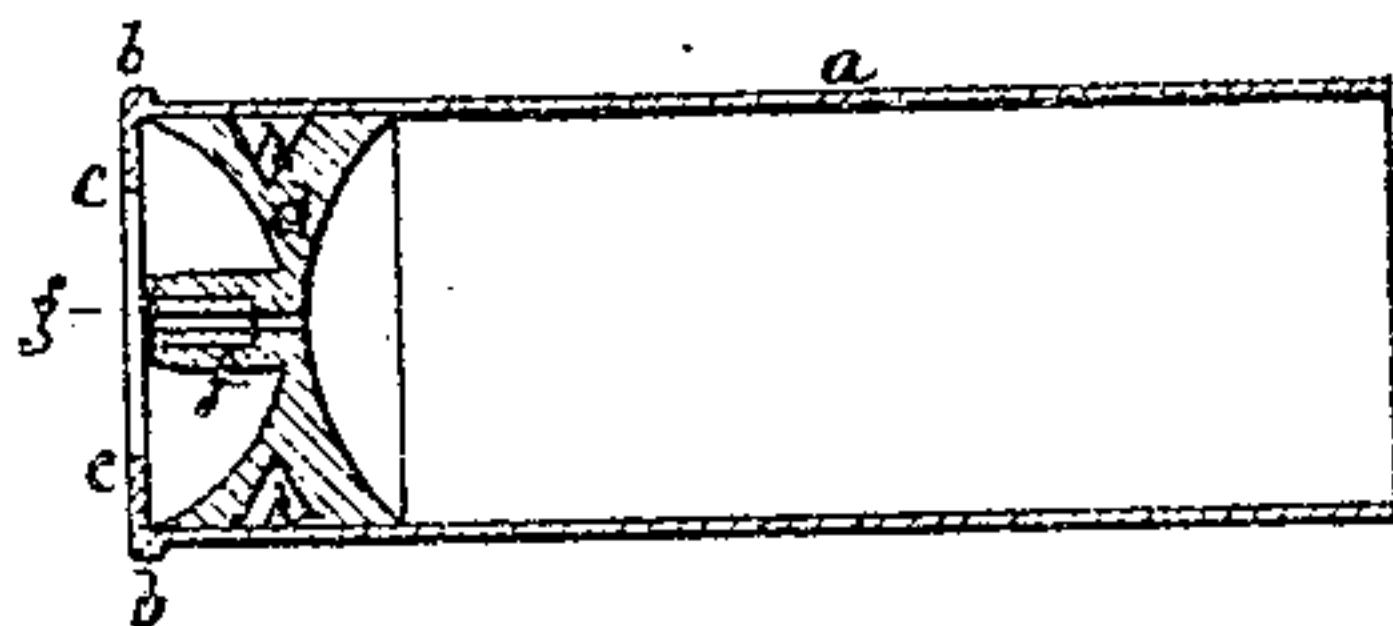


Fig. 2

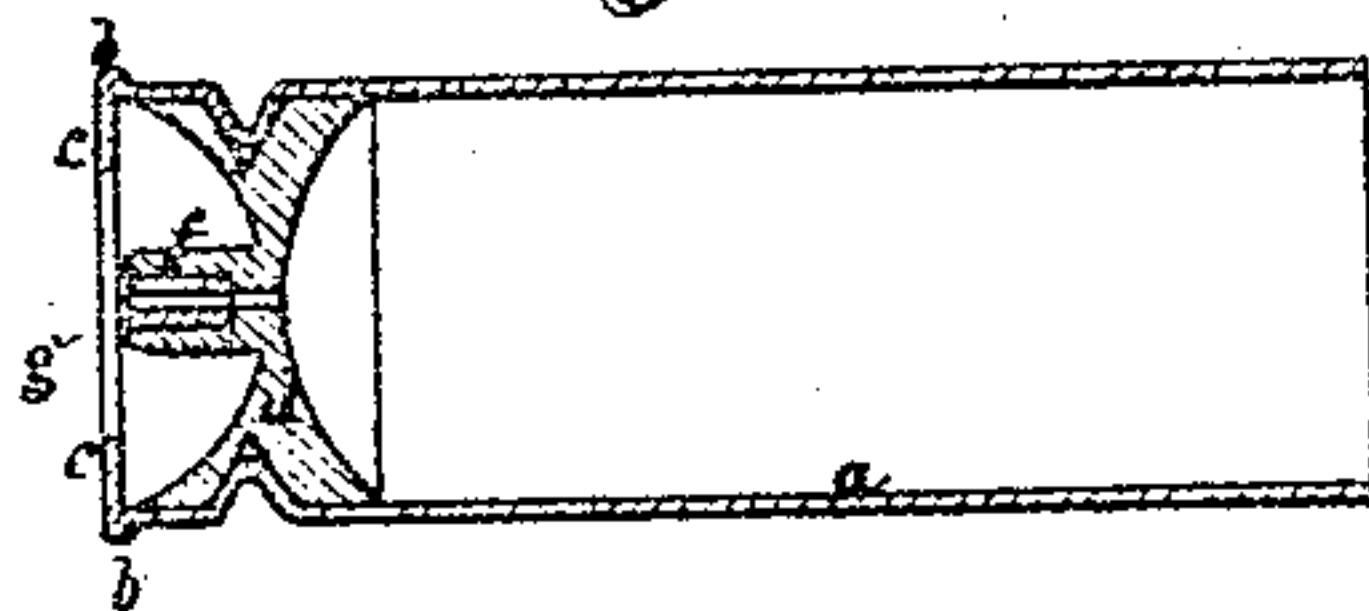


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN LOGAN AND D. W. ELDREDGE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. 97,537, dated December 7, 1869.

To all whom it may concern:

Be it known that we, JOHN LOGAN and D. W. ELDREDGE, both of Boston, in the county of Suffolk and State of Massachusetts, have invented Improvements in Metallic Cartridge-Shells; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

Our invention relates to improvements in that class of flanged iron central-fire cartridges which are used in breech-loading guns mostly charged with shot, though they may be charged with a single projectile.

Figures 1 and 2 are central longitudinal sections of cartridge-shells embodying our invention.

a is a cylindrical shell of brass or other suitable metal or alloy, which is formed with an outwardly-projecting flange, *b*, which serves the usual purpose of a stop to prevent the cartridge from being pushed too far into the chamber of the gun, and of a rim for the cartridge-extractor to act against in withdrawing the shell from the chamber of the barrel. The material of the shell is extended as an inwardly-projecting flange, *c*, toward the axis of the shell, but leaving an opening of about the diameter of an exploded cap, which takes the form of a cross, as seen in Fig. 3. The cartridge-shell is provided with a breech-piece, *d*, preferably made of bronze or other suitable alloy or metal, of the form shown in Figs. 1 and 2, and of the diameter of the bore of the shell, so that the breech-piece can be entered at the mouth of the shell and pushed down against the flange *c*. The breech-piece is made with a cap-nipple, *f*, projecting toward the opening left by flange *c*, which nipple is counterbored from its projecting end to receive a hollow steel cylinder, *g*, the bore of the steel bushing being continued through the metal of the breech-piece, so as to admit fire to the powder contained in a shell when a cap is exploded upon the nipple. As in central-fire breech-loading guns the hammer forces a pin toward the center of the nipple, it follows that the steel bushing receives the force of the

blow, and experience shows that it effectually withstands such blows, and remains uninjured by them. The nipple, being made of bronze, does not rust like steel, and, being made integral with the breech-piece, does not work loose or break.

The breech-piece is held in place in either of the following ways: In the groove seen at *h* a strip of solder is wound before the breech-piece is forced home. After the breech-piece is forced against the flange *c*, the shell is heated sufficiently to cause the solder to flow into the joint between the periphery of the breech-piece and the bore of the shell, so that the two parts are neatly and effectually soldered together; or the metal of the case may be depressed into the groove in the breech-piece, as seen in Fig. 2. The purpose of the inwardly-projecting flange *c* is to retain, in the cavity between said flange and the nipple, the exploded cap until the shell is withdrawn from the gun, when it may be picked out with a knife-blade or any suitable small-implement. This flange *c* prevents exploded caps from falling into the joint between the barrel and the breech-block of the gun, or into the mechanism of the gun, which is liable to occur with cartridges having projecting central-fire nipples.

In cartridges like the Berdan the shell is weak, and apt to rupture in the angle formed at the juncture of the wall with the base by bending the metal.

In our cartridge, it will be seen that the angle of the breech-face with the wall of the shell is quite obtuse, owing to the concavity which we give the face against which the explosion reacts.

To hold the steel bushing of the nipple, we slightly bevel the corner of the exposed end of the bushing, and rivet the metal of the nipple over the chamfer of the bushing, which, with a tight-driving fit of the bushing in the counterbore of the nipple, effectually holds the bushing in its place.

We claim—

1. A cartridge-shell made of a tube of thin sheet metal, open-ended, and with one end formed into the flange *b*, and breeched with a separate piece of metal, with which the nipple is integral when the nipple is exposed, so

that it can be capped and recapped, as described.

2. A cartridge-shell in which the breech-piece is made separate from the tube, when combined with a nipple integral with the breech-piece and bushed, as described.

3. The flange *c*, projecting inwardly, and combined with a nipple contained in a cavity

in the rear end of the shell, for the purpose specified.

JOHN LOGAN.

D. W. ELDREDGE.

Witnesses:

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