

H. BERDAN.
Metallic Cartridge.

No. 82,587.

Patented Sept. 29, 1868.

Fig. 1.

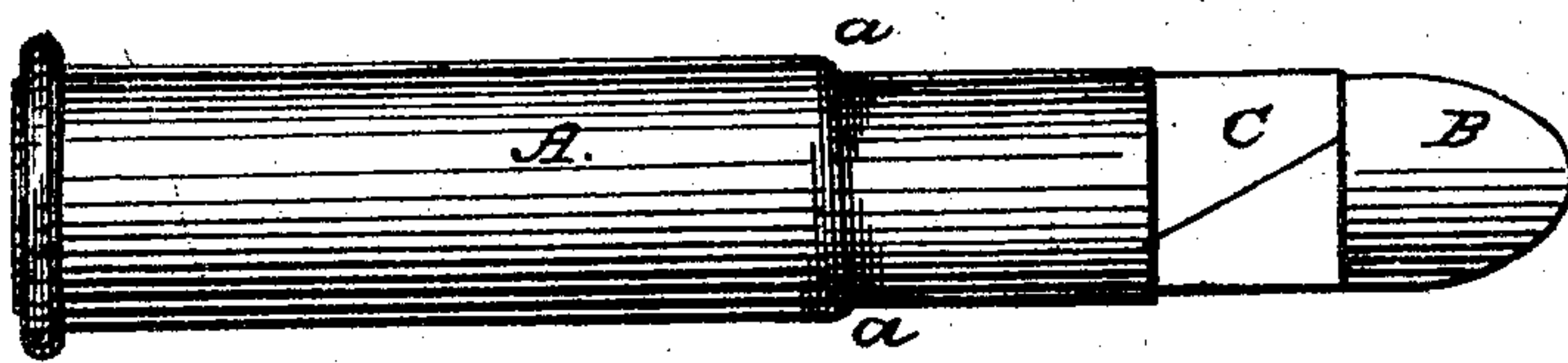
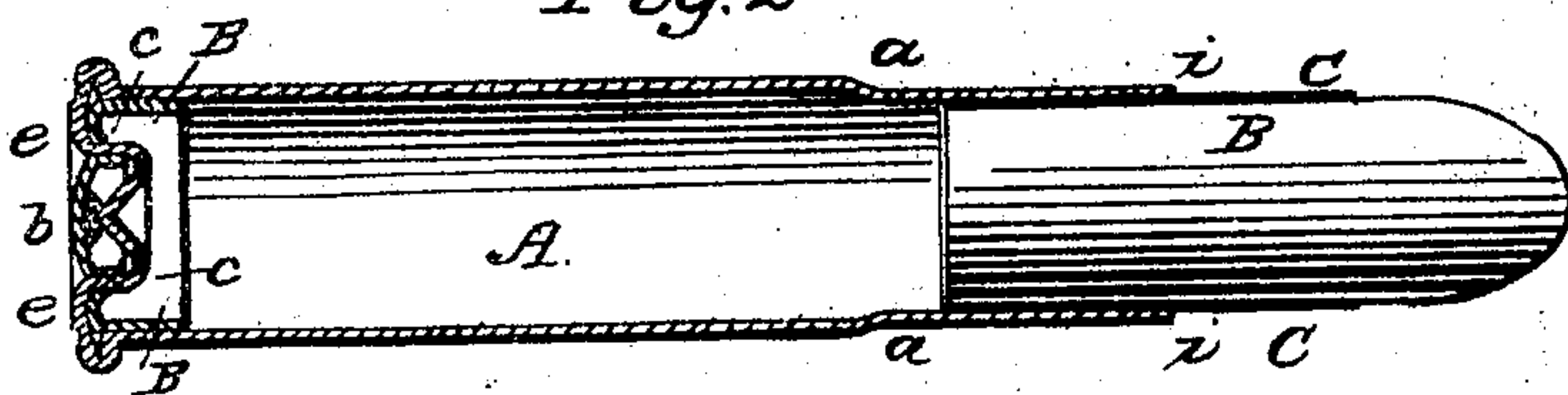


Fig. 2



Inventor;

H. Berdan
per Brannellorn & Co

Witnesses
A. Lellere
A. H. Hume

United States Patent Office.

HIRAM BERDAN, OF NEW YORK, N. Y., ASSIGNOR TO THE BERDAN FIRE-ARMS MANUFACTURING COMPANY, OF THE SAME PLACE.

Letters Patent No. 82,587, dated September 29, 1868.

IMPROVEMENT IN METALLIC CARTRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HIRAM BERDAN, of the city, county, and State of New York, have invented certain new and useful Improvements 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, forming part of this specification, in which—

Figure 1 is a longitudinal outside view, on an enlarged scale, of a cartridge with my improvements.

Figure 2 is a central longitudinal section of the same, the charge of powder being omitted to enable the re-enforcement of the head of the shell to be more plainly seen.

Similar letters of reference indicate corresponding parts in both figures.

The first part of this invention relates to the re-enforcement of the head of the metal shell of a cartridge by means of an internal lining-cup of metal, and its object is to prevent the swelling of the rear portion of the shell by the insertion of such cup, which is liable to occur when the said cup is secured in place by being driven tightly into the shell, as heretofore has been commonly done; and to this end, it consists in securing the said cup in place by providing in the bottom of the said cup an opening or cavity, and providing the head of the shell with an internal projection, which fits tightly into said opening or cavity, and upon which the said cup is driven tightly, the exterior of the said cup being made to fit easily into the interior of the shell.

The second part of the invention relates to the use of patched bullets in cartridges with metal shells.

The advantage of patching bullets when accurate shooting is desired, is too well known to require explanation here. Hitherto, however, it has not been considered practicable to use patched bullets in metal-cased cartridges for breech-loaders, and with the copper shells heretofore commonly used, it has been totally impracticable, for, owing to the inelasticity of copper when the shell has been made of that metal, of ordinary thickness, the tightness with which it has been necessary to drive in the bullet, to insure its retention therein, has caused the part of the shell which receives the bullet to be bulged or swelled out, and the bullet or patch has had to be driven in so far that there would not be left protruding from the shell a sufficient length of patch to enter as far as desirable into the bore of the barrel beyond the shell, in loading; and, if the metal has been made thicker, the tightness above mentioned has caused the patch, when made of paper, which is the only material practicable for patching the bullets of such cartridges, to be torn from the bullet in inserting the latter into the shell.

After many experiments, I have found that by using a patch of thin but very tough paper, and a cartridge-shell drawn from rolled sheet brass, which is very elastic, the patched bullet may be inserted into the shell so easily, and yet be held by the elasticity of the shell with sufficient security, without either bulging the shell perceptibly or tearing the patch; and this part of my invention consists in the combination of a patched bullet with a brass cartridge-shell.

To enable others to understand fully the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A is the metal shell of the cartridge, made substantially of the usual form, except that it is contracted from *a* forward, and that the centre of the head is depressed inward from the exterior in such a manner as to form a cylindrical or very slightly-conical projection, *c*, in the interior of the shell.

The contraction above mentioned is not, however, essential to the carrying out of the present invention, and the depression in the head is not of itself a part of the said invention, as it serves the purpose for which such a depression has been previously used, namely, as a receptacle for the percussion-primer *b*.

B is the re-enforce, made of brass, or other metal or material, and fitted snugly but quite easily into the part of the shell in front of the head, and having a central opening or cavity, *e*, in its bottom, fitting tightly on to the projection *c* in the interior of the shell.

This cup is inserted into the shell before the forward part is contracted, and is driven down tightly on to

the projection *c*, with a punch of suitable character, and thereby secured in the shell without any reliance upon the fit of its exterior to the interior of the shell, thereby preventing any bulging of the shell in front of the head which might interfere with loading, but yet fitting so snugly to the sides of the shell that when the cartridge is fired, the sides of the cup will at once expand against the shell, and so insure perfect re-enforcement and protection. This method of securing the re-enforce-cup is applicable to shells of brass, copper, or any other metal.

C is the bullet, D is the patch, made of thin linen paper, such as is used for bank-notes, rolled tightly round the cylindrical portion to the extent of about two thicknesses, and then drawn over its base, and tied, or otherwise secured.

To prepare the brass shell for the reception of the bullet thus patched, the mouth of the shell has its edge slightly bevelled inward, as shown at *i i'*, by means of a punch, which enters the shell while the latter is held in a die. The shell having been thus prepared, the patched bullet is inserted by any suitable means whereby its axis is kept in line with the axis of the bullet.

The elastic character of the brass of which the shell is composed, causes the bullet to be held with sufficient tightness to prevent its accidental displacement, without inserting the patched portion into the shell so far as not to leave enough of it protruding beyond the mouth of the shell to insure the proper entrance of the patch and bullet into the barrel of the fire-arm.

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

1. Securing the re-enforce-cup in the cartridge-shell by means of a projection on the interior of the head of the shell, and an opening or cavity in the bottom of the cup fitting tightly on the said projection, substantially as and for the purpose herein described.
2. The combination of the patched bullet and the brass cartridge-shell, drawn from sheet metal, substantially as and for the purpose herein set forth.

Witnesses:

A. LE CLERC,
J. W. COOMBS.

H. BERDAN.