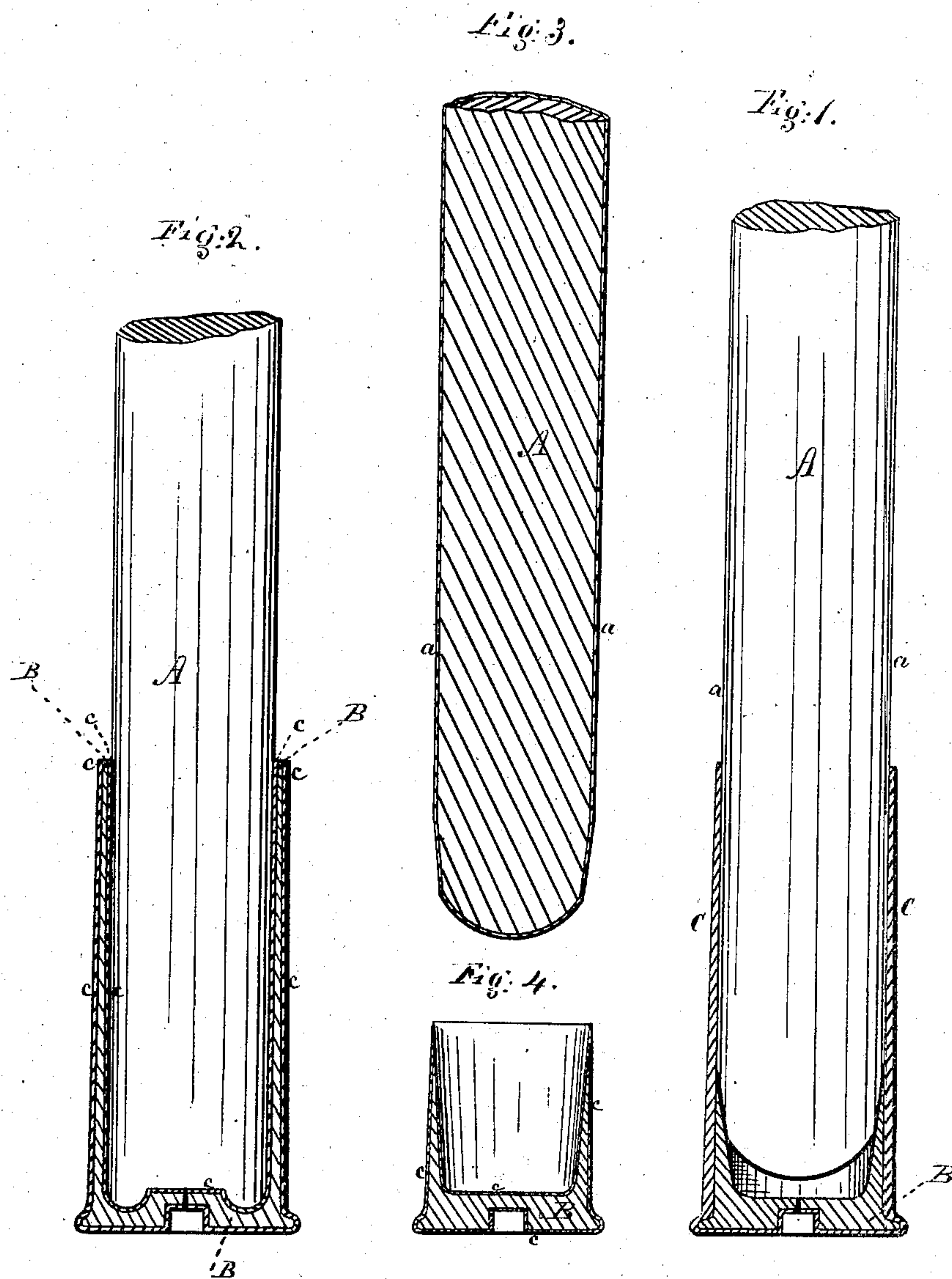


S. W. WOOD.  
Metallic Cartridge-Cases.

No. 144,012.

Patented Oct. 28, 1873.



Witnesses  
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# UNITED STATES PATENT OFFICE.

STEPHEN W. WOOD, OF CORNWALL, NEW YORK.

## IMPROVEMENT IN METALLIC CARTRIDGE-CASES.

Specification forming part of Letters Patent No. 144,012, dated October 28, 1873; application filed August 29, 1873.

*To all whom it may concern:*

Be it known that I, STEPHEN W. WOOD, of Cornwall, county of Orange and State of New York, have invented a new and useful Improvement in Metallic Cartridges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 represents a central longitudinal section of a case for a cartridge with the mandrel upon which it is formed in elevation. Fig. 2 is also a central longitudinal section of a case for a cartridge with the re-enforce extending the entire length of the case and covered both exteriorly and interiorly with deposited metal. Fig. 3 represents a mandrel upon which a case is deposited in section. Fig. 4 shows a central longitudinal section of the re-enforce to a cartridge detached, and having a covering of nickel previous to being placed upon the lower end of the mandrel to receive the body of the case deposited thereon.

My invention relates to a metallic case for a cartridge when made by electro-deposition, and re-enforced substantially in the manner herein set forth, and for the more perfect understanding of the nature of the article produced the method of fabrication is also described.

Like letters designate corresponding parts in all of the figures.

A in the accompanying drawings represents a mandrel of the required size and form, upon which the case is deposited. This mandrel, of any suitable material, being first shaped, is immersed in a bath of nickel, and receiving a coating, *a*, is removed therefrom and polished, so as to present a smooth surface, upon which to deposit the metal for the body of the cartridge-case, and allow of the deposited case being easily removed therefrom. The mandrel might be made of metal fusible at a low temperature, so as to be melted out after having deposited the case thereon; or paraffine, bees-wax, or other suitable substance might be employed instead of metal, in which case a covering of plumbago would be necessary to create a metallic base upon which to commence the

deposit of the metal for the cartridge-case. In order to re-enforce the base of the case to increase its strength a head of hard metal, B, is provided, which is placed upon the end of the mandrel A, thereby forming the contour or shape of which the cartridge is to be. The mandrel A with its re-enforce B is then immersed in an electro-galvanic bath, and the metal C, of which the case is to be formed, is deposited thereon, covering the re-enforce B, and extending upon the surface of the mandrel a sufficient distance to form the body thereof of the required length, as represented in Fig. 1. Thus, when the whole shall have been removed from the mandrel A, the re-enforce B and deposited body C are united as one metal, and produce a case for a cartridge re-enforced with hard metal as a base previously prepared, and having a body of comparatively soft metal. The re-enforce B may extend the entire length of the body of the case, if preferred, as represented in Fig. 2. A coating of nickel or other metal, *c c*, may be given to the re-enforce B over the whole of both the interior and exterior of the case, as shown in Fig. 2, thereby inclosing the re-enforce between the two coverings.

The re-enforce B may be made of malleable iron, if desired, which will admit of being swaged and shaped without cracking, or otherwise impairing its tensile strength.

A cartridge made as above described is free from the danger of any gas, upon explosion, getting under or below the re-enforce, and has a more solid base than is practicable in a case made from drawn metal, while the thickest, and consequently weightiest, part is composed of a cheaper and stronger metal.

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

A metallic case for a cartridge re-enforced with and having a hard-metal base in intimate connection and contact therewith, as herein described.

STEPHEN W. WOOD.

Witnesses:

J. S. BROWN,  
R. D. O. SMITH.