

H. C. SPAULDING  
METALLIC CARTRIDGE.

No. 46,034.

Patented Jan. 24, 1865.

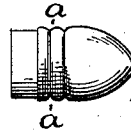
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



*Witnesses:*  
*Chas. H. Walker*  
*W. L. Bennett*

*Inventor:*  
*Henry C. Spaulding*  
*by his attorney*  
*E. J. Renwick*

# UNITED STATES PATENT OFFICE.

HENRY C. SPALDING, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. **46,034**, dated January 24, 1865.

*To all whom it may concern :*

Be it known that I, HENRY C. SPALDING, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Metallic Cartridges; and that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawing, in which—

Figure 1 represents a view of a metallic cartridge constructed according to my invention. Fig. 2 represents a view of the ball separate from the shell or cartridge-case, and Fig. 3 represents a section of the cartridge-case before its application to the ball.

Metallic cartridges are usually constructed with copper shells or cartridge-cases, which, when the cartridges are completed, are in contact with the lead balls. It is also customary to grease the balls in order to prevent the leading of the gun, and the grease becomes smeared over the copper shell as well as the ball. As lead and copper have different affinities for oxygen, a galvanic action takes place in the cartridge by reason of the contact of the two metals, and the result of this action is the deterioration of the powder with which the cartridge is charged; hence metallic cartridges, which in many respects are superior to all others, deteriorate by age, and cannot always be relied upon.

The object of my invention is to obviate this defect of metallic cartridges; and it consists in coating the metal before the ball is applied to the shell with a non-conducting coating, which prevents the contact of the metal of the ball with that of the shell, and thereby prevents the galvanic action.

The material which I prefer for this purpose is collodion, or gun-cotton dissolved in ether, in the form in which it is now found in chemists' shops; and the best mode with which I am acquainted of applying it is as follows: The cartridge-shells are first charged with the fulminate in the usual manner, as represented by the red color in Fig. 3, and are permitted to dry. Then a small quantity of the liquid collodion is introduced into each shell, and the shell is

turned upside down to pour out as much as will run from it. These operations leave the whole interior of the shell covered with the glutinous liquid, which, drying, forms a perfect coating. The butts of the balls are dipped in the liquid as far as the line *a a*, Fig. 2, and are permitted to dry, the balls during the drying being set in shallow sockets with their butts uppermost, by which means the portion of each ball which is to be applied to the shell becomes thoroughly coated. When the shell and ball are dry, the former is charged with powder, and the ball is applied in the usual manner.

The cartridge produced in this manner has its interior coated with a non-conducting coating which prevents the contact of the metal of the ball with that of the shell, so that galvanic action is prevented. It is not essential for this purpose that both ball and shell should be coated, but this mode of embodying the invention is the best, because the powder is thereby prevented from coming in contact with any naked metal surface, and is in fact shut up in a casing of an inert material, (the coating,) which is retained in form and continuity by the metal. The form of the cartridge may of course be varied to suit the fire-arm with which it is to be used, and other non-conducting coatings than collodion may be used if deemed best.

I do not claim the invention of a metallic cartridge, nor of collodion, nor, broadly, the application of a coating of collodion or other varnish to cartridges, as I am aware that the exteriors of paper and gun-cotton cartridges have been coated with collodion; but

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

A metallic cartridge coated on its interior with a non-conducting coating, substantially as set forth.

In witness whereof I have hereunto set my hand this 28th day of October, A. D. 1864.

HENRY C. SPALDING.

Witnesses:

JAS. S. FERGUSON,  
W. L. BENNEM.