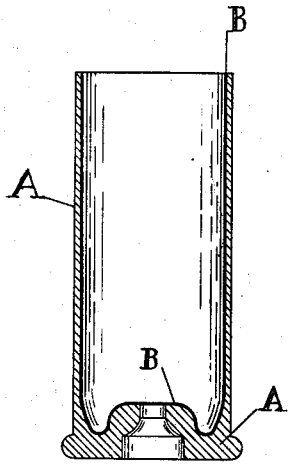
C. D. LEET & H. A. CHAPIN.
Metallic-Cartridges.

No. 208,247. Patented Sept. 24, 1878.



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UNITED STATES PATENT OFFICE.

CHARLES D. LEET AND HENRY A. CHAPIN, OF SPRINGFIELD, MASS.

IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. **208,247**, dated September 24, 1878; application filed January 8, 1877.

To all whom it may concern:

Be it known that we, CHARLES D. LEET and HENRY A. CHAPIN, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Metallic Cartridges; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which our invention is represented by a sectional view of the shell, showing the brass exterior at A and the copper lining at B.

In the manufacture of metallic cartridge-shells copper was formerly used almost exclusively, on account of its freedom from liability to corrode; but the inelasticity of that metal frequently causes the shell, when fired, to permanently expand, stick in the gun, and temporarily disable it. To obviate this difficulty brass cartridge-shells have been generally used of late years; but this composition is so liable to become injured and destroyed by action of the chemicals with which the shells are loaded that vast quantities of cartridges so constructed have been annually condemned by the governments for which they were made.

The object of our invention is to remedy all these evils by the production of a shell which shall combine the strength and elasticity of brass with the non-corrosive properties of copper, so that the cartridges will keep for any length of time, in any climate, without deterioration, and, when fired, will cause no trouble or inconvenience from the sticking of the shells in the gun.

To this end our invention consists in a metallic cartridge-shell composed of an exterior body of brass and a rolled interior lining of copper, substantially as we will now proceed to set forth.

In carrying our invention into practice the outer shell may be rolled and drawn, and the inner shell or lining also rolled and drawn, and the two combined in any suitable manner to form a cartridge-shell having the qualities above described; but we recommend that the copper and brass be first united in the ingots or thick sheets, and then rolled down so as to form a uniform sheet of double metal having a strong body of brass on one side and a light plating of rolled copper on the other side, and that the blanks be then cut out, cupped, and drawn, so as to leave the rolled-copper face on the inside of the shell.

We claim as our invention—

1. A metallic cartridge-shell having an exterior body of rolled and drawn brass and an interior lining of rolled and drawn copper, substantially as described.

2. A metallic cartridge-shell consisting of a brass exterior case and a drawn-copper lining, the two being united together, substantially as set forth and described.

3. A brass cartridge-shell with a copper lining, the shell and lining being soldered or brazed together, substantially as described.

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