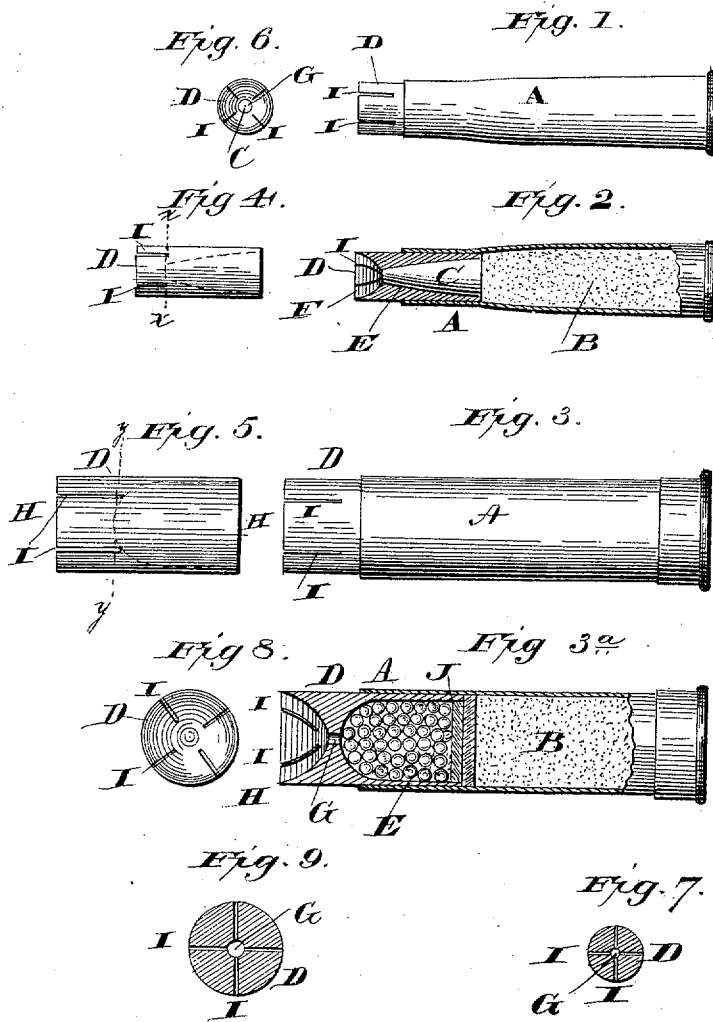


(No Model.)

B. LONG.  
CARTRIDGE.

No. 448,057.

Patented Mar. 10. 1891.



WITNESSES:  
*J. L. Curand.*  
*& A. Browne.*

INVENTOR:  
*Benjamin Long,*  
BY  
*James P. Rogers & Co.,*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

BENJAMIN LONG, OF BOULDER, COLORADO.

## CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 448,057, dated March 10, 1891.

Application filed June 20, 1890. Serial No. 356,067. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN LONG, a citizen of the United States, and a resident of Boulder, in the county of Boulder and State of Colorado, have invented certain new and useful Improvements in Cartridges; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to  
10 which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a side view of my improved  
15 rifle-cartridge. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a side view of my improvement as applied to a shot-cartridge. Fig. 3<sup>a</sup> is a longitudinal sectional  
20 view of the same. Fig. 4 is a side view of the bullet with its split casing or jacket removed from the shell or cartridge case. Fig. 5 is a similar view of the shot-cartridge removed from the shell. Fig. 6 is an end view  
25 of the jacketed bullet shown in Fig. 4. Fig. 7 is a transverse sectional view of the same on line *xx*, Fig. 4. Fig. 8 is an end view of the shot-cartridge shown in Fig. 5, and Fig. 9  
30 is a transverse sectional view of the same on line *yy* in Fig. 5.

Like letters of reference denote corresponding parts in all the figures.

This invention relates to cartridges or so-called "fixed ammunition," and is applicable  
35 alike and with equal advantages to rifle-cartridges charged with bullet and shotgun-cartridges charged with shot of any desired size, the object of my invention being to prevent  
40 the barrel from "leading," and also to insure a more steady and uniform flight of the bullet or shot, (as the case may be,) combined with a comparatively flat trajectory.

My improvement consists in the combination, with the projectile, whether this be a  
45 bullet or a charge of shot, of a peculiarly-constructed jacket or envelope made of wood or other similar material, and so constructed that it will split into pieces, fly apart, and become detached from the bullet or shot after  
50 the same leaves the muzzle of the gun.

Reference being had to the accompanying drawings, the letter A denotes the shell or

cartridge case, B the powder-charge, and C the projectile. The latter may be either a single bullet, as in Figs. 1, 2, and 4, or it may  
55 be a compact charge of shot of any desired size, as in Figs. 3 and 5. If the projectile is solid, (as, for example, a rifle-bullet,) it is made pointed and tapering and without  
60 grooves or cannellures, and is inserted point foremost into the cylindrical jacket D, which has a recess E of such a size and shape as to  
65 fit the bullet or "picket" closely. I prefer to make this jacket or envelope D of wood, cut with the grain, so that it will split longitudinally into sections and fly apart, leaving the  
70 bullet naked after the latter leaves the muzzle of the gun. To provide for this splitting and parting of the jacket or envelope D, its forward end is cupped or concaved, as shown at F, and bored through centrally, at G, into the  
75 projectile-recess E. The rim or edge H, formed by the concavity F, is split or slitted longitudinally, as shown at I, so that as the jacketed projectile leaves the muzzle at a high  
80 velocity the resistance of the air, operating in the cup or concavity F in the front end of the jacket, will split the jacket longitudinally  
85 along the slits I into four or more parts or sections, (according to the number of slits,) this splitting of the body of the jacket being  
90 facilitated by the central bore or aperture G, which connects the cup F with the projectile-recess or shot-chamber E.

Although as a matter of convenience and economy I prefer to use wood for the construction of the jacket D, (because wood is  
85 cheap, takes the rifling easily, keeps the barrel clean, and splits readily,) yet I desire it to be distinctly understood that I do not limit myself to any particular substance or material for the jacket or envelope.

When used with shot, the chamber E is closed by a thin wad J to confine the shot in the usual manner, the jacket operating in  
95 that case not only as a preventive of leading the barrel, but also as a shot-concentrator, so that by the aid of my improvement shot may be fired from a cylindrical smooth-bore barrel with the same concentrating and far-carrying effect as from a choked barrel. When  
100 used for rifle-cartridges, the jacket will expand, and not only effectually prevent lead-

ing of the barrel and keep the same in good condition, but it dispenses with the use of lubricants and patches and permits of the firing of hard bullets without the least injury to the lands or grooves of the rifle, as the projectile itself does not come into contact with these while passing through the barrel.

I am well aware that it is not new to cover solid projectiles with a jacket or casing of metal, leather, papier-maché, and many other substances, and I am also aware that so-called "shot-concentrators," or "wire cartridges," have been used before for the purpose of concentrating or "bunching" the shot fired from a cylinder-gun. I do not, therefore, claim such devices broadly; but

What I claim as my improvement, and desire to secure by Letters Patent of the United States, is—

1. A cylindrical projectile jacket or envelope made of wood or equivalent material adapted to split longitudinally, having at its rear end a recess or chamber adapted to fit and cover the projectile and at its front end a cup-shaped recess or concavity, said two recesses being connected by a central bore, substantially as and for the purpose shown and set forth.

2. A cylindrical projectile jacket or envelope made of wood or equivalent material adapted to split longitudinally, having at its

rear end a recess or chamber adapted to fit and cover the projectile and at its front end a cup-shaped recess or concavity, the sides of which are split longitudinally, substantially as and for the purpose shown and set forth.

3. A projectile embedded in a jacket or envelope of wood or equivalent material adapted to split in the direction of the greatest length of the projectile, the forward part of said jacket being cup-shaped and extended in front of the projectile, with a central bore or aperture connecting said cup-shaped recess with the recess in which the projectile is embedded, and having the edges of the recessed forward part of the jacket slitted longitudinally, substantially as and for the purpose shown and set forth.

4. A cartridge comprising in its make-up the following elements, viz: the cartridge-case A, powder-charge B, projectile C, and jacket D, having cup-shaped recess F, split longitudinally at I, and central bore G, substantially as and for the purpose herein shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

BENJAMIN LONG.

Witnesses:

CHAS. M. CAMPBELL,  
J. H. O'BRIEN.