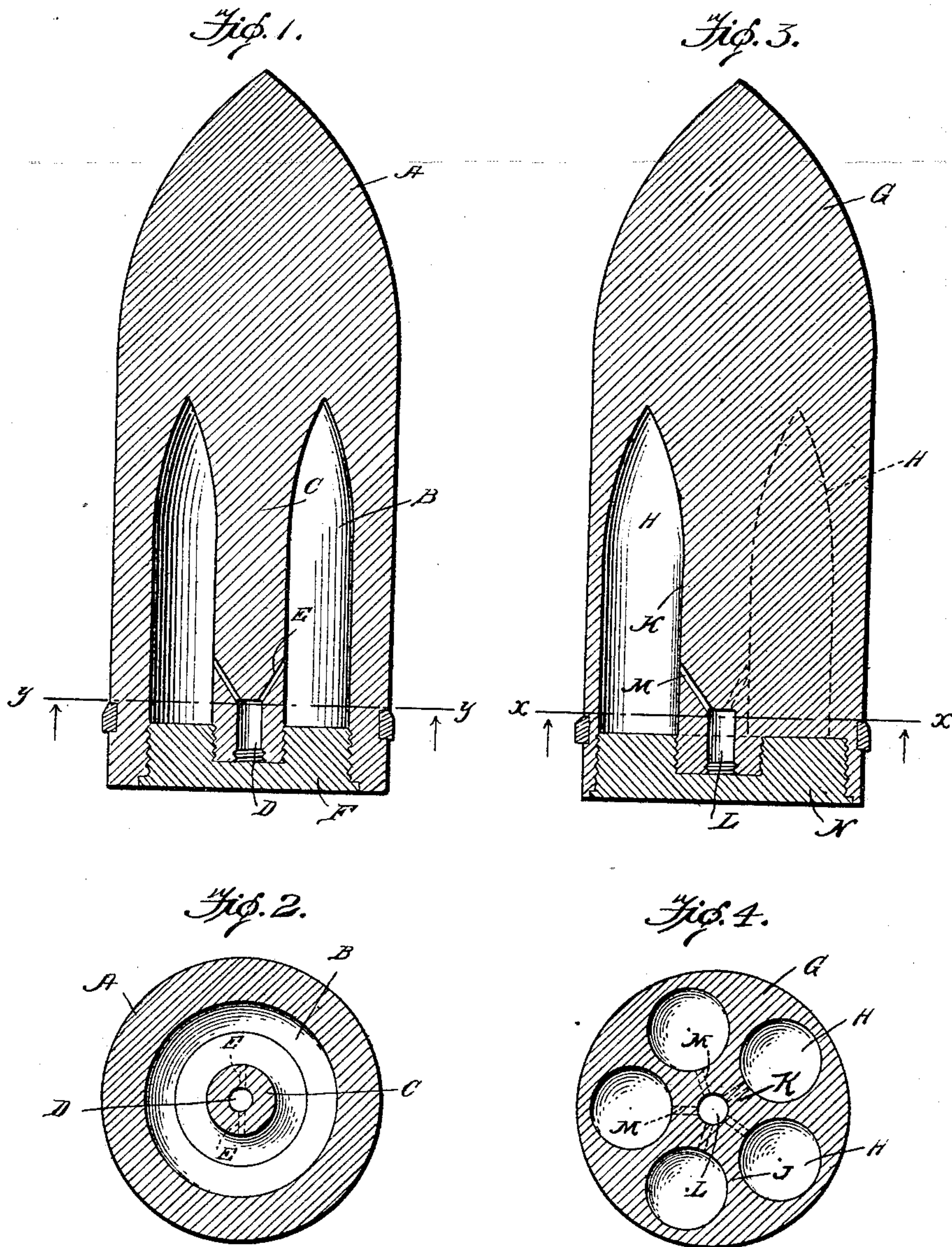


No. 863,698.

PATENTED AUG. 20, 1907.

J. L. BROWN.  
ARMOR PIERCING PROJECTILE.  
APPLICATION FILED DEC. 21, 1906.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES LEMUEL BROWN, OF INDIAN HEAD, MARYLAND.

## ARMOR-PIERCING PROJECTILE.

No. 863,698.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed December 21, 1906. Serial No. 348,930.

*To all whom it may concern:*

Be it known that I, JAMES LEMUEL BROWN, a citizen of the United States, residing at Indian Head, in the county of Charles and State of Maryland, have invented certain new and useful Improvements in Armor-Piercing Projectiles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in armor piercing projectiles, and has special reference to an improved construction of explosive shell or projectile, in which the same is strengthened to within the impact strain without "mushrooming", and yet have its explosive so held as to cause the maximum amount of damage when the shell bursts, the walls of the shell surrounding the explosive being thin, and not intended to withstand the impact strain.

To carry this feature in effect, my shell or projectile, is constructed with a heavy piercing point or end and with a single or a series of parallel explosive receptacle or receptacles, arranged symmetrically about the axis of the shell, the axis or strengthening column extending centrally of the piercing point to the base, and carrying a fuse in its base, with flash openings to the receptacle or receptacles; a removable plug forming the base of the shell.

To attain these objects, my invention consists of a shell or projectile, embodying novel features of construction and combination of parts, substantially as disclosed herein.

Referring to the accompanying drawings:—Figure 1 is a vertical central sectional view of a shell or projectile constructed according to my invention. Fig. 2 is a cross section on line  $y-y$  thereof. Fig. 3 is a similar view to Fig. 1 of a modified form, and Fig. 4 is a cross section of line  $x-x$  thereof.

Referring by letter to the drawings;—A designates the shell or projectile body, which is provided with the usual armor piercing point, but in this case is provided with the explosive recess or receptacle B, which surrounds the central strengthening column or stem C. This column or stem is provided at its lower end with the removable fuse D, and the flash ducts or openings E, by means of which the explosive in the receptacle is exploded at the proper time. Removably secured in the base of the body covering the fuse's base and forming a bottom or base for the recess or receptacle is the circular plug F, which is threaded so as to engage the lower end of the column C and the threaded portion

of the shell. This form of projectile is clearly shown in Figs. 1 and 2.

In Figs. 3 and 4, I embody the same principle, but construct the shell G, with a series of explosive recesses or receptacles H, which are separated from each other by the thin walls J, and the central column or strengthening partition K, the same being provided for the same purpose as the column C, but being given a slightly different shape, occasioned by the circular shape of the receptacles, which are arranged symmetrically around the axis, which in this case is the column K. In the lower end of K, I provide the receptacle for the fuse L, and the flash openings or ducts M, which lead to their respective explosive receptacles H. Mounted similarly to the plug F, is a plug N, which is constructed and employed similarly to the plug F.

From the foregoing description, it is evident that I provide a shell or projectile of the explosive type, which is provided with strengthening means, so disposed and constructed as to prevent the shell or projectile from "mushrooming" while at the same time I provide thin walls surrounding the charge, so that the bursting effect of the shell or projectile is in no way impaired, while its penetration by reason of the central strengthening column is increased.

What I claim as new and desire to secure by Letters Patent, is:—

1. A shell or projectile, provided with a cavity therein for the bursting charge, the said cavity being in the form of a plurality of parallel recesses symmetrically disposed about the axis of the shell, and a fuse cavity at the base of the axis and in communication with a bursting cavity.

2. A shell or projectile provided with a cavity therein for the bursting charge and surrounding a central axis thereof, and a fuse cavity in the axis and in communication with the cavity.

3. A shell or projectile, provided with a bursting charge cavity and a central strengthening column extending the full length of said cavity said column being provided with a fuse cavity having communication with the bursting charge cavity.

4. A shell or projectile, provided with a bursting charge cavity, a central strengthening rib alining with the point of the projectile and extending the full length of the cavity, and a fuse cavity in said rib and in communication with the bursting charge cavity.

5. A shell or projectile, having an armor piercing point and a bursting charge cavity, a strengthening column centrally of the cavity and the full length thereof and of greater width than the exterior wall about the cavity, and a fuse cavity in said column and in communication with the cavity.

6. A shell or projectile, having a point and a bursting

charge cavity, a strengthening column thicker than the walls surrounding the cavity and centrally thereof, a fuse cavity in communication with the bursting charge cavity, and a base for the shell and both cavities.

- 5 7. A shell or projectile, having a bursting charge cavity, a central strengthening column having a fuse cavity and a lower threaded end, said fuse cavity being in communication with the bursting charge cavity, and a plug for the base of the shell engaging the threaded end of the column and the body of the shell.
- 10 8. A shell or projectile, having a series of bursting

charge cavities arranged symmetrically around its axis, the end of said axis being exteriorly threaded and carrying a fuse cavity, and a plug forming a base for the bursting charge and fuse cavities, and engaging the end of the axis and body of the shell. 15

In testimony whereof I affix my signature in presence of two witnesses.

JAMES LEMUEL BROWN.

Witnesses:

B. W. DOWNS,  
ANDREW T. MCNAMARA.