(No Model.)

J. RAPP.

FUSE FOR PROJECTILES.

No. 493,735. Patented Mar. 21, 1893.

Fig. 1.

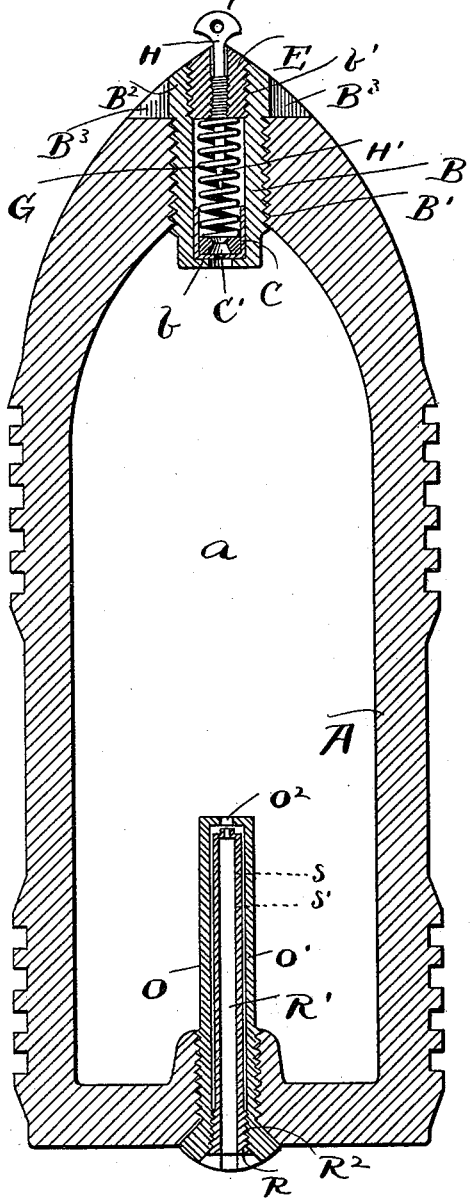


Fig. 2.

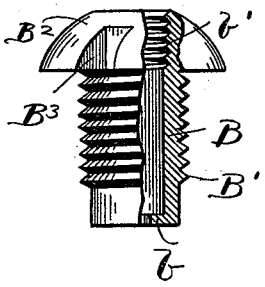


Fig. 5.

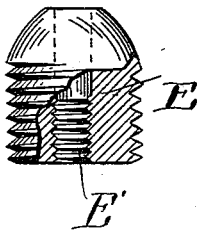


Fig. 4.

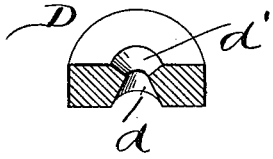


Fig. 3.

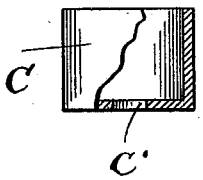
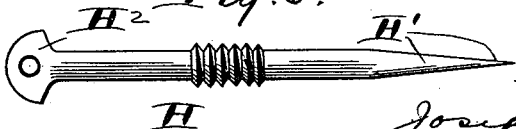


Fig. 6.



Witnesses.
E. B. Wilcox
C. F. Dorsey

Inventor.
Joseph Rapp
By Seggett & Seggett
his attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH RAPP, OF AKRON, OHIO.

FUSE FOR PROJECTILES.

SPECIFICATION forming part of Letters Patent No. 493,735, dated March 21, 1893.

Application filed July 16, 1892. Serial No. 440,204. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RAPP, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Fuses for Projectiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in fuses for projectiles; and it relates more especially to the construction of a percussion-fuse adapted to be inserted in the striking end of the projectile and communicate with the explosive-chamber next adjacent.

In the accompanying drawings, Figure 1 is a side elevation, partly in central section, of a projectile provided with my improved percussion-fuse and with the combination of fuses in the rear or butt-end of the same. Figs. 2, 3, 4, 5 and 6 exhibit component parts of the percussion-fuse separated; Figs. 2, 3, and 5 being elevations partly in section, Fig. 4 a perspective partly in section, and Fig. 6 an elevation.

Referring to the drawings, A represents the shell or casing of the projectile, and *a* the explosive chamber.

B represents the casing of my improved percussion-fuse, the same being screw-threaded externally, as at B′, said threaded portion being adapted to engage a correspondingly screw-threaded perforation in the forward or striking end of the casing of the projectile, as shown in Fig. 1. The outer end of the casing of the percussion-fuse is provided with a head, as at B^2, that is notched or recessed, as at B^3, for accommodating the application of a wrench in inserting the percussion-fuse into the projectile.

At the lower end casing B has an internal annular flange *b* that affords a seat for the receptacle C of a capsule, D, the bottom of receptacle C having a centrally-located perforation, C′, adapted to be in open relation with the explosive chamber of the projectile, perforation C′ being less in size than the adjacent end of the frusto-conical shaped chamber *d* in capsule D, which chamber is adapted to receive the fulminating or igniting material. The head of the casing of the percussion-fuse is screw-threaded internally, as at *b*′, for receiving the correspondingly externally screw-threaded bushing, E, and within casing B, between bushing E and capsule D is confined a coil-spring, G, that is adapted to act in the direction to hold the capsule to its seat. Bushing E is perforated longitudinally in line with the chamber in capsule D, with the perforation screw-threaded, as at E′, for receiving the correspondingly externally screw-threaded pin H, the latter extending inside of bushing E and tapering to a point, as at H′, in suitable proximity to capsule D; pin H, at its other or outer end, terminating in a head, H^2.

I will here remark that the screw-threaded members of the percussion-fuse are all threaded in the direction in which the cannon is rifled so that said members cannot possibly become loose but will rather be tightened during the travel of the projectile, and we will suppose in the present instance that said members of the percussion-fuse are threaded right-handed.

Upon the striking of the projectile, spring G, will, by its inertia, be compressed toward its outer or forward end, and the inertia of receptacle C and its capsule D will throw the same forward, the capsule striking the point of pin H, resulting in the ignition of the fulminating or igniting material in the capsule, and in turn igniting the explosive within the shell of the projectile, resulting in the bursting or explosion of the shell, the perforation in capsule D being preferably flaring, as at *d*′, to facilitate the proper engagement of the capsule with pin H.

What I claim is—

1. The combination with a hollow shell having an explosive chamber therein, of a percussive fuse for the forward or striking end of the projectile, the same comprising a casing which projects and opens in the explosive chamber, a pin located centrally within the casing, a capsule seated at the inner end of said casing and a spring adapted to act in the direction to retain said capsule against its seat, the arrangement of parts being such that upon the striking of the projectile the inertia of the spring will compress the same in the direction away from the capsule and the latter by its inertia will be thrown against the point of the pin so as to result in the ignition

of the explosive material within the capsule, substantially as set forth.

2. A percussion-fuse for the forward or striking-end of a projectile, the same comprising a casing provided at its inner end with an internal flange, a receptacle seated upon said flange, a capsule within said receptacle, a pin located centrally of the fuse and a spring adapted to act in the direction to retain the capsule within its receptacle, said capsule having an open-ended frusto-conical chamber adapted to receive the fulminating or igniting material, the bottom of the capsule-receptacle having a central perforation in open relation with, but less in size than, the adjacent end of the aforesaid chamber in the capsule, substantially as set forth.

3. A percussion-fuse for the forward or striking-end of a projectile, the same comprising the following elements:—a casing adapted to be rigidly secured within said end of the projectile, a capsule seated at the inner end and a bushing rigidly secured within the outer end of the fuse, a pin extending through said bushing into said fuse, said pin secured in the casing and a coil-spring located between the capsule and said bushing, the arrangement of parts being such that, upon the striking of the projectile, the inertia of the spring will compress the same against said bushing, and the capsule, by its inertia, will be thrown against the aforesaid pin, resulting in the ignition of the fulminating or explosive material within the capsule, substantially as set forth.

4. A percussion-fuse for the forward or striking-end of the projectile and comprising the following elements:—a casing having an externally screw-threaded portion adapted to engage a correspondingly screw-threaded perforation in said end of the projectile, a capsule seated at the inner end of the fuse, a bushing externally screw-threaded and engaging a correspondingly internally screw-threaded portion of the casing of said fuse, a pin extending through said bushing into the fuse and provided with an externally-screw-threaded portion engaging a correspondingly screw-threaded perforation in the bushing, and a coil-spring located between the capsule and said bushing, the arrangement of parts being such that, upon the striking of the projectile, the inertia of the spring will compress the same against said bushing, and the capsule, by its inertia, will be thrown against the aforesaid pin, resulting in the ignition of the fulminating or explosive material within the capsule, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 9th day of July, 1892.

JOSEPH RAPP.

Witnesses:
C. H. DORER,
WARD HOOVER.