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Patented Apr. 22, 1902.

C. M. BRODERICK.
BASE FUSE FOR EXPLOSIVE PROJECTILES.

(Application filed June 19, 1901.)

(No Model.)

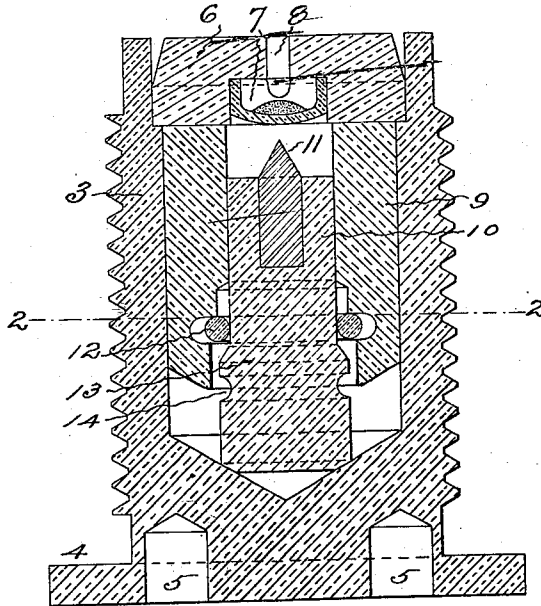


Fig 1

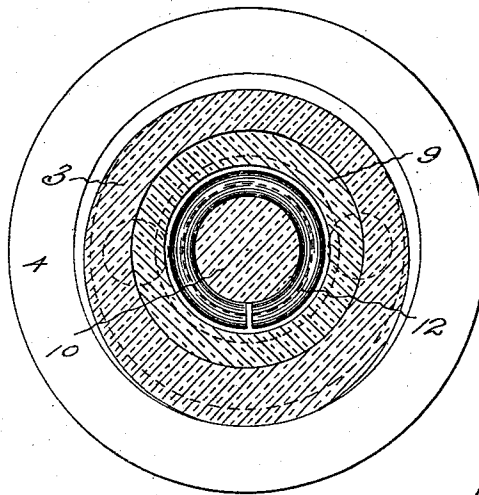


Fig 2

Witnesses:

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UNITED STATES PATENT OFFICE.

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BASE-FUSE FOR EXPLOSIVE PROJECTILES.

SPECIFICATION forming part of Letters Patent No. 697,974, dated April 22, 1902.

Application filed June 19, 1901. Serial No. 65,131. (No model.)

To all whom it may concern:

Be it known that I, CLEMENT M. BRODERICK, a citizen of the United States, residing at Windsor, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Base-Fuses for Explosive Projectiles, of which the following is a specification.

This invention relates to those base-fuses for shells which have a plunger that is normally held back by a fastening and is thrown forward by its momentum with sufficient power to break the hold of the fastening and strike the primer with enough force to explode it at the impact of the shell.

The object of the invention is to provide a simple and strong base-fuse of this nature which may be easily constructed and which will be sure in action, and yet safe from accidental discharge.

The embodiment of the invention that is illustrated by the accompanying drawings has a hollow body with an end closed by a primer-cap, and in the body is a movable sleeve, a plunger bearing a firing-pin within the sleeve, and a split ring arranged to fasten the sleeve and the plunger together when the shell is projected from the gun.

Figure 1 of the views shows a longitudinal diametrical section of the base-fuse, and Fig. 2 shows a transverse section on the plane indicated by the broken line 2 2 of Fig. 1.

The cylindrical body 3 has an exterior thread for nearly its entire length. The rear end of the body is solid and has a flange 4 and wrench-sockets 5, whereby the fuse may be screwed into the base of a shell. In the open end of the body is a cap 6. The cap rests upon a shoulder formed in the body and is beveled on its outer edge, so that the end of the body may be crimped over for holding the cap in place. The primer 7 is located in a cavity in the cap at the rear end of the flash-perforation 8. A sleeve 9 loosely fits within the cylindrical bore of the body and is movable between the solid head and the cap. Loosely fitting the opening in the sleeve is a plunger 10. At the forward end of the plunger is a firing-pin 11. The rear portion of the opening through the sleeve is somewhat larger than the diameter of the part of the plunger that fits in the sleeve. In the enlarged portion of

the opening through the sleeve is a split ring 12. This ring closely encircles the plunger just in front of the enlarged part 13, in which is the annular groove 14. The front wall of the shoulder in front of the annular groove is inclined so that when the sleeve is drawn backwardly with sufficient force the plunger will open the ring and allow the ring and sleeve to move backwardly until the ring springs into the annular groove and locks together the sleeve and the plunger. The sleeve is held forward and the plunger is held back by the ordinary tension of the ring. If the shell is dropped upon its point, either accidentally or when being tested, the tension of the ring is sufficient to prevent the comparatively light plunger from being thrown forwardly and striking the primer. When the shell is fired, the inertia of the sleeve as the shell is projected causes the sleeve to force back the ring and to occupy the rear end of the chamber in the body. In this position the ring holds the sleeve and plunger together, so that when the shell strikes the plunger under its own momentum and reinforced by the momentum of the sleeve is thrown forward, so that the firing-pin will strike and explode the primer, and thus cause the shell to burst.

This base-fuse is simple to construct, it is sure in action, for the cap containing the primer cannot loosen from the end of the body, and the combined weights of the plunger and sleeve will cause the explosion of the primer, and it is very safe, for the plunger cannot engage the primer until the sleeve has been forcibly thrown backward, and this can only be accomplished by the violent projection forward of the shell.

I claim as my invention—

1. A base-fuse for a projectile consisting of a hollow body closed at one end by a primer-cap and containing a movable sleeve with an interior groove, a movable plunger with an exterior groove, and a yielding ring arranged to normally prevent the relative longitudinal movement of the plunger and sleeve and to be forced into the two grooves so as to lock the sleeve and plunger together by the backward movement of the sleeve, substantially as specified.

2. A base-fuse for projectiles consisting of a hollow body closed at one end by a primer-

cap and containing a movable sleeve, a movable plunger having sections of two different diameters with an exterior groove in the section having the larger diameter, and a yielding ring loosely located in a recess in the sleeve about the reduced part of the plunger so as to prevent the forward movement of the plunger until the sleeve is forced backwardly and forces the ring into the groove in the plunger and locks the plunger and sleeve together, substantially as specified.

3. A base-fuse for projectiles consisting of a hollow body having a threaded exterior, a flanged head and a primer-cap closing one end, and containing a movable sleeve, a plunger with an exterior groove and a firing-pin, movable in the sleeve, and a yielding ring loosely located in a recess in the sleeve about a reduced part of the plunger so as to prevent the forward movement of the plunger until the sleeve is forced backwardly and forces the ring into the groove in the plunger

and locks the plunger and the sleeve together, substantially as specified.

4. A base-fuse for projectiles consisting of a hollow body having a threaded exterior, a flanged head, a primer-cap which occupies one end and is held in place by crimping the end of the body over the edge of the cap, said body containing a movable sleeve, a plunger with a firing-pin movable in the sleeve, an annular groove in the plunger, and a yielding ring loosely located in a recess in the sleeve about a reduced part of the plunger and adapted to be forced into the groove in the plunger and expanded into the recess in the sleeve by the backward movement of the sleeve so as to lock the sleeve and plunger together, substantially as specified.

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Witnesses:

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