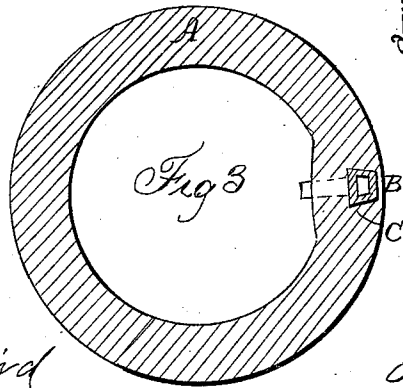
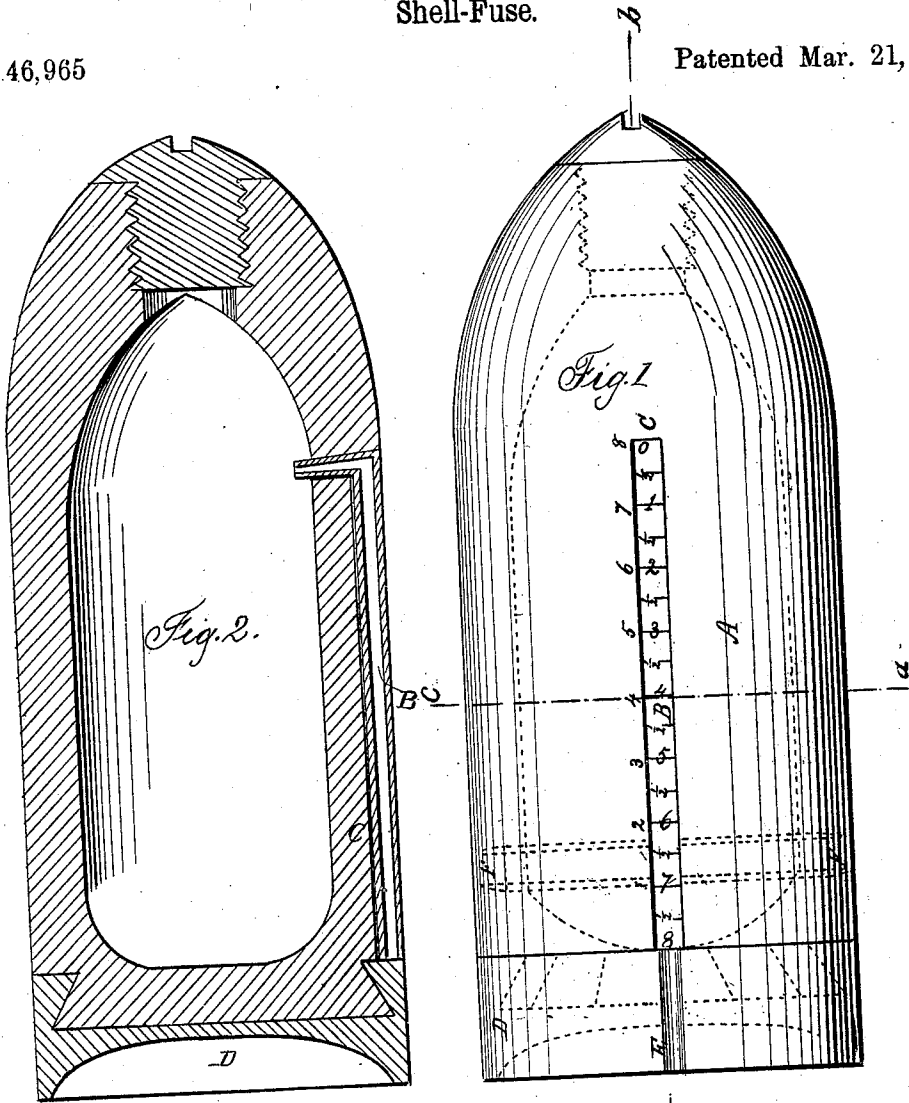


G. WRIGHT.

Shell-Fuse.

Patented Mar. 21, 1865.

No 46,965



Witnesses
Fluoyte
John H. Bird

Inventor
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UNITED STATES PATENT OFFICE.

GEORGE WRIGHT, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN TIME-FUSES FOR EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. 46,965, dated March 21, 1865.

To all whom it may concern:

Be it known that I, GEORGE WRIGHT, of the city and county of Washington, in the District of Columbia, have invented a new and useful Improvement in Time-Fuses for Shells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing a more simple and economical time-fuse, and so locating it as to render its ignition more certain.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In using rifled ordnance and projectiles with metallic sabots or windage-cups, or similar devices to center the projectile, give it rotary motion, and increase the effects of the charge by cutting off the windage, great difficulty is experienced in lighting the time-fuse at the front of the projectile. To render its ignition more certain, grooved channels have been made longitudinally in the projectile on its outer surface, for the flame more certainly to pass along forward. Such channels have even been bored longitudinally through the walls of the shell from rear to front, and a priming inserted to light the fuse in front. These devices are more or less objectionable, expensive, &c. To obviate them and to make a more economical fuse, at same time render its ignition more certain, I locate it in cylindrical projectiles on the cylindrical part of a longitudinal groove, extending from the rear of the projectile (or front of the metallic sabot) as far forward as necessary, and opening into the projectile at its front extremity, being graduated into seconds, as usual.

In the drawings, Figure 1 shows an elevation of a projectile, with the straight or longitudinal fuse in place. Fig. 2 is a section on line *a b*, and Fig. 3 is a transverse section on line *c d*.

In these several figures, A represents the shell or projectile; B, the time-fuse; C, its

channel or groove; D, the sabot; E, a flame-channel on sabot; F, a circumferential groove.

In making shells to adapt these fuses to the symmetry of the mass can easily be preserved, or grooves can readily be milled into those already cast. Little or no difficulty will be experienced in casting them in, and, being slightly undercut, the fuse is pressed in a little below the surface, and in so doing the scale of seconds or graduation made at the same time or by the same operation. In rear of the fuse a small flame-channel may be left extending along the sabot; but this is not considered necessary. One or more of these fuses may be inserted, as desired, in the wall of the shell, thus increasing the chances of explosion. They can easily be made by upsetting sheet-lead or by casting in two pieces a trough-piece and a lid to fit in the same; or it may be made like lead piping, square or round, and filled accordingly. It must be seen, therefore, that the fuse can easily be made and inserted, must be economical and certain, requiring no removal, in this respect not unlike my ring-fuse surrounding the loading-hole, patented December 6, 1864.

If it be considered preferable, the fuse just described may be inserted in an annular groove near the base of the shell, (see F, Fig. 1,) when it would differ but little from that secured by the patent above referred to.

My longitudinal fuse can be applied to spherical shells, and can be inserted in grooves located in planes passing through their axes, but in front of the sabot. The location of my fuse permits the loading-hole to be used for a concussion-fuse.

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

The longitudinal time-fuse B, constructed and located substantially as described, for the purpose set forth.

GEORGE WRIGHT.

Witnesses:

T. WHYTE,
GEO. H. BIRD.