M. McDEVITT.

Shell-Fuse.

No 43,922 Patented Aug. 23, 1864.

Fig. 1

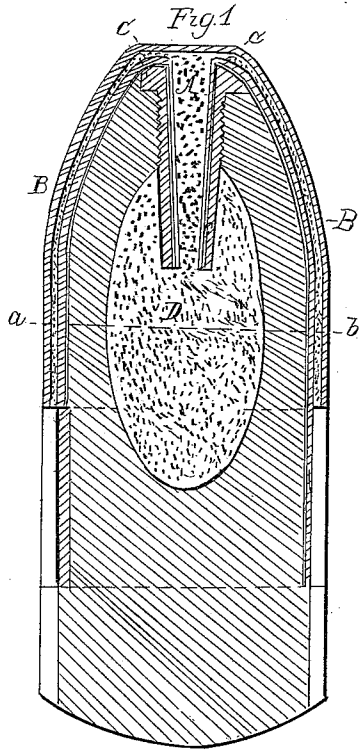


Fig. 2.

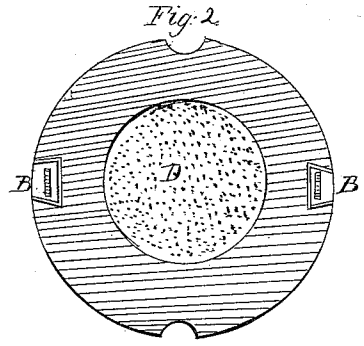


Fig 3

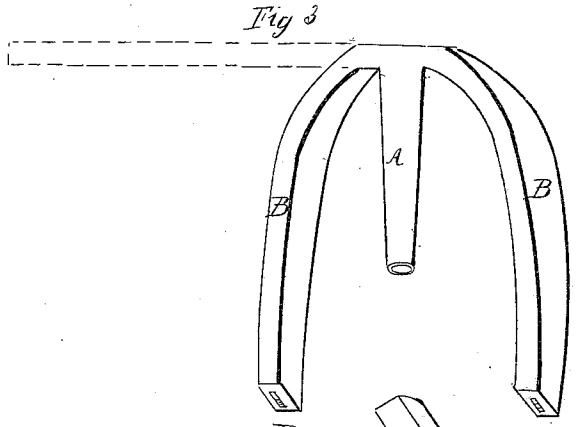


Fig. 4.

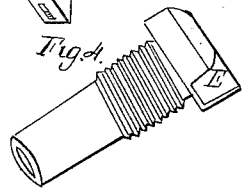
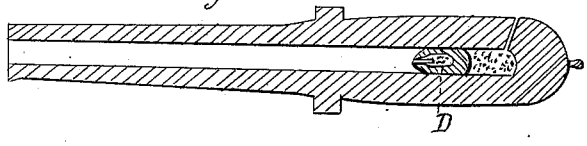


Fig. 5.



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UNITED STATES PATENT OFFICE.

MARTIN McDEVITT, OF BELOIT, WISCONSIN.

IMPROVEMENT IN TIME-FUSES FOR EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. **43,922**, dated August 23, 1864.

To all whom it may concern:

Be it known that I, MARTIN MCDEVITT, of Beloit, in the county of Rock, in the State of Wisconsin, have invented a new and useful Improvement in Fuse-Tubes; and I do hereby declare 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 constructing a fuse for explosive projectiles thrown by fire-arms, and attaching it to the same in such a manner as to render it certain of being ignited by the discharge of the projectile from the gun, and not liable to become extinguished after being ignited, thus making certain the explosion of the projectile.

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

A tube of any suitable metal is made, to insert through an orifice in the fuse-plug, and of sufficient length to extend from the surface of the projectile and communicate with the explosive charge within. Another tube of suitable metal, sufficient length, and of suitable form is made and attached, near its center, to the outer end of the tube communicating with the charge, forming two arms, and the apertures in the tubes are made to communicate. The arms, instead of being made in the form of a tube, may be made of a piece of metal corresponding with the length and shape of the tube, with a groove of sufficient depth in the side thereof, which will answer the same purpose as a tube.

The fuse may be constructed with as many arms as desired, making each one to communicate with the tube in the fuse-plug; or it may be made with only one arm, if desired. A groove is cut through the outer end of the fuse-plug, which extends down each side of the projectile, and is of sufficient depth to accommodate the arms of the fuse, which, when placed therein, will present an even surface with the surface of the projectile. The grooves are made wider at the bottom than at the surface of the projectile, the better to retain the arms of the fuse in place.

If found necessary in projectiles for rifled cannon, the grooves in which the arms of the fuse are placed may extend the entire length of the projectile, and where the arms do not extend that distance the grooves may be beveled from the surface of the projectile at the ends of the arms, increasing in depth to the end thereof, which will prevent the fuse from being forced out of place by the explosion of the propelling-charge within the gun.

The arms and tube of the fuse being filled with the composition, it is applied to the projectile by bending the arms so as to conform to the shape thereof, and inserting them into the grooves, when the fuse can be forced into its proper place, the tube entering the fuse-plug and communicating with the explosive charge within.

The tube and arms may be cast in the proper form to be applied to the projectile and filled with the composition in any convenient manner.

The grooves in the projectile being wider at the bottom than at the surface, the arms of the fuse cannot be thrown out of their place by the rotary motion of the projectile after being discharged from the gun, or by striking any dense substance.

The scale of time is marked on the arms of the fuse on the side exposed when attached to the projectile, and as the arms may be made to extend the entire length of the projectile the fuse will admit of a scale of any required length of time; or a quick and slow fuse may be made, one on each arm, by using different compositions.

Figure I is a view of a longitudinal section of the shell or projectile with the fuse applied, A being the tube filled with composition, extending through the fuse, plug C C, and communicating with the explosive charge D. B B are the arms of the fuse, filled with composition, and communicating with the tube A.

Fig. II is a view of a section through or across the projectile on the line *a b* of Fig. I, showing the grooves in which the arms B B are placed to be wider at the bottom than at the surface of the projectile.

Fig. III is an elevation of the fuse-tube, representing it as ready to be applied to the projectile, the dotted lines representing an arm before being bent.

Fig. IV is the screw-plug, or screw of the fuse-tube, E being the groove through the outer end, allowing the fuse to be sunk even with the surface of the projectile.

Fig. V is a longitudinal section of a gun charged with a projectile and ready for firing.

The superiority of my fuse over others con-

sists, first, in the certainty of exploding the charge in the projectile, the fuse admitting of being cut at two or more points on the same scale of time, according to the number of arms with which it is constructed, thus rendering the explosion much more certain than where the ordinary fuse is used, which admits of being cut at only point on the scale; second, it is more easily cut than ordinary fuses, on account of the simplicity of the scale; third, after the composition in the fuse becomes ignited it is not liable to be extinguished, even if the projectile strikes in the water or ground and ricochets.

My fuse may be applied to any kind of projectiles—as well to those thrown by mortars as by rifled cannon.

I am aware that fuses have been ignited at the front by means of longitudinal channels in the gun or projectile. This I disclaim; but

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

The T-shaped fuse A B, the central stem being introduced into the axis of the projectile at the front, while the arms are bent to correspond to the shape of the projectile, held in longitudinal channels in the same, and filled with composition, and graduated so as to be cut to suit the time of flight, substantially as and for the purpose set forth.

MARTIN McDEVITT.

Witnesses:

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CHARLES HERRON.