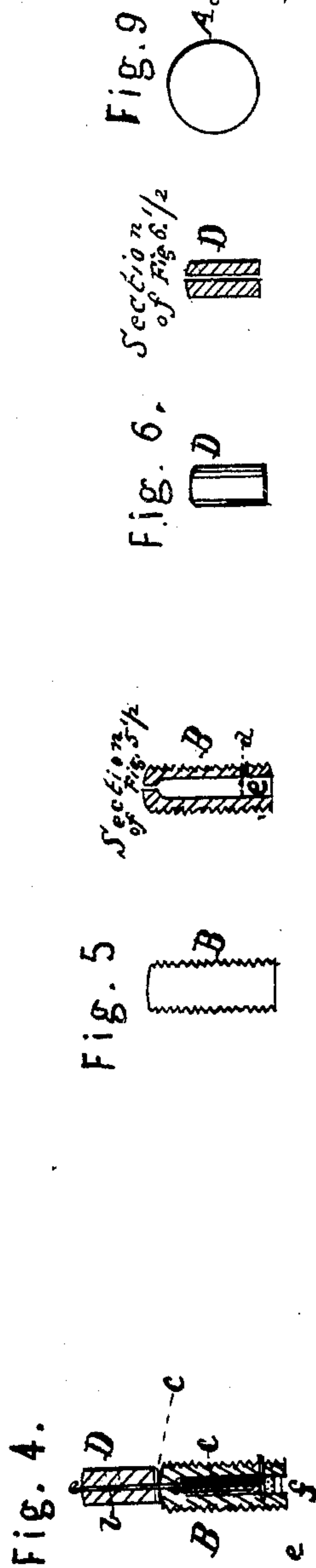
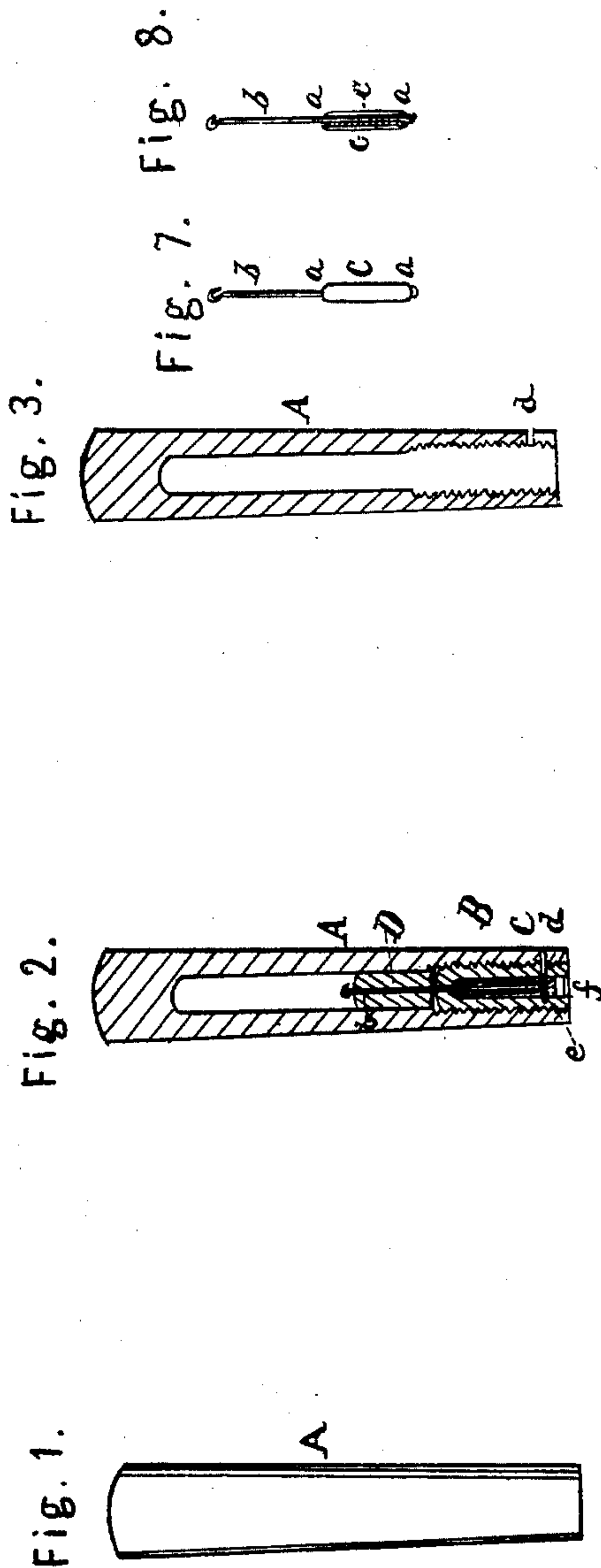


A. J. SIMPSON & J. J. JANEZECK.
CONCUSSION FOR EXPLOSIVE SHELLS.

No. 66,644.

Patented July 9, 1867.



Witnesses:
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United States Patent Office.

ANDREW J. SIMPSON, OF PHILADELPHIA, PENNSYLVANIA, AND JOHN J. JANEZECK, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 66,644, dated July 9, 1867.

IMPROVEMENT IN CONCUSSION-FUSE FOR EXPLOSIVE SHELLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, ANDREW J. SIMPSON, of the city and county of Philadelphia, and State of Pennsylvania, and JOHN J. JANEZECK, of the city and county of Washington, District of Columbia, have invented a new and useful Improvement in Concussion-Fuses; and we do hereby declare the following to be a full, clear, and exact description of the nature thereof, which will enable others skilled in the art to which it appertains to fully understand and construct the same, reference being made to the following drawings, making part of this specification, in which—

Figure 1 represents a side view of the fuse, illustrating our invention.

Figure 2 is a transverse vertical section of the same, taken through the middle of its length.

Figure 3 is a transverse vertical section of the fuse case, taken through the middle of its length.

Figure 4 is transverse vertical section of the plunger, washer, fulminate-chamber, fulminate, fulminate-tube, and friction-wire.

Figure 5 is a side view of the fulminate-chamber.

Figure 5½ is a transverse vertical section thereof.

Figure 6 is a side view of the plunger.

Figure 6½ is a transverse vertical section thereof.

Figure 7 is a side view of the fulminate, fulminate-tube, and friction-wire.

Figure 8 is a transverse vertical section thereof.

Figure 9 is a longitudinal section of the case in the line *x x*, fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and useful improvement in fuses, of that class which is attached to projectiles which are exploded by the fulminate being ignited when the projectile reaches its destination. It consists in providing a tapering or cylindrical case, with a plunger, to which is attached a wire, one end encased within the fulminate, contained in a chamber, which is firmly secured to the inner or lower end of the fuse-case, so that when the projectile is discharged and strikes any object, the plunger, by its inertia, will slide or rush forward in the fuse-case, carrying the wire with it, thus igniting the fulminate, exploding a small quantity of powder in the case, blowing out the bottom rivet, communicating with the powder in the projectile, and exploding the same, as will be hereinafter more fully described.

In the drawings A represents the encasing-tube or fuse-case, of a tapering or cylindrical form, and hollow from its lower or inner end to a point about one-sixth from its other end. The inner periphery is likewise tapering, and has, for a distance of about one-third of its length, a screw-thread cut thereon, in which fit the screw-threads of the fulminate-chamber B. This chamber is hollow, receiving a tube, C, into which the fulminate is introduced, and has an opening, *a*, on its upper and lower end, through which passes the friction-wire *b*, after being encased within the fulminate. The friction-wire is hooked at both ends. The lower end or hook catches under the tube C, and prevents the accidental withdrawal of the wire at the other end. The upper hooked end is somewhat above the tube, and catches above the plunger B, which fits snugly in the hollow of the fuse-case A. The plunger is provided with a central perforation, through which passes the friction-wire, thus holding the plunger on the fulminate-chamber. We interpose a flexible washer, *c*, between them, for preventing any untimely ignition of the fulminate by concussion or jarring. A pin, *d*, passes through the case A and the fulminate-chamber B, and supports the fulminate-tube C immediately against the hooked end of the friction-wire. The space *e*, below this, is filled with powder, which rests on a rivet or head *f*, which is flush with the bottom of the fuse-case A, as readily seen in fig. 2, and prevents the said powder from dropping out. The pin *d*, while supporting the fulminate-tube, will prevent its flying back during flight. It will be seen that, by the plunger fitting snugly in the hollow of the case, there will be no ignition of the fulminate by lateral motion of the plunger, and any accidental jars or shocks will be checked or broken by the washer. The conical form of the case A renders unnecessary any device for holding it in the charging-aperture of the projectile. It can be readily packed, and no parts of the fulminate are exposed, and the fuse is not liable to accidental explosion.

The operation is as follows: The case is inserted to its fullest extent in the charging-aperture of the

projectile. When the latter is discharged and reaches its destination, it is stopped by impingement against the object which it strikes. The plunger, by its inertia, will move forward in the fuse-chamber, drawing the friction-wire with it; and as part of the wire is embedded in the fulminate, the latter will be ignited and explode the powder in the case, blow out the rivet at the bottom of the case, and communicate with the charge in the projectile and explode it, as is readily perceived. The simplicity and practicability of the device are plainly evident. The cylindrical case is closed on all sides, and thus none of the internal parts are exposed, and its outer face is unbroken and can readily be inserted in the charging-aperture of the projectile. It requires no devices or means for retaining it in place.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In combination with the tapering closed case A we claim the plunger D fitting snugly therein, the fulminate-chamber B, fulminate-tube C, friction-wire *b*, washer *c*, pin *d*, and powder-chamber *e*, all arranged therein, and constructed as herein described for the purpose specified.

To the above we have signed our names, this 14th day of March, 1867.

ANDREW J. SIMPSON,
JOHN JACOB JANEZECK.

Witnesses:

JOHN A. WIEDERSHEIM,
CHARLES D. DAVIS.