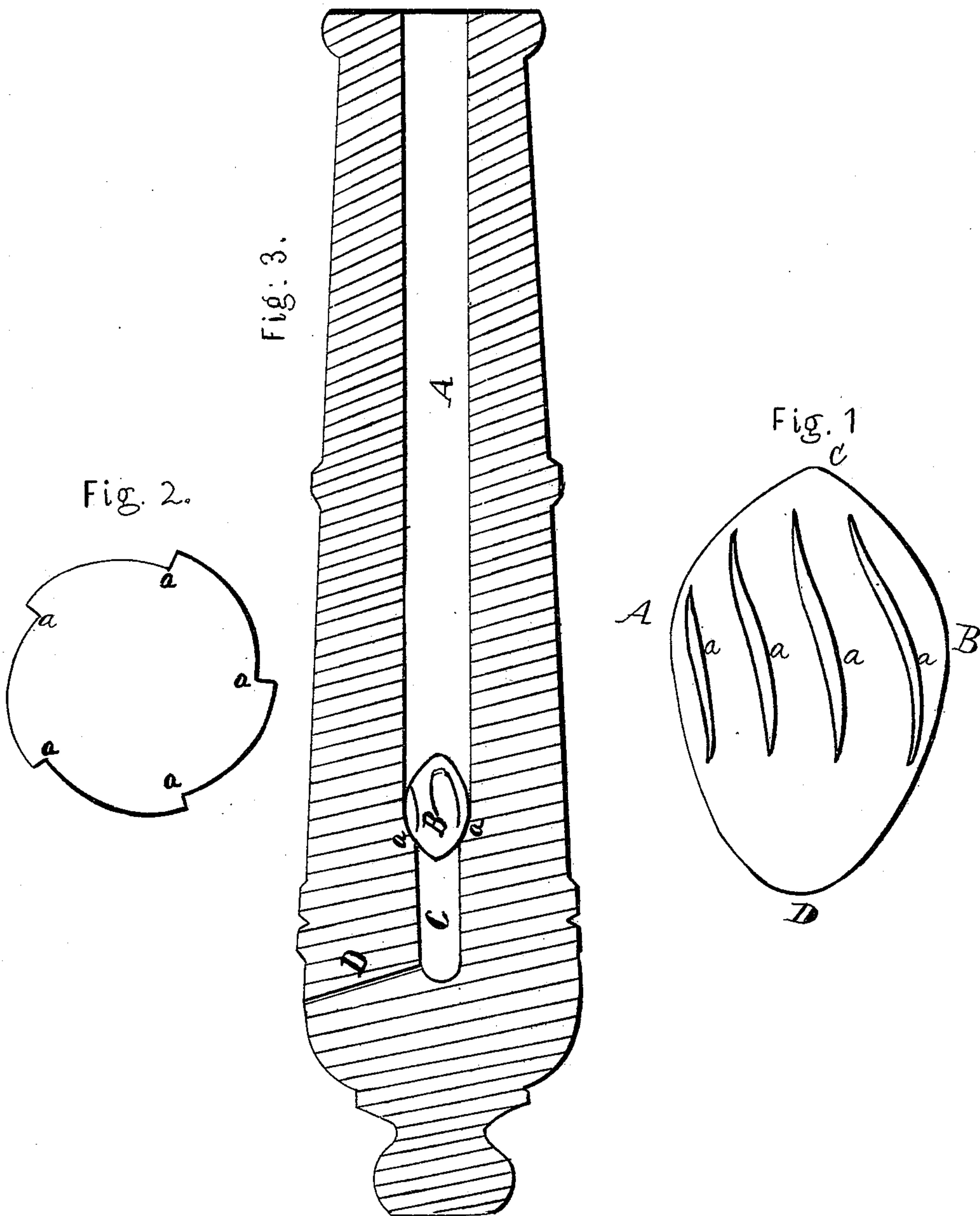


J. L. McCONNEL.  
Projectile.

No. 17,886.

Patented July 28, 1857.



# UNITED STATES PATENT OFFICE.

JOHN L. McCONNEL, OF JACKSONVILLE, ILLINOIS.

## IMPROVEMENT IN PROJECTILES FOR SMOOTH-BORED GUNS.

Specification forming part of Letters Patent No. 17,886, dated July 28, 1857.

*To all whom it may concern:*

Be it known that I, JOHN L. McCONNEL, of Jacksonville, in the county of Morgan and State of Illinois, have invented a new and improved mode of giving to military projectiles, shot and shell, directness and certainty of flight and increased destructiveness; 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—

Figure 1 being a perspective view of the ball or shell, Fig. 2 being a transverse section of the same, and Fig. 3 being a longitudinal section of a gun, showing the shape of chamber adapted to the projectile.

The nature of my invention consists in casting all projectiles egg-shaped, (according to proportions hereinafter laid down,) with spiral grooves or shoulders running from a point near the head of the projectile toward its point, so as to cross its axis (or long diameter) at its greatest transverse (or short) diameter, and being in depth at that point about one-twentieth of the short diameter, and diminishing toward each end in proportion to the curve of the surface, and thus running out. Adapted to the shape is the chamber, as seen in Fig. 3. (The figure, as shown, is a cannon; but my invention is designed for all smooth-bored guns.)

In Fig. 1 (the perspective view of the projectile) the proportion of the two diameters A

B and C D is ten to fifteen, nine of the long diameter lying in the rear of their point of intersection and six forward of it. The spiral grooves or shoulders are indicated by the letters *a a a*.

In Fig. 2 (a transverse section of the same) *a a a a a* indicate the grooves or shoulders, and show the segments of circles which the depressions are each designed to be.

In Fig. 3 (the gun) A indicates the bore; *a*, the curves by which it runs into the cartridge-chamber; C, the chamber itself; B, the projectile, represented in the position it is designed to give it—viz., the large end toward the muzzle of the gun. D is the vent.

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

The improvement of the projectiles known as the "egg-shaped," which consists in so grooving the surface, as described, that when discharged from any smooth-bored gun, with the larger end foremost, the combined effects of the center of gravity being in front and the grooves (acted upon by atmospheric pressure) shall give to the projectile an accuracy of flight, when so fired, similar to that produced by the rifle and approximating thereto.

J. L. McCONNEL.

Witnesses:

B. D. DAWSON,  
J. C. SKEEN.