

J. B. READ.

Projectile.

No. 18,707.

Patented Nov. 24, 1857.

Fig. 1

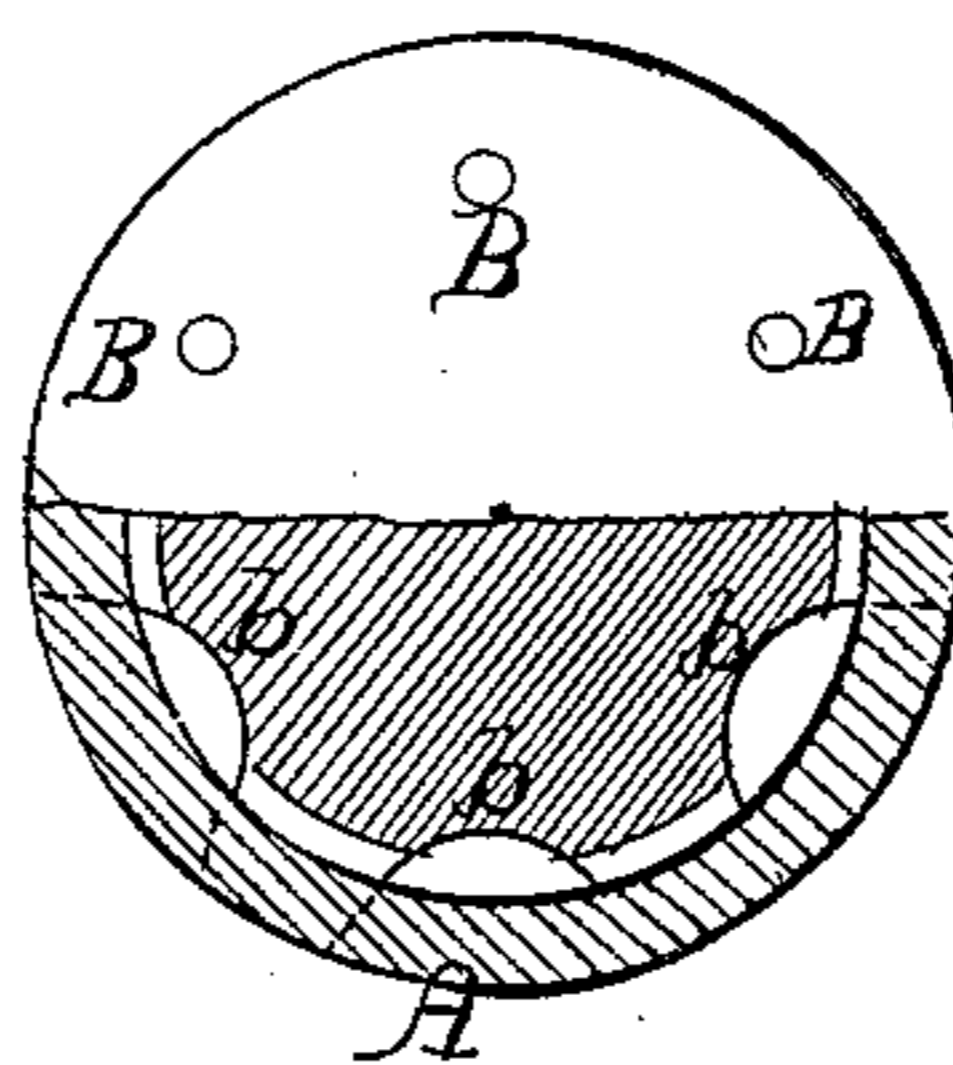
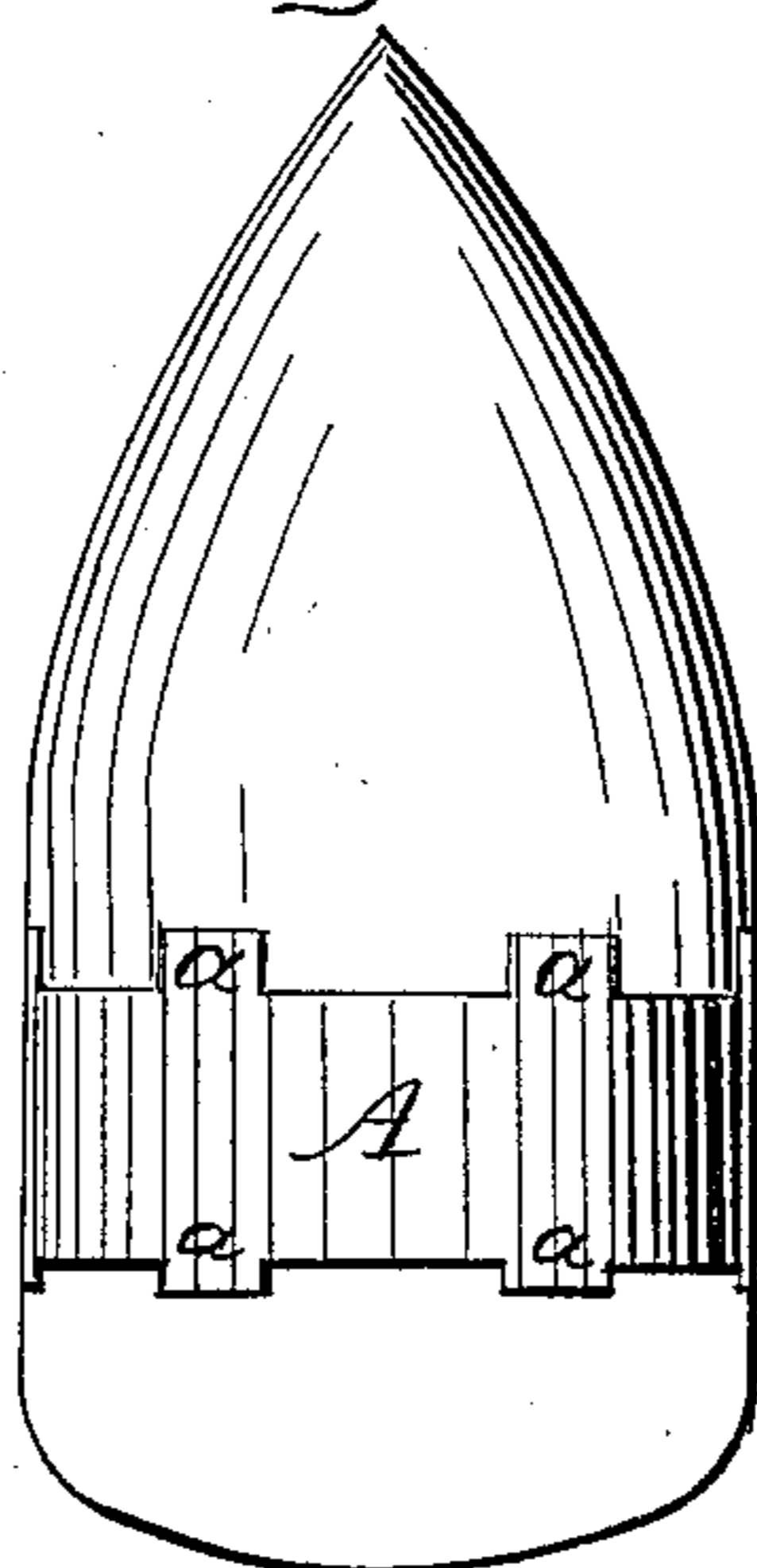


Fig. 3

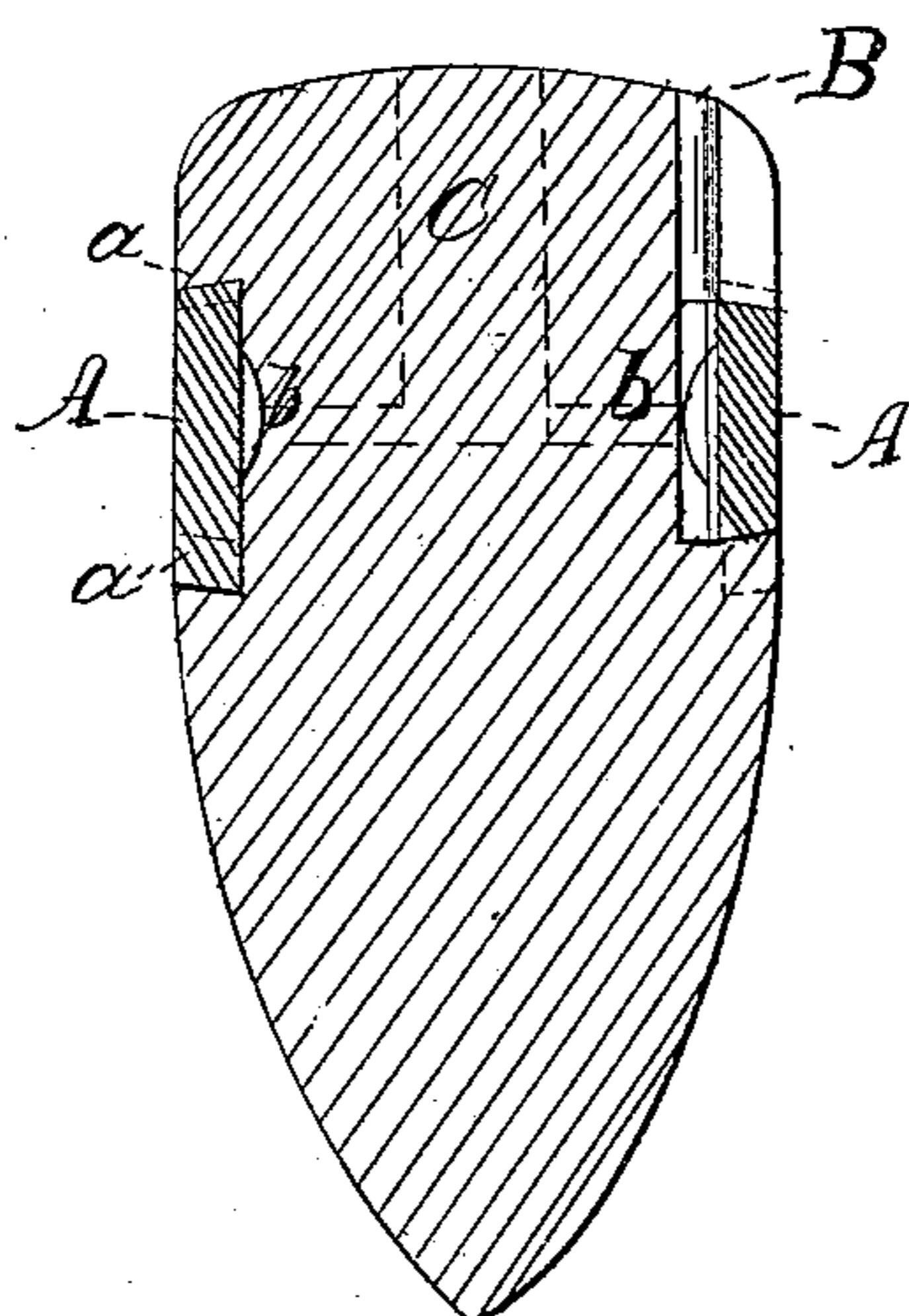


Fig. 2

UNITED STATES PATENT OFFICE.

JOHN B. READ, OF TUSCALOOSA, ALABAMA.

IMPROVED PROJECTILE FOR FIRE-ARMS.

Specification forming part of Letters Patent No. 18,707, dated November 24, 1857.

To all whom it may concern:

Be it known that I, JOHN B. READ, of the town and county of Tuscaloosa, and State of Alabama, have invented a new and Improved Mode of Constructing Projectiles for Fire-Arms, especially for rifled cannon; 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 cylindro-conoidal projectiles for rifled cannon, with a recess surrounding the cylindrical portion at right angles for the purpose of being filled with lead or any other fusible metal or alloy, the ring or belt thus formed to be expanded by the gases of fired gunpowder, operating upon its interior surface, through one or more vents extending from the rear of the projectile, so as to save windage and take into rifle-grooves, lugs or projections from the edges of the belt being so arranged as to prevent any displacement during rotation, the object of the whole being to secure the accuracy and increased range attainable by elongated projectiles from rifled guns.

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

Figure 1 is an exterior view of my improvement attached to a cylindro-conoidal projectile of the usual form. A is the band or ring of lead or other fusible metal or alloy filling a recess at right angles to the axis of the projectile for the purpose of saving windage and taking into rifle-grooves. *a a a a* are lugs or projections to prevent any displacement of the band.

Fig. 2 is a section of the same projectile, showing the form of the recess provided for the band A, said recess being made to widen toward its interior so as to hold the band more firmly. B is one of several vents running from the rear of the projectile and terminating on the inner side of the band A, provision being made, by spaces *b b b* extending around the projectile, for bringing the action of the

expanding force to bear upon all parts of the band at the same instant.

Fig. 3 is a rear view of the same projectile, B B B indicating vents upon one half of its exterior, the lower half being cut away down to the band A, so as to show at *b b b* the inner terminations of the vents B B B and their mode of connection one with another on the inner side of the ring A.

Instead of six vents, as represented, projectiles might be made with one large central opening in the rear of the projectile with internal orifices radiating to the inner side of the band A, as shown by the dotted lines C in Fig. 2; or, instead of a fusible metal ring or band, a wrought-iron cylinder with one or both of its edges inverted and embedded in the metal of the projectile in founding might be substituted; but this arrangement is believed to be fully covered by a patent obtained by me for a projectile for ordnance, on October 28, 1856.

A projectile being provided of the general form represented, with the recess as described, the lead or other suitable metal or alloy is melted and poured into it, so as to fill it even with the circumference of the cylindrical portion, said cylindrical portion being meanwhile inserted into a mold for giving proper shape to the band externally, while the vents B B B, and the connecting apertures *b b b* are kept open by being properly cored.

Before pouring the lead or other metal into the recess it might be advantageous to wind around the recessed portion several turns of small wire.

The mode in which my invention operates is by receiving on firing the charge of the gun loaded with the projectile in the usual way, the gases of the gunpowder on the inner side of the ring A by one or more vents, C, or B B B, so as to expand said ring, thus saving windage and securing the rotation of the projectile, besides the advantage, when applied to a shell, of using a percussion-fuse, which may be readily arranged at the apex, so as to explode on impact.

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

The surrounding of the cylindrical portion of elongated projectiles with a band of lead or other fusible metal or alloy, filling a recess with projections or lugs in the same to prevent its displacement, and provided with one or more vents extending from the rear of the projectiles to the inner side of said band for the purpose of expanding it by the gases of

fired gunpowder, so as to save windage and secure rotation by taking into rifle-grooves, as more fully set forth in the within specification.

JOHN B. READ.

Witnesses:

H. GOODSSELL,
JAMES COLWELL.