

A. F. POTTER.

Projectile.

No. 95,137.

Patented Sept. 21, 1869.

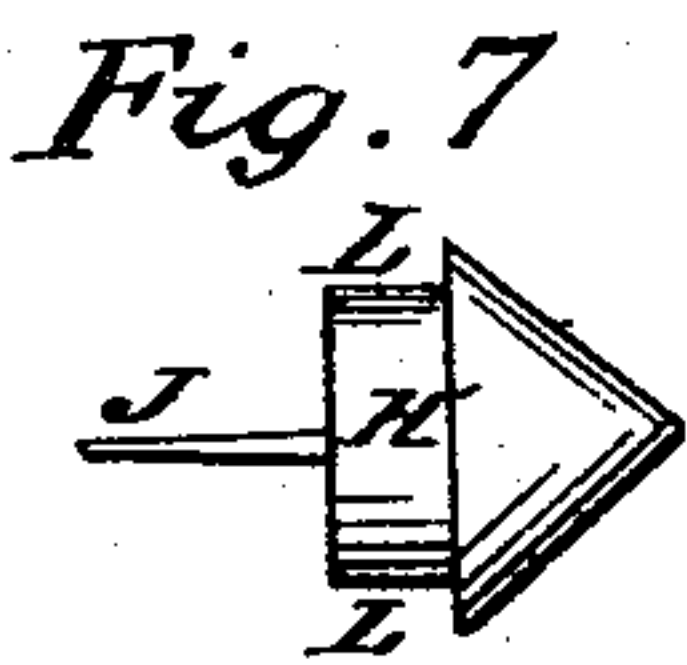
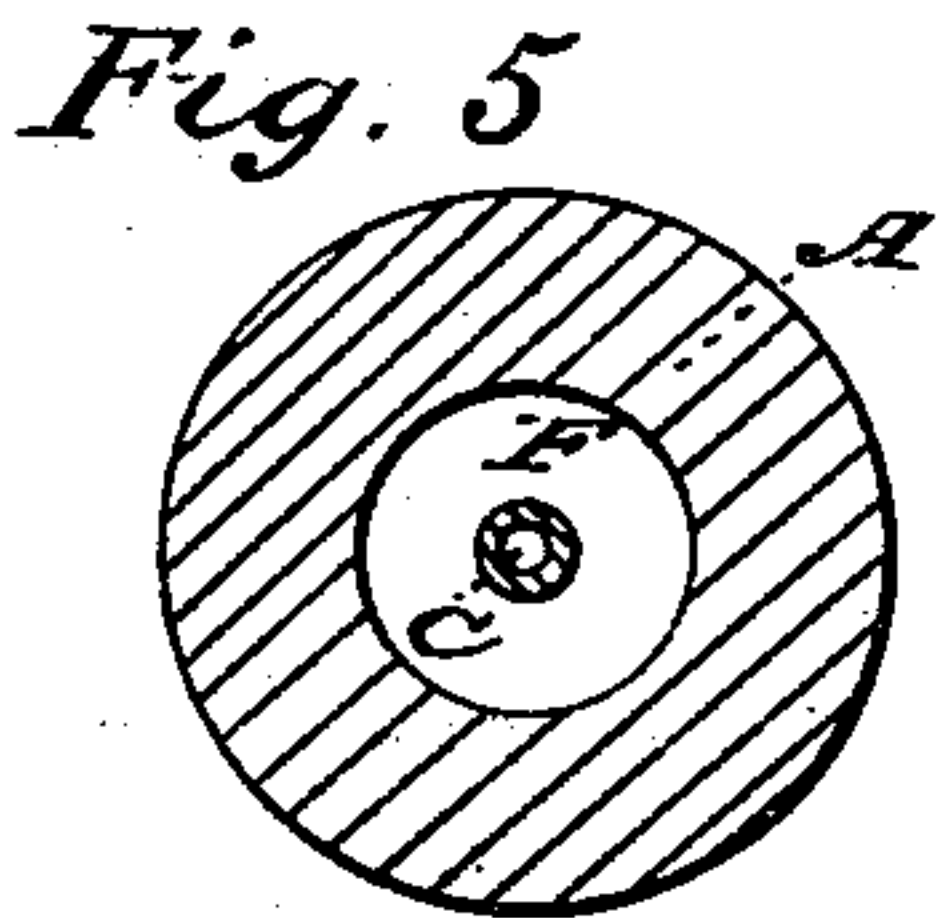
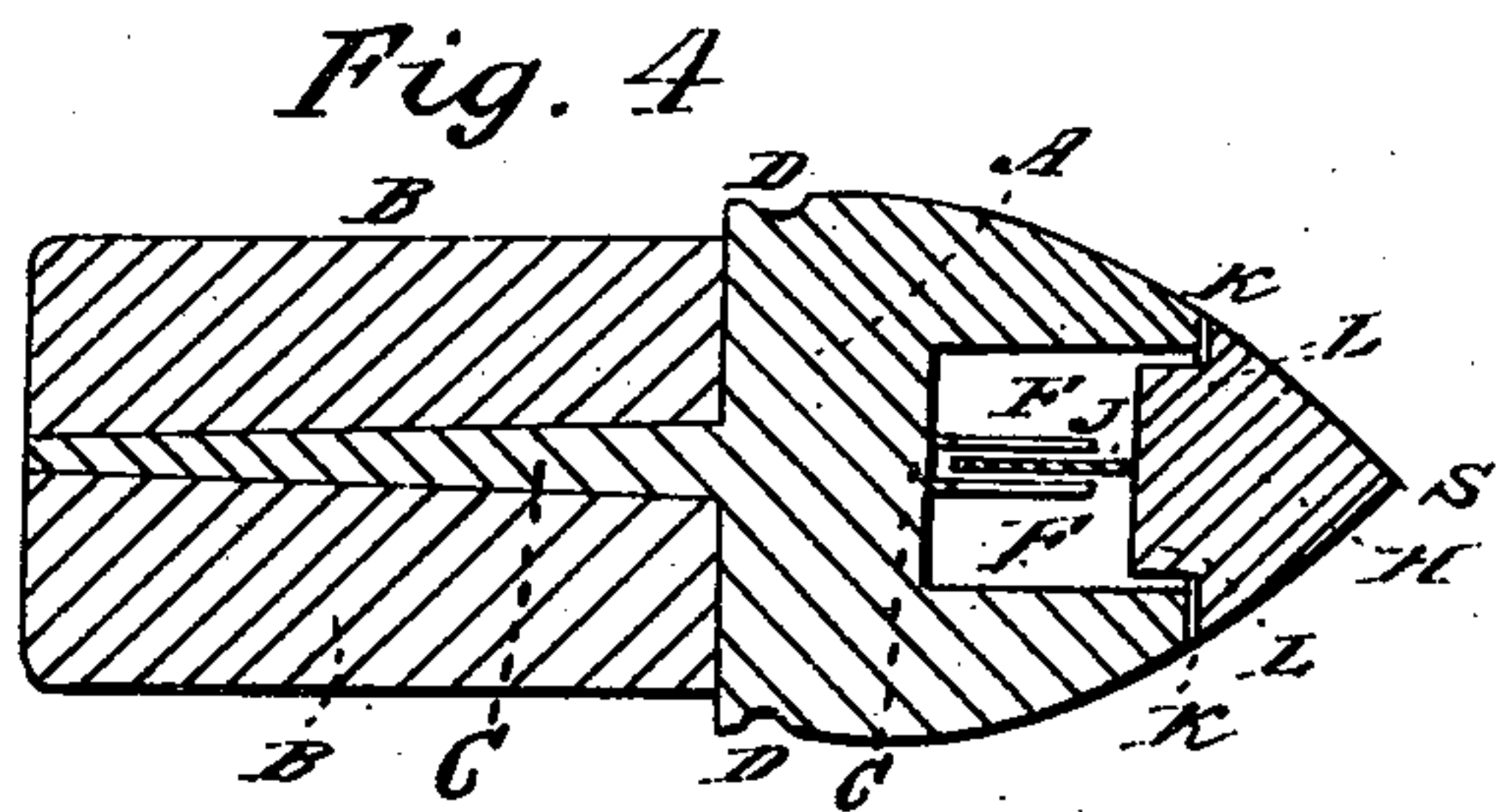
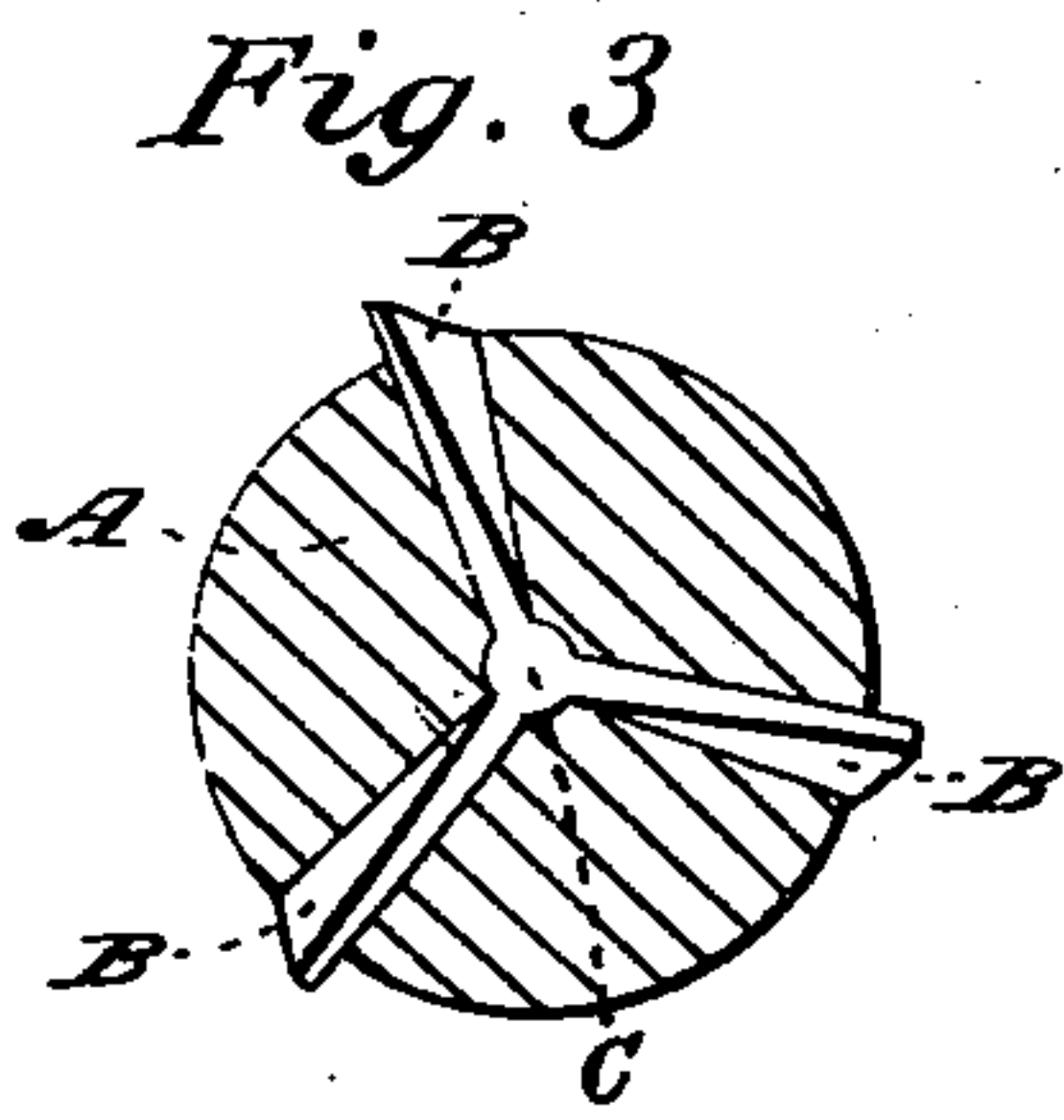
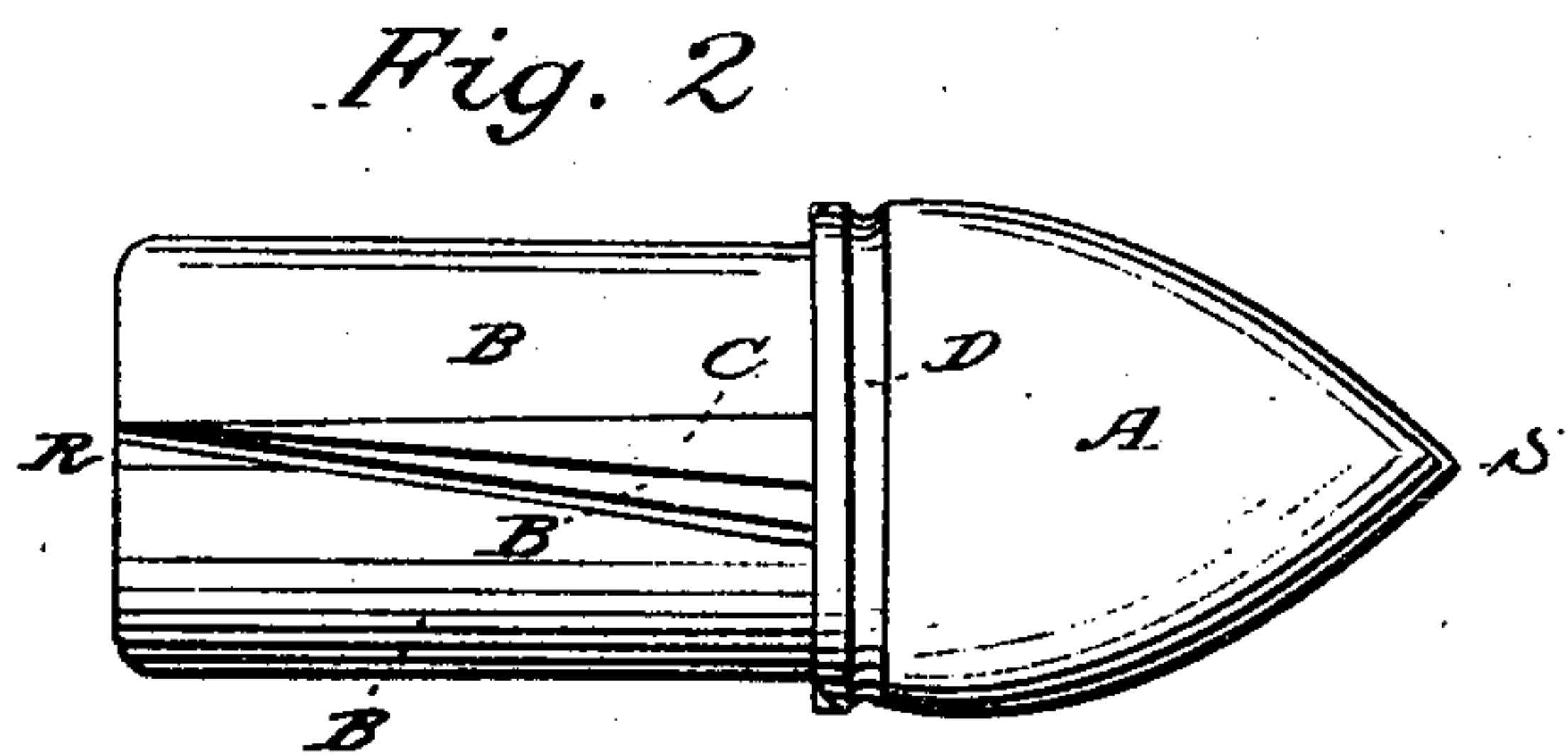
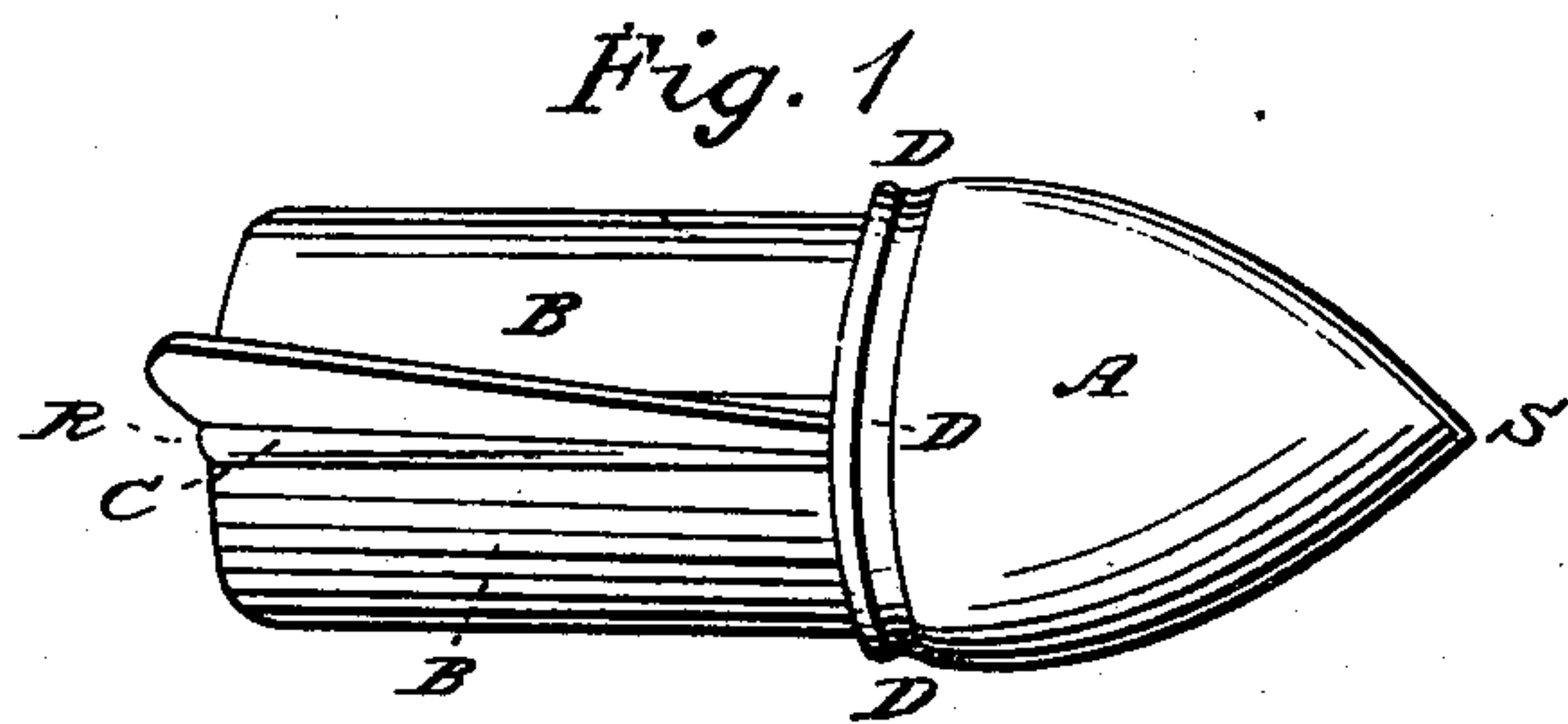


Fig. 6

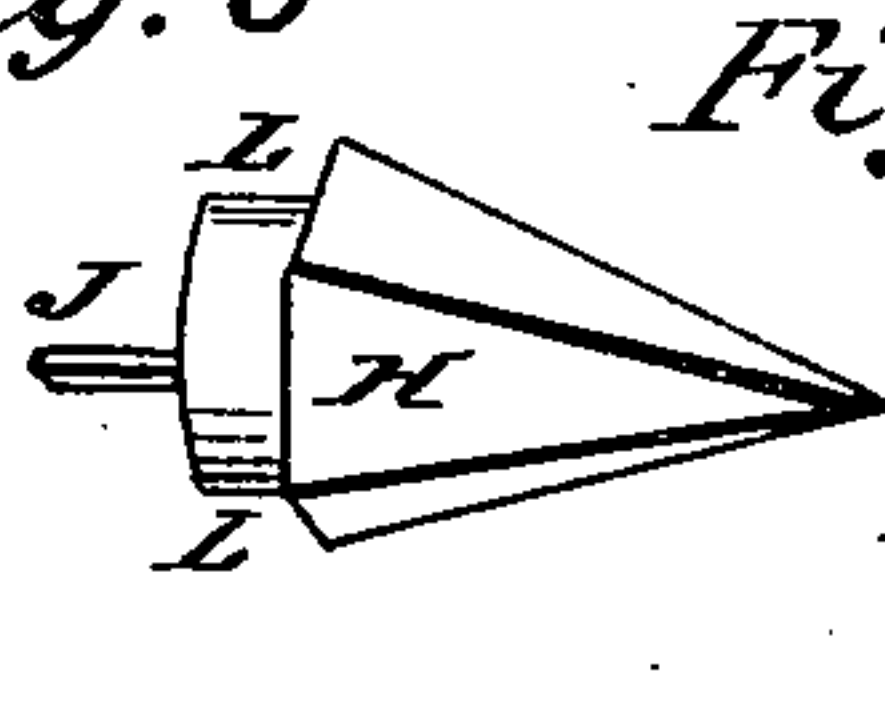


Fig. 6



Fig. 6

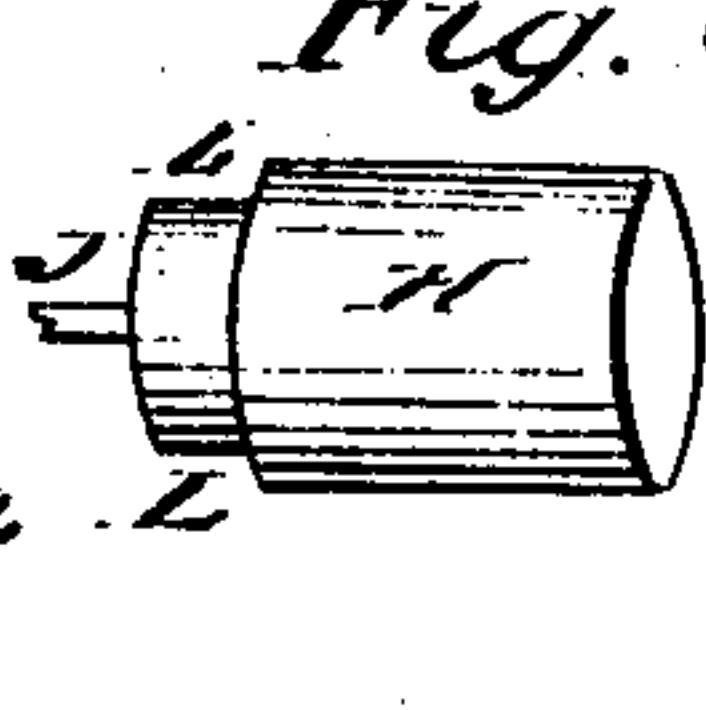
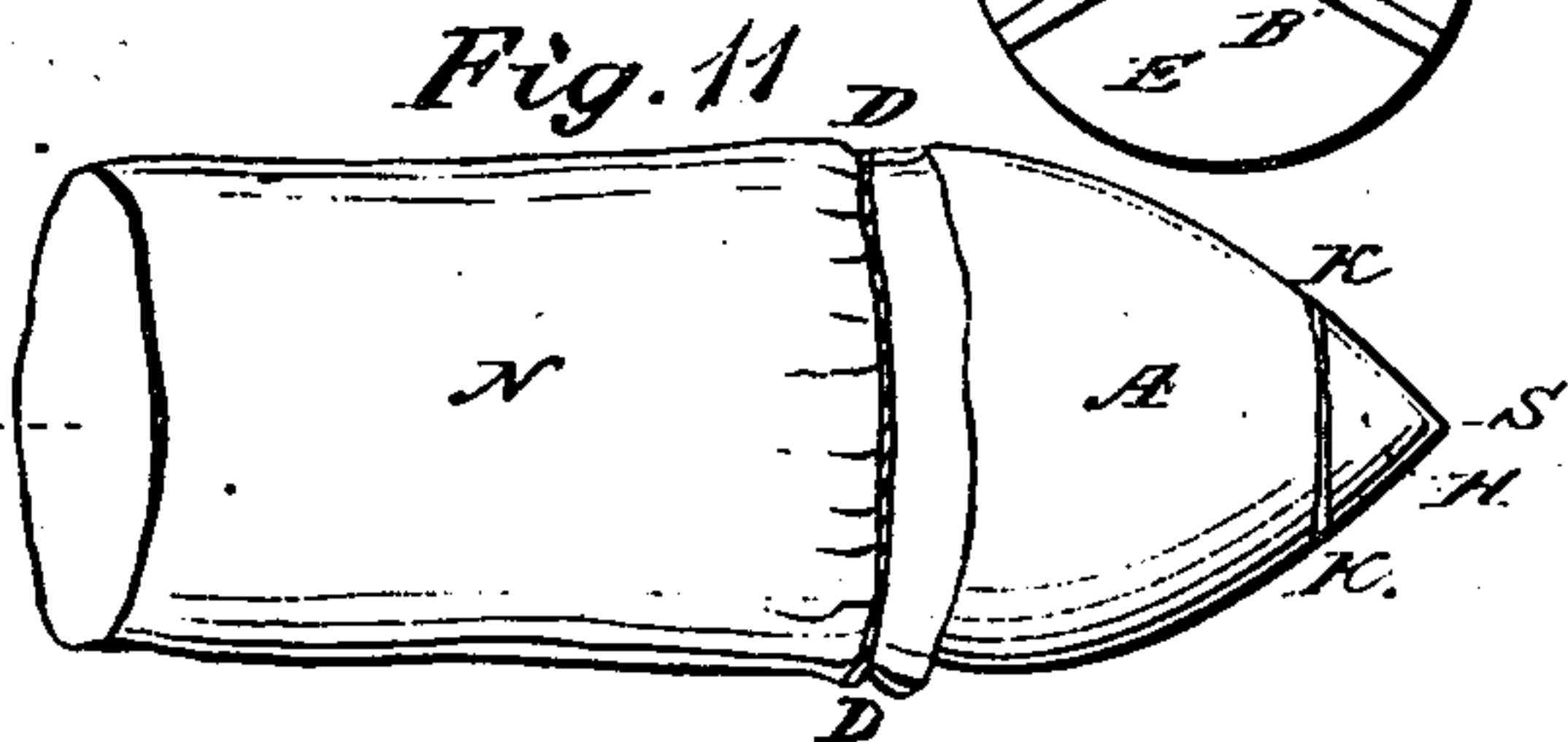
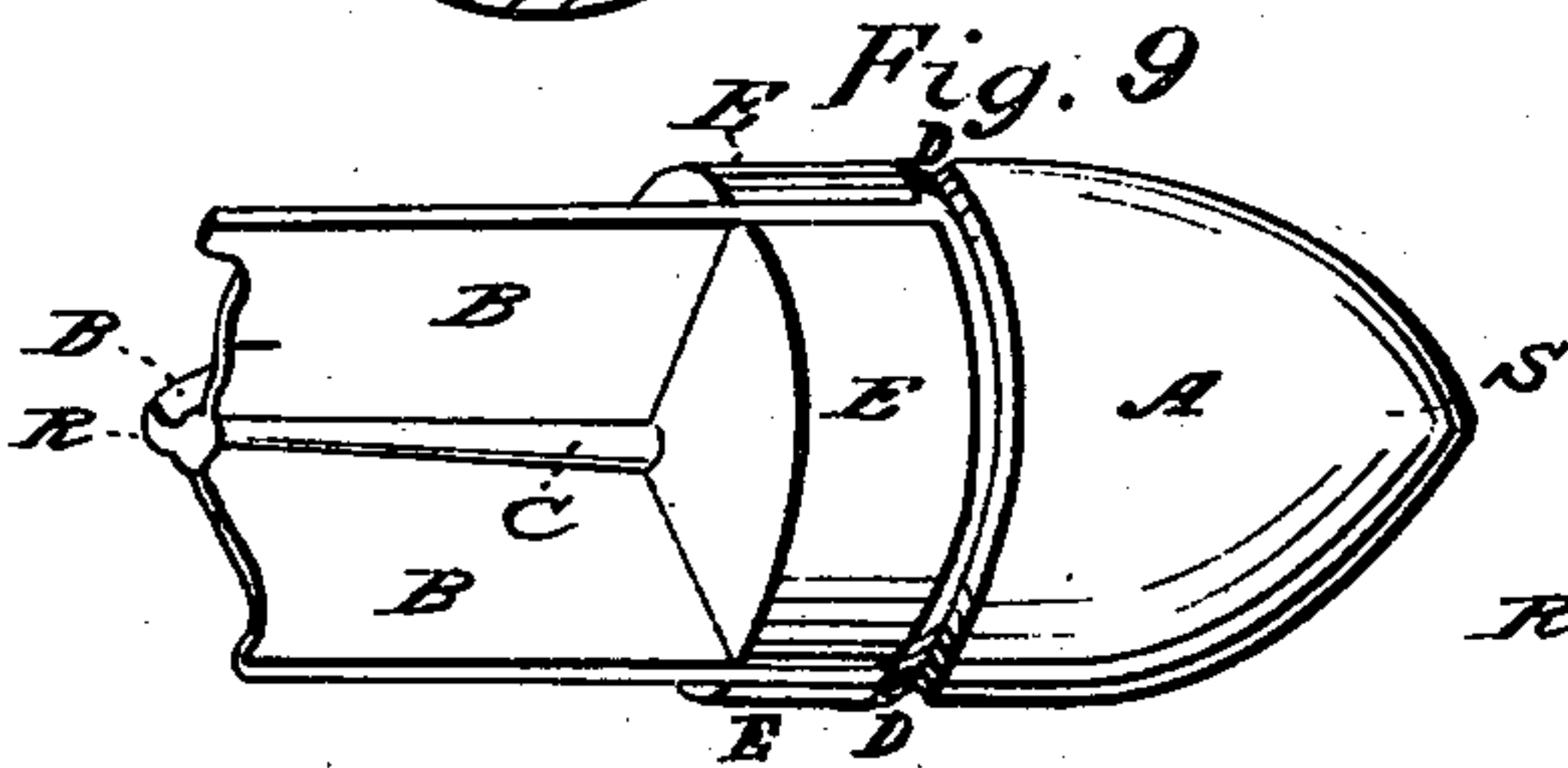
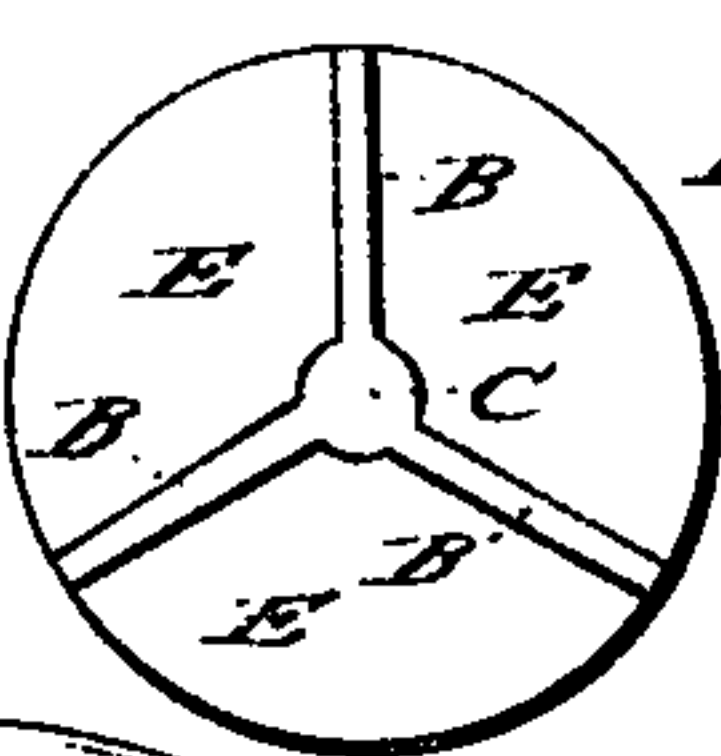


Fig. 8



Fig. 10



Witnesses:

Wm. H. Sears  
Saml L. Cutter

Inventor:

Abner L. Potter



# United States Patent Office.

ABIATHER F. POTTER, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 95,137, dated September 21, 1869.

## IMPROVEMENT IN PROJECTILES.

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

### To all whom it may concern:

Be it known that I, ABIATHER F. POTTER, of San Francisco city and county, in the State of California, have invented new and useful Improvements in Projectiles for smooth-bore arms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a perspective view;

Figure 2 is a longitudinal elevation;

Figure 3 is a transverse section of the wings of the projectile;

Figure 4 is a longitudinal section of a projectile, with hollow head and false point;

Figure 5 is a transverse section of the head of a hollow projectile, showing the chamber for the percussion or igniting-charge, and the chamber for the exploding-charge;

Figures 6, 6, and 6, are perspective views of different false points for projectiles;

Figure 7 is a side elevation of a false point, to show the guiding-shoulder, and the exploding-spindle or needle;

Figure 8 is a rear elevation of a false point of a projectile;

Figure 9 is a perspective view of a projectile, showing the packing in place;

Figure 10 is a transverse section of the wings and packing in position; and

Figure 11 is a perspective view of the projectile, in the cartridge-bag, as fixed ammunition.

The nature of my improvements consists in the peculiar construction and arrangement of devices, described and claimed in the following specification, and represented in the drawings.

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

I construct a projectile with a head, *a*, in any of the known forms of projectiles, but upon the rear end or side of this head I put three or more flanges, wings, or blades *B B B*, extending backward from the head *a*, and converging to or toward each other in the centre or in the line *R S*, of the line of the longitudinal axis of the head produced backward, if it be slug-shaped or conical, or cylindrical, and in the line of one of its diameters, if the head be spherical. The bases or lines of juncture of these flanges *B B B* are set spirally around the line *R S*, and the flanges *B B B* themselves are set spirally round said line *R S*.

This spiral position of the flanges around the line of the longitudinal axis of the head (which is also the line of projection when the missile is thrown or fired)

causes the air to act upon the flanges or wings, in their passage through it, when the projectile is thrown from a smooth-bore arm, and gives to the projectile the motion claimed, which is that of a rifle-ball.

The line of juncture of the wings or flanges along the line *R S* may be made on a spindle, *c*, or they may be simply brought together, or the wings may not actually touch each other on said line, or extend into the spindle *c*, provided their shape and position are such, that if projected toward said line *R S*, their planes would answer the requirements above named, and would meet in spiral curves around the line *R S*.

I also provide projectiles with movable false points, made in such shape and of such material as may be best adapted to the different kinds of work they are intended to perform. I drill a socket, *F*, in the head *a* of the shot, and fit the false point *H* into the socket. The projectile being held point foremost, in its flight, by the action of the flanges *B B B*, the false point will remain in position, even if fitted loosely.

If an explosive shot is needed, I truncate the head *a* of the projectile, and make a large chamber, *F*, in it, and an inner chamber, *G*, in the centre of *F*, with vent-holes in the bottom of *G*, leading through the walls of *G* into *F*. I make the false point *H* of the projectile with a spindle or needle, *J*, in such position on the rear of the false point, that when the latter is in position the spindle *J* is in the inner chamber *G*, and of such length as to reach the bottom of *G*, when the false point is sent home to a bearing on the head *a*. In the bottom of *G*, I put a percussion-cap, wafer, or other percussion explosive. In *F*, I put a charge of powder, or other explosive. I then put the false point *H* into position, putting between it and the head *a* a ring of compressible matter, *K*, of such density and thickness that it will keep the needle *J* from striking the percussion-matter in *G*, until the point of the projectile impinges on some object, when thrown or fired.

To concentrate the force of the original impact of a projectile upon a surface of less diameter than the diameter of the projectile, and to drive the false point forward by an auxiliary explosion or discharge, I make the chambers *F* and *G*, in the head *a*, of the projectile, as above stated, leaving the wall of the chamber *F* in sufficient mass to stand the discharge of the charge in *F* without bursting. I make the false point *H* of any desired shape at its apex, and with a shoulder, *L L*, fitting snugly into the upper part of *F*. I then load the projectile's head, as stated before. The charge in *F* is exploded by the original impinging force of the whole projectile, and while the projectile is in a forward motion. The original forward motion of the entire projectile acts upon the false



point H, and while the projectile is held up to its point of impingement by the whole force of its original motion, the auxiliary or secondary charge or magazine in the chamber F is exploded. This drives the point H forward by a new and further impulse.

I provide a projectile, made as above stated, with a sectional packing, E, which lies between the flanges B B B of the projectile, and behind the head *a*. It is made of sawdust, felt, or other compressible and elastic material.

When ammunition is to be charged and fixed, I tie the cartridge-bag N to the projectile by a cord, at the groove D, leaving the rear of the cartridge-bag open. I then fill in the cartridge-bag with my sectional packing, sawdust, felt, or other elastic substance, and to as great a depth as may be desirable. Upon this I

then pour in my powder, and close the whole up by fastening the rear of the bag.

I do not claim a projectile without wings, provided with a cushion between it and the explosive charge behind it; but

What I do claim, is—

A projectile, provided with wings B B and an elastic cushion, E, between the head and the explosive charge, substantially as described.

Also, the sectional elastic packing E, arranged between the wings in front of the explosive charge, and behind the head of the projectile, substantially as described.

Witnesses: ABIATHER F. POTTER.

WM. H. SEARS,  
SAML. L. CUTTER, Jr.