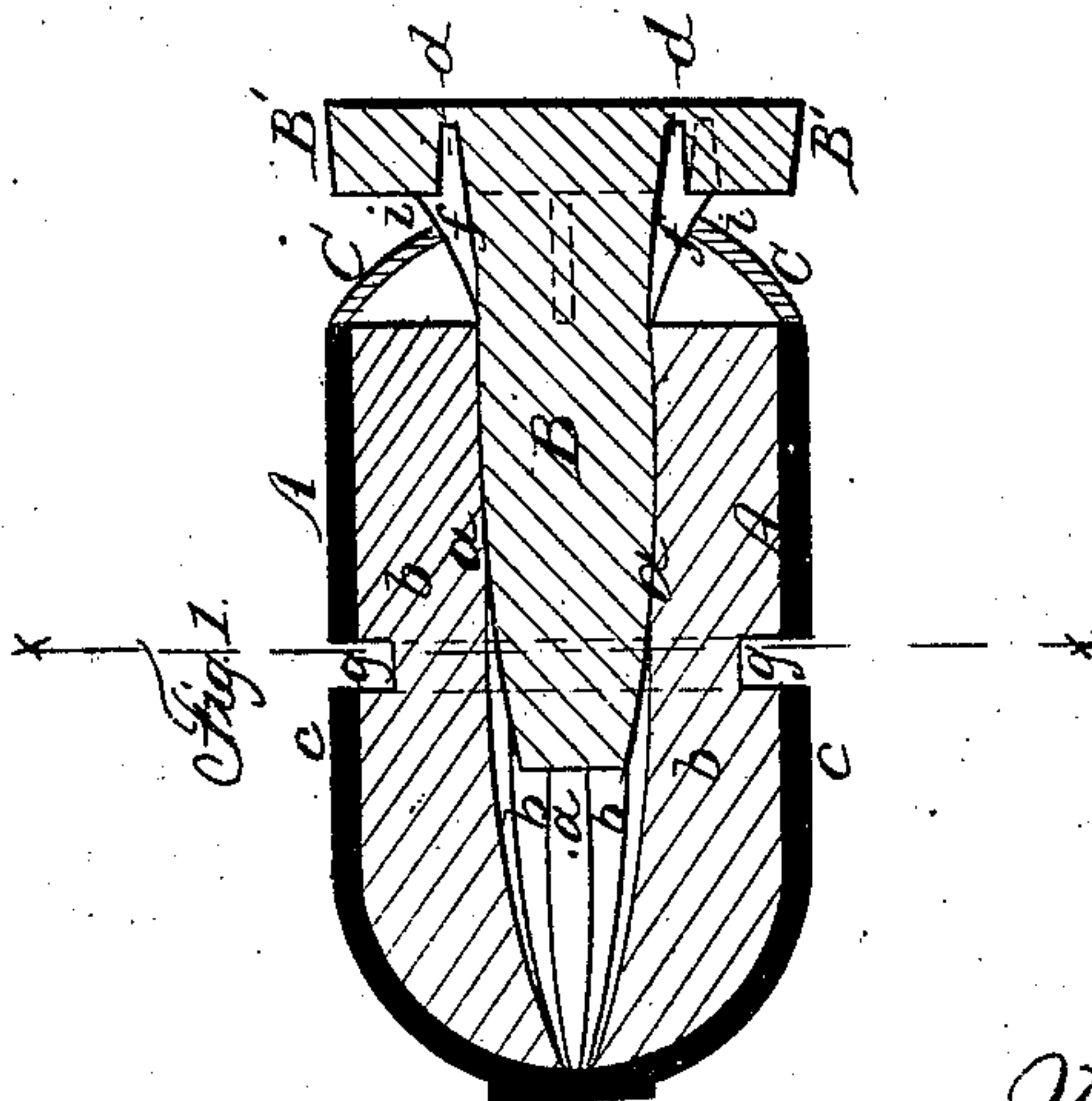
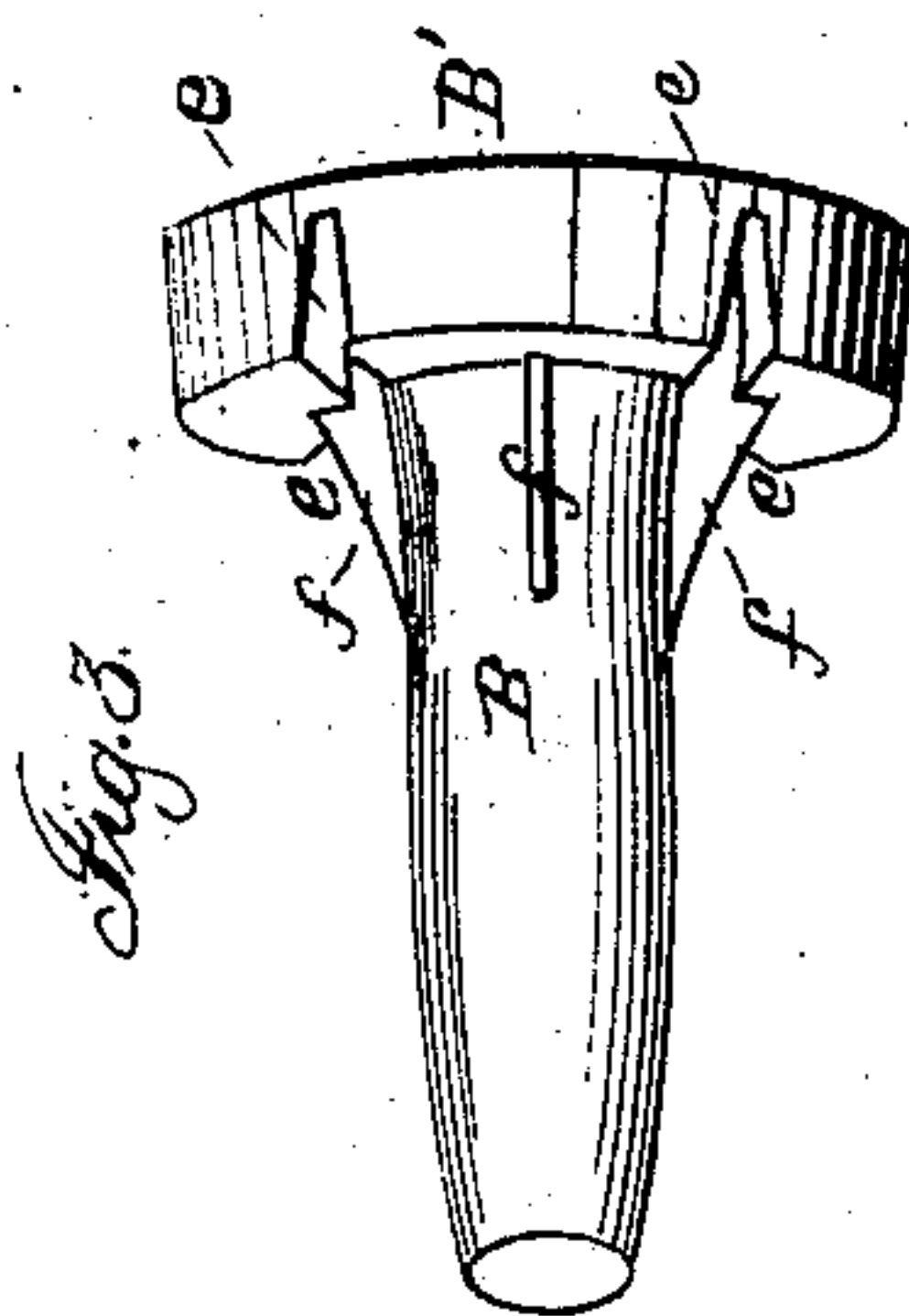
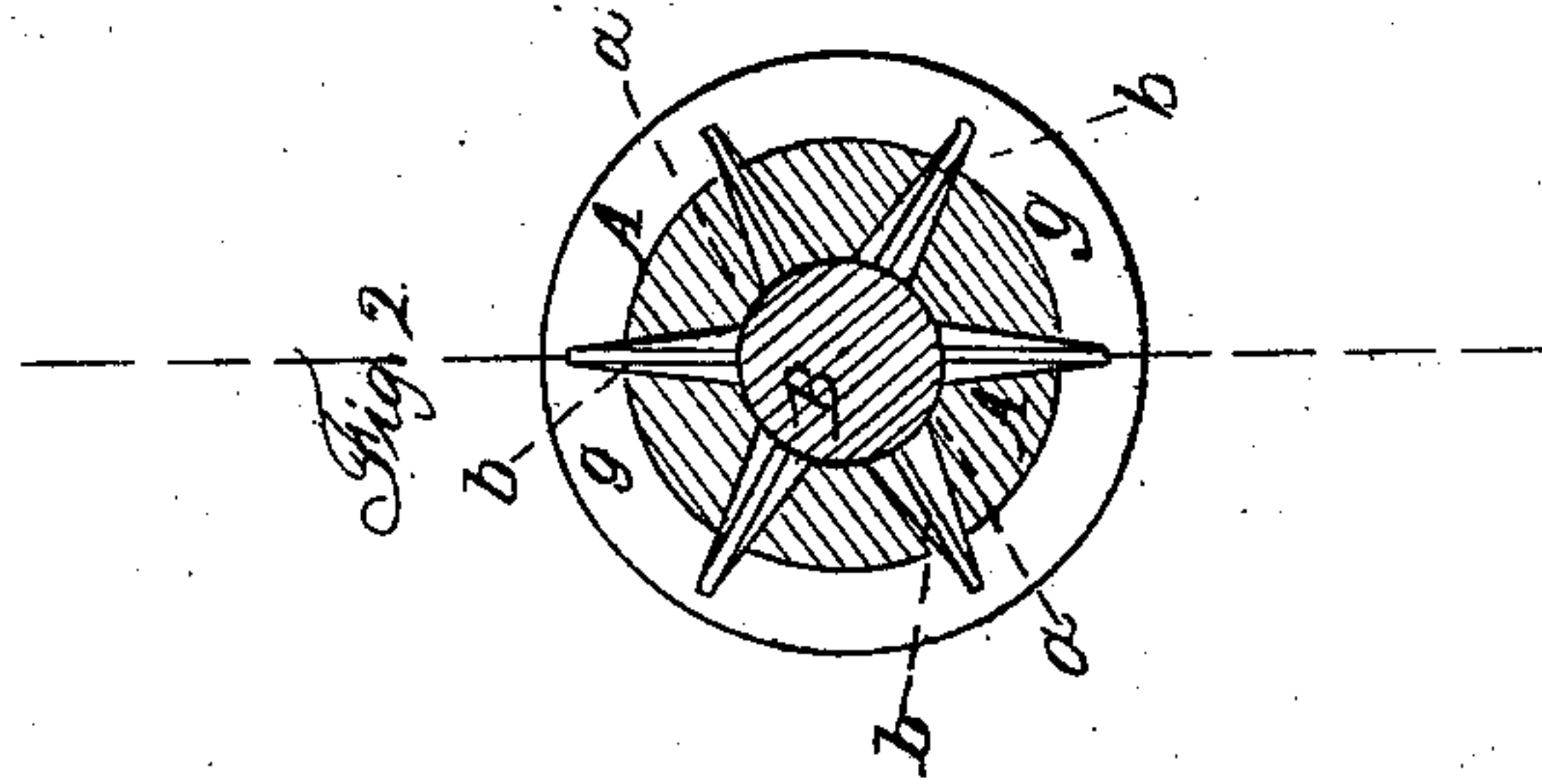


E. D. WILLIAMS.

Projectile.

No. 44,492.

Patented Sept. 27. 1864.



Mary G. Williams
John Owen
Administrators of the Estate of
E. D. Williams - Inventor.

Witnesses:
Wm F Mc Namara
M W Tringler

UNITED STATES PATENT OFFICE.

MARY G. WILLIAMS AND JOHN OWEN, OF NEW YORK, N. Y., ADMINISTRATORS OF E. D. WILLIAMS, DECEASED.

IMPROVEMENT IN BULLETS FOR FIRE-ARMS.

Specification forming part of Letters Patent No. 41,492, dated September 27, 1864.

To all whom it may concern:

Be it known that we, Mrs. MARY G. WILLIAMS and JOHN OWEN, of the city, county, and State of New York, and administratrix and administrator of ELIJAH D. WILLIAMS, deceased, late of the same city, county, and State, do hereby declare that the said ELIJAH D. WILLIAMS did invent a new and Improved Bullet, which your petitioners verily believe had not been known or used prior to the invention thereof by the said ELIJAH D. WILLIAMS. They therefore pray that Letters Patent of the United States may be granted to them therefor, vesting in them, in trust for the heir or heirs of the said ELIJAH D. WILLIAMS, the exclusive right to the same; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central longitudinal section of the bullet on a scale several times larger than the real size; Fig. 2, a transverse section of the same in the plane indicated by the line *xx* of Fig. 1. Fig. 3 is a perspective view of the central pin.

Similar letters of reference indicate like parts.

This invention consists in a novel construction of a bullet, whereby it is caused on its discharge from the gun to be broken into several pieces and to act at close quarters or at short range as a charge of buckshot, but which has the advantage over buckshot that it can be used in a rifle without fouling the bore or grooves, and that it can be more easily made into a cartridge, and can be projected with greater force.

A is the body of the bullet, having its exterior of any of the forms commonly adopted for elongated bullets, and having a central longitudinal cavity, *a*, extending from the base nearly to the point, and tapering in a forward direction. In the sides of this cavity there are several equidistant radial grooves, *b b*, extending longitudinally from the base of the bullet to the front of the said cavity, the depth of the said grooves in a radial direction being such as to leave the metal very thin outside of them, as shown at *c c*, in Figs. 1

and 2. Around the exterior of the bullet, at about the middle of its length, there is a groove, *g*, which intersects the internal longitudinal grooves *b b*.

B is a taper-pin inserted into the central cavity, *a*, of the bullet, but having its front portion larger than the front portion of the said cavity. This pin has a circular head, *B'*, of a diameter equal or nearly equal to that of the body A, and has an annular groove, *d*, Fig. 1, around the outside of the pin, and several radial grooves, *e e*, Fig. 3, in its inner face, extending from the groove *d*, through the periphery of the head, and nearly through its back; and this head is also connected with the neck of the pin by means of thin taper flanges or ribs *f f*, which serve to center a thin concavo-convex metal disk, C, which is placed over the pin between its head and the base of the body A of the bullet, the said disk having a central circular opening, *i*, larger than the neck of the pin, to permit the entrance into the cavity and grooves of the bullet the gases eliminated from the projecting charge of gunpowder. The external diameter of the said disk C is such that in its normal condition it will pass easily along the bore of the fire-arm.

The body A of the bullet and the pin B may be made of a composition of sixty-five parts, by weight, of lead and thirty-five parts of antimony, to give it the necessary brittleness or frangibility, and the disk C may be of zinc.

When the ignition of the projecting charge of the fire-arm takes place, the force of the explosion, acting against the head *B'* of the pin B, drives the said pin forward into the body A of the bullet, and causes it, by its pressure against the concave back side of the disk C, to flatten the said disk in a greater or less degree, and so cause it to expand circumferentially and make it fit the bore and grooves of the fire-arm tightly, thereby making it prevent windage and clean the bore and grooves. The driving forward of the pin in the cavity *a* of the bullet, assisted by the action of the expansive force of the gases of the powder in the said cavity and the grooves *b b*, causes the body *a* to break both in the parts *c c*, at the bottom of the grooves *b b*, and at the bottom of the groove *g*, and fly in pieces when it leaves the fire-arm, and the reactive pressure of the disk

upon the flanges *ff* of the pin, aided by the action of the expansive force of the gases in the grooves *d e e* of the head of the pin, causes the said head to break in the bottoms of its several grooves and fly in pieces. The bullet represented will break into seventeen pieces exclusive of the disk C.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination, substantially as herein described, of the body A of the bullet, having a central cavity and system of grooves, substantially as herein specified, and a central taper-pin, B, to operate substantially as herein set forth.

2. The central taper-pin, B, having its head constructed with a system of grooves, substantially as herein specified.

3. The combination of the hollow and grooved body A, the grooved, headed, flanged, or ribbed taper-pin B, and the disk C, having a central opening larger than the neck or shank of the pin, to operate substantially as herein specified.

MARY G. WILLIAMS,
JOHN OWEN,

Administrators of the Estate of E. D. Williams.

Witnesses:

M. M. LIVINGSTON,
C. L. TOPLIFF.