C. C. BRAND.

Bomb Lance.

No. 17,312.

Patented May 19, 1857.

Fig:1

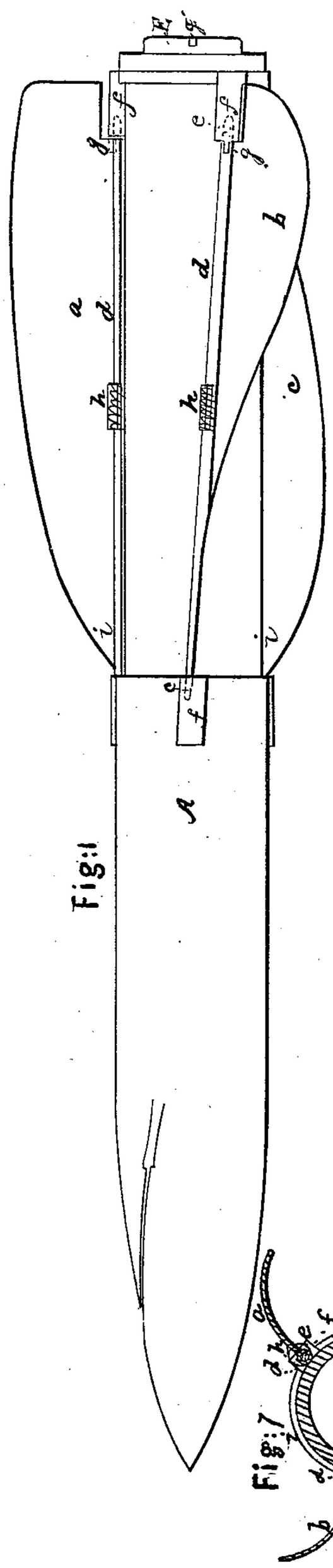


Fig:4

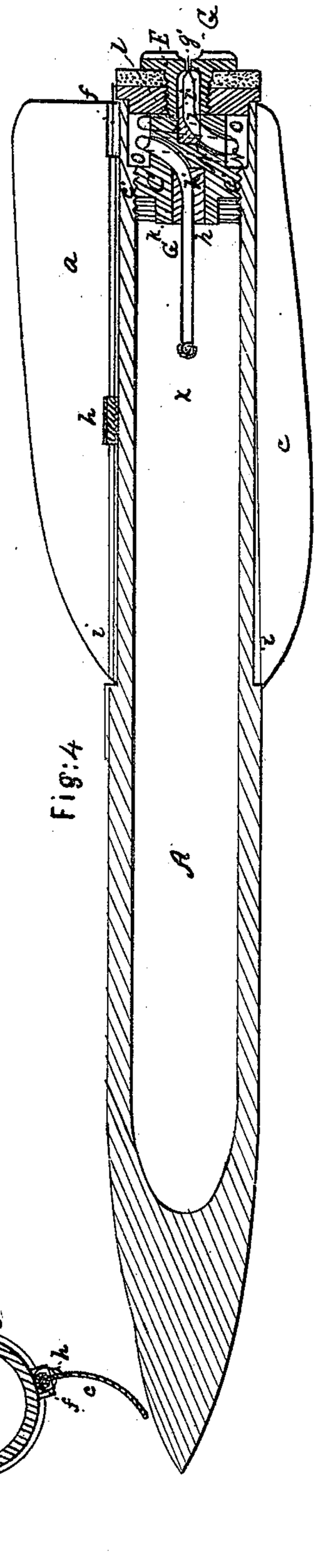


Fig:5

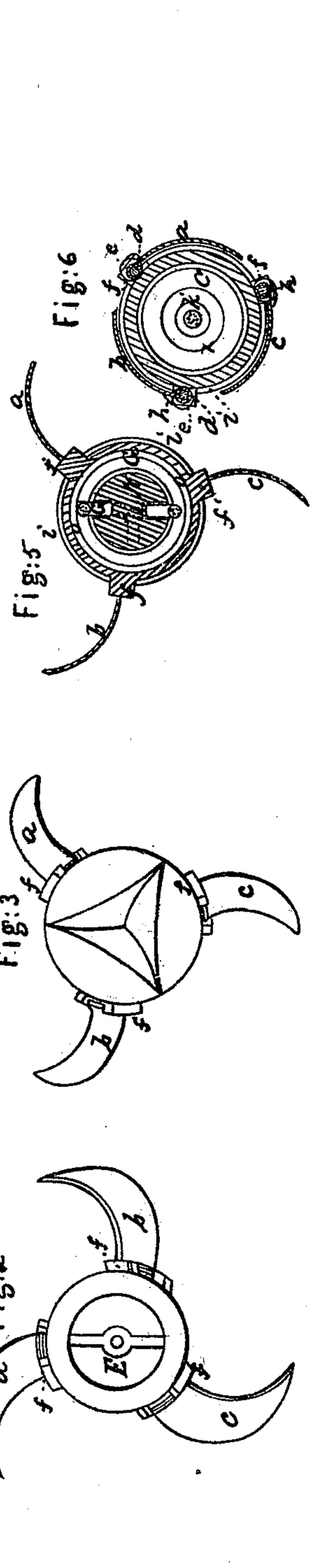
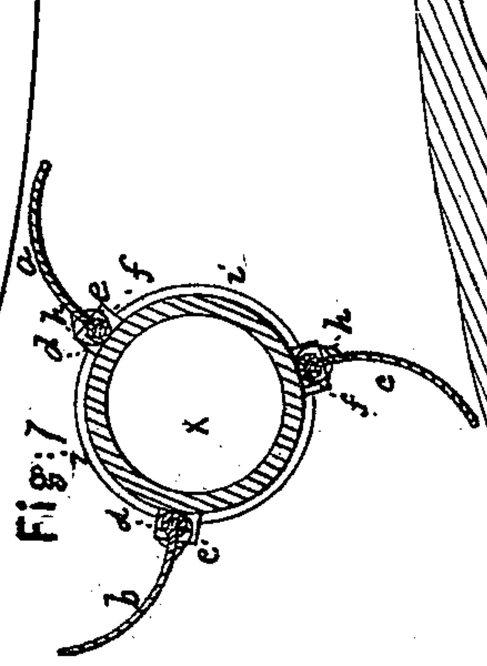


Fig:6

Fig:3

Fig:2

Fig:7



UNITED STATES PATENT OFFICE.

CHRISTOPHER C. BRAND, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN PROJECTILES.

Specification forming part of Letters Patent No. **17,312**, dated May 19, 1857.

To all whom it may concern:

Be it known that I, CHRISTOPHER C. BRAND, of Norwich, in the county of New London and State of Connecticut, have invented an Improved Projectile, which may be employed either for military purposes or for killing whales or other large animals; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 denotes a side view of such projectile; Fig. 2, a rear-end view of it; Fig. 3, a front-end view of it; Fig. 4, a longitudinal section taken through its axis, and Fig. 5 a transverse section taken through the coiling-chamber of the fuse-rope.

This projectile, as exhibited in the drawings, is of a cylindrical form and pointed at its anterior extremity, or there has a lance-head arranged with cutting-edges and shaped very much like the instrument usually termed an "engraver's scraper."

The body or hollow case of the instrument is shown at A, and as provided with three or any other suitable number of wings, *a b c*, each made of thin sheet metal, and having one edge, *d*, folded around a piece of stiff wire, *e*, made to extend beyond each end of the wing, and so as to serve as journals to support the wing when the extensions are made to enter suitable cavities in projections *f f*, projecting from the body of the bomb or projectile, the wings being formed so that they may turn down flatwise upon the external surface of the bomb or projectile.

h exhibits a spring coiled around the rod *e*, and having one end fastened to the case of the projectile, the other end being made to act against the wing for the purpose of elevating it.

In placing this projectile in a gun the wings should be folded down upon the body, the bore of the piece serving to maintain them in such position.

When a discharge of the projectile takes place, or when it is ejected from the gun by the explosion of the powder or charge thereof, its rapid flight through the air will tend to cause its wings to rise from its surface and into radial positions, so as to guide and preserve it in its proper path. By means of the oblique curves given to the wings, as well as their arrangement, the air acting on them will cause the projectile to rotate on its axis, the same serving to maintain it in its true direction.

The bomb is constructed with a load-chamber, *x*, and so as to receive the fuse-plug C, the latter being inserted and screwed into the body of the bomb, as shown at *e' e'*. This fuse-plug I construct in an improved manner with reference to that in which it is made as represented in the specification and drawings of Letters Patent numbered 9,047, and granted to me on the 22d day of June, 1852, and reissued in August, A. D. 1856, under an amended specification, the fuse-plug as there shown being termed the "fuse." In other words, I make the fuse-plug much shorter, or, generally speaking, of about one-fourth the length that it is required to be made when it is constructed as represented in my said patent; and I form in the said plug two axial chambers, *k l*, for the reception of lead or type-metal *i h*, or the equivalent thereof, (see Fig. 4,) which is cast into the same and around the fuse rope or cord G, the said two axial chambers being separated from one another by a breech-partition, N. The screw-plug is also formed with an annular space, *o o*, extending around it and for the purpose of enabling the fuse-rope G to be wound in helices or coils around the external surface of the screw-plug and within the space *o o* thereof, the said fuse-rope being caused to pass through the sides of the chambers *k l*, or, in other words, to pass out of one of them into the space *o o*, and from said space into the other of said chambers, one end of the said tube being arranged against the vent-hole *g* of the cap-screw E, while the other end is made to project into the magazine or load-chamber *x*.

When the fuse tube or plug C is inserted within the body of the bomb or projectile and fastened therein by a screw, as shown at *e' e'*, I obtain advantages as follows—that is to say, I am enabled to make the projectile much shorter, and, of course, of less——than that described in my patent hereinbefore mentioned, because the fuse-rope is coiled around the screw-plug. I am also enabled to prevent the metal packing *h* from being driven out of place at the time the projectile is subjected to the explosion of the charge of the

gun, as the breech N serves as a stop or abutment for the metal *h*.

A leather washer or wad-cap, *n*, is placed on the screw E and against the rear end of the fuse-plug C.

For sustaining the fuse-rope in the fuse-tube and preventing the fire of the charge of the gun from passing by said fuse-rope, I do not herein claim the employment of metal or metallic plugs, or the equivalent thereof, made to closely encompass the fuse-rope after it has been inserted in the fuse tube or plug.

I do not herein claim the application of wings to a projectile, whether said wings be stationary or movable; but

I claim—

1. The improved fuse tube or plug C, as constructed with two plug-chambers, *k l*, separated by a breech or partition, N, the same being for the purpose as specified.

2. The improvement of making said tube C with an encircling chamber or recess, *o o*, arranged therein, substantially in manner and for the purpose set forth.

In testimony whereof I have hereunto set my signature this 12th day of September, A. D. 1856.

CHRISTOPHER C. BRAND.

Witnesses:

WILLIAM BOND,

E. LEARNED, Jr.