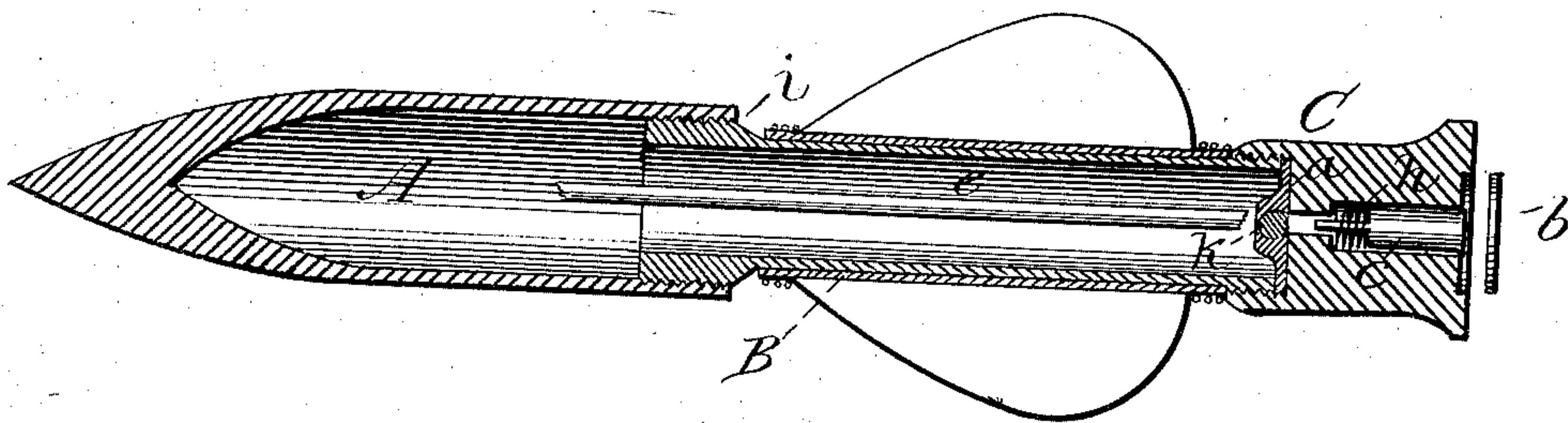


J. A. BRAND.  
Bomb-Lance.

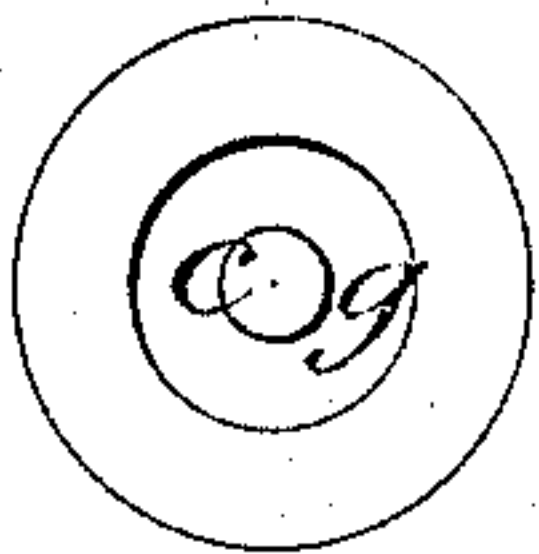
No. 222,003.

Patented Nov. 25, 1879.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Attest:*

*Chas W Hopkins*  
*Frank H. Allen*

*Inventor:*

*James A. Brand*

# UNITED STATES PATENT OFFICE.

JUNIUS A. BRAND, OF NORWICH, CONNECTICUT.

## IMPROVEMENT IN BOMB-LANCES.

Specification forming part of Letters Patent No. **222,003**, dated November 25, 1879; application filed June 19, 1878.

*To all whom it may concern:*

Be it known that I, JUNIUS A. BRAND, of the city of Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Bomb-Lances, of which the following is a specification, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 is a longitudinal central sectional view of the bomb-lance. Fig. 2 is a rear end view of the same. Fig. 3 is a rear end view of the primer-plate and primer.

This invention relates to that class of bomb-lances that are projected or fired from a gun; and its object is to construct and arrange a bomb-lance the fuse of which shall be ignited by the explosion of a primer, which is exploded by the blow of a firing-pin operated upon by the discharge of the gun; also, that it shall be water-proof and not liable to explosion from careless handling, all of which is hereinafter more fully explained.

Preferably this bomb-lance is composed of four parts or pieces, which I designate as the shell A, fuse-tube B, primer-plate *a*, and head C, all being constructed and arranged as shown in Figs. 1, 2, and 3, and hereinafter described.

The shell A, Fig. 1, is constructed with a cavity for the reception of a charge of powder for the purpose of exploding the shell. It also has a screw-thread cut upon a portion of its inner circumference. The fuse-tube B, Fig. 1, has a screw-thread at each end cut upon its outer circumference. The primer-plate *a*, Figs. 1 and 3, is a metal disk or plate holding securely in its center the primer *k*. It also forms a solid bed or anvil, so as to insure the explosion of the primer when struck by a suitable firing-pin.

The head C, Fig. 1, is constructed with a cylindrical recess in its front end, having a screw-thread cut upon its surface; also, with a central longitudinal cylindrical passage of varying diameter through it. A portion of said passage is occupied by the firing-pin *e* held rearward by the spiral spring *h*, as shown in Fig. 1. The rear end of said passage, as

shown in Figs. 1 and 2, is filled and hermetically closed by the thin metal disk *b*, Fig. 1.

In assembling this bomb-lance the cavity in the shell A is filled with powder, and the fuse-tube B, containing the fuse, is screwed tightly into the rear end of the shell A, as shown at *i*, Fig. 1.

The primer-plate *a*, containing the primer *k*, is placed in position upon the rear end of the fuse-tube B, as shown in Fig. 1, and the head C screwed upon the rear end of the fuse-tube B, as shown in Fig. 1, thus securing in position the primer-plate *a* and completing the bomb-lance.

The usual rubber or metal feathers or guides are placed around the fuse-tube. This bomb-lance can be exploded only by a direct force applied to the rear end of the head C sufficient to suddenly break the thin metal disk *b* and drive forward the firing-pin *e*, thereby exploding the primer *k*, and thus igniting the fuse *e*, which, at the proper time, ignites the powder in the shell A.

The force of the explosion of the powder in the gun upon the thin metal disk *b* in the rear end of the head C is sufficient to accomplish the desired result, as above stated.

The disk *b*, after being inserted in the head C, is hermetically sealed in the recess for its reception, in order that no moisture or water or other matter may gain access to the firing-pin or the primer, or the sockets in which they are situated. The spring *h* keeps the firing-pin up to the disk, and from being accidentally driven forward against the primer.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. As applied to or for use with the fuse-tube of a bomb-lance, the combination of the head C, provided with the primer and disk-receiving recess, arranged in it as set forth, with the primer *k*, the firing-pin *e*, and the separate sealing-disk *b*, all being and to operate substantially as specified.

2. The combination of the head C, provided with the primer and disk-receiving recesses, arranged in it as set forth, with the primer, the firing-pin, the spring, and the sealing cap



or disk, all being to operate essentially as explained.

3. The sealing-cap arranged and hermetically sealed in a recess in the head C, in combination with the separate firing-pin, disposed in the said head and with a primer, as set forth.

In witness whereof I have hereunto set my hand and seal this 14th day of May, A. D 1878.

JUNIUS A. BRAND. [L. s.]

In presence of—

CHAS. W. HOPKINS,  
FRANK H. ALLEN.