H. Bates.

Bomb Lance.

No. 18568. Patented Nov. 10. 1857

Fig: 1

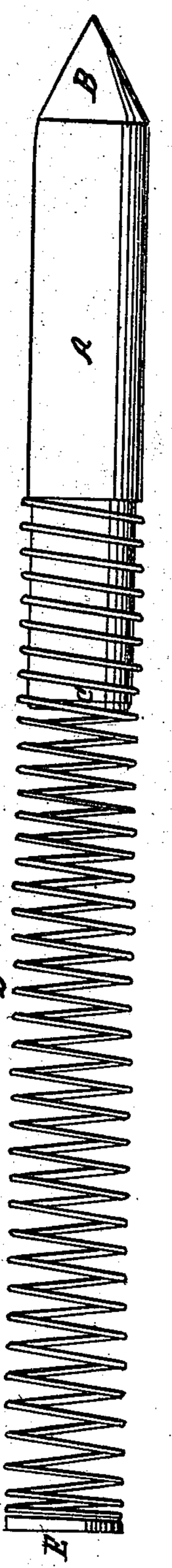


Fig: 2

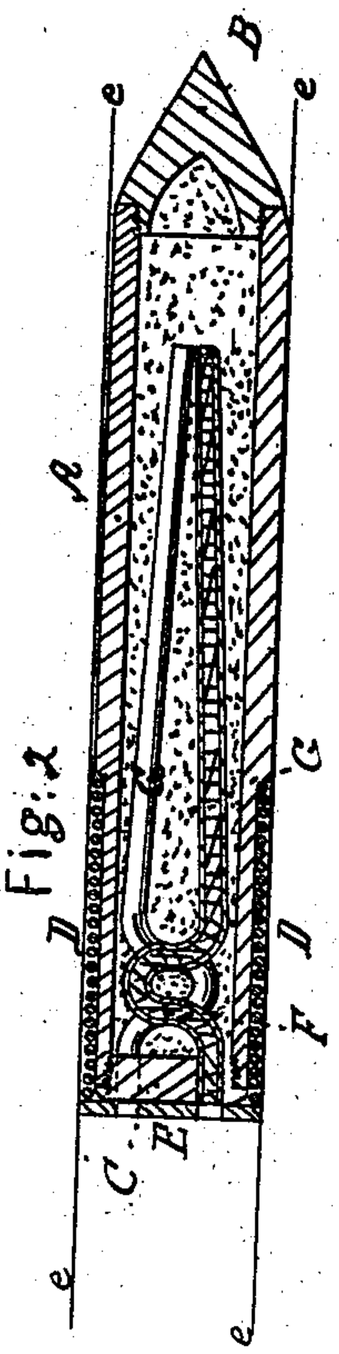


Fig: 3

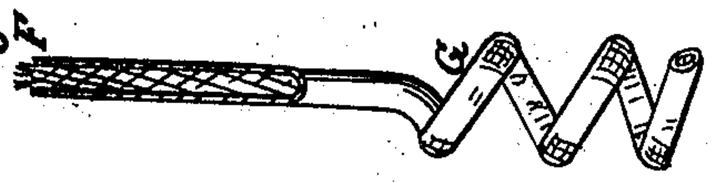
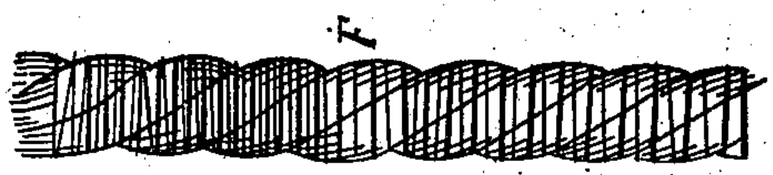


Fig: 5

Fig: 4



UNITED STATES PATENT OFFICE.

HENRY BATES, OF NEW LONDON, CONNECTICUT.

IMPROVEMENT IN PROJECTILES.

Specification forming part of Letters Patent No. **18,568**, dated November 10, 1857.

To all whom it may concern:

Be it known that I, HENRY BATES, of New London, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Bombs and other Projectiles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a bomb-lance for whaling having my improvement applied. This view represents the lance in its flight. Fig. 2 is a longitudinal central section of the same in the condition it is in while in the gun. Figs. 3, 4, and 5 represent modifications of some of the details.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the attachment to the butt-end of a bomb or other projectile of similar character of a spiral spring or coil of wire, which, when the projectile is placed in tha gun from which it is to be discharged, is compressed together and lies close to the projectile, but which, when the projectile is discharged, is caused, either by reason of its own elasticity or by the resistance of the atmosphere, to extend itself in the form of a tail some distance in rear of the projectile, where, by the resistance it meets with from the atmosphere, it serves to direct and steady the flight of the projectile.

The invention further consists in preventing the fuse from being blown through the fuse-tubes of the bomb by the discharge of the gun, and thereby igniting the charge of the bomb before the latter leaves the gun by bending the said tubes after the insertion of the fuse therein.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the body of the bomb; B, the lance-point, and C the butt-end. D is the spiral or coiled wire tail, which is attached securely to the body of the bomb at such a distance from its butt-end that the whole length of the wire may be coiled outside the bomb, between the point of attachment and the butt-end, as shown in Fig. 2. The part of the body of the bomb from the point of attachment of the wire to the butt-end is made so much smaller than the other part that the exterior of the coil of the wire D shall be no larger in circumference than the exterior of the greater portion of the length of the bomb, and hence that the bomb may be inserted with the coil around it into the gun from which it is to be fired, and yet fit properly to the bore thereof. I prefer that the wire D shall be coiled so as to require compression of the coil to insert it into the gun, as shown in Fig. 2, and then it will tend to extend itself, as shown in Fig. 1, by its own elasticity as soon as it is discharged. The coil is held compressed while in the gun by the friction of the bomb in the bore of the gun.

The outline of the bore of the gun is represented by two lines, *e e* in Fig. 2.

E is a washer or disk, which may be of metal, leather, or other material, of a size to fit easily to the bore of the gun, attached to the rear extremity of the coil so as to compel the spring to be discharged with the body of the bomb. This washer, after the discharge, serves as a medium of resistance to the air, to assist in the extension of the tail and guidance of the bomb. It is perforated to allow the fire to reach the ends of the fuse.

G G, Fig. 2, are the fuse-tubes, two in number, soldered or otherwise secured to the butt of the bomb and extending nearly to the front of the chamber thereof, to convey the fire to the front of the charge and to contain the greatest practicable length of fuse. The fuse F is made to fit these tubes as tightly as it can be drawn into them, after which the tubes are bent in the serpentine manner shown in Fig. 2, or in the spiral manner shown in Fig. 3, which represents a tube detached, and by that means it is rendered impossible for the fuse to be blown through them by the discharge of the gun, as, in addition to the obstruction that is offered by the bends, the tubes are made to bite upon the fuse by the flattening which is, to some extent, sure to be produced in them by the act of bending.

To insure the firing of the charge in the bomb I propose to employ a compound fuse, of which Fig. 4 is a side view and Fig. 5 a transverse section, composed of three single strands of simple fuse.

I do not claim the attachment to a projectile

of a tail to be inserted with it into a gun and to be extended after leaving the gun, as I am aware that tails of such character have been applied to gun-harpoons for whaling purposes; but

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

1. The employment of a tail consisting of a spiral spring or coil of wire applied to the bomb or other projectile, substantially as and for the purpose herein set forth.

2. Securing the fuse in the fuse-tubes of the bomb by bending the said tubes after the insertion of the fuse therein, substantially as herein described.

HENRY BATES.

Witnesses:
SAMUEL C. BROCKINGTON,
I. H. CANTKINS.