

GOODSPEED & CRAWLEY.

Bomb Lance.

No. { 1,826. }
 { 32,830. }

Patented July 16, 1861

Fig. 1.

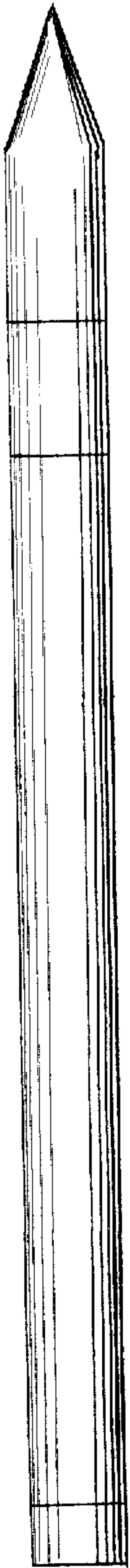


Fig. 2.



Fig. 3.

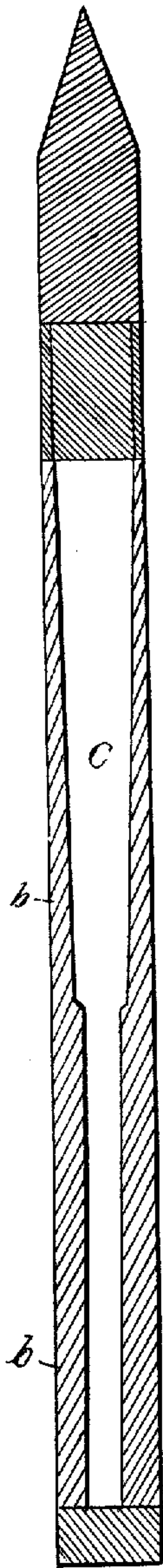
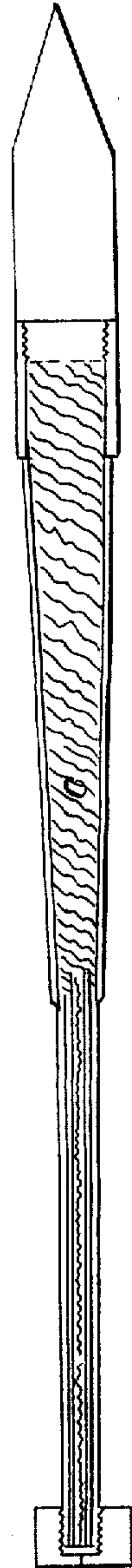


Fig. 4.



Witness
 Jacob G. Allen.
 Stephen Allen.

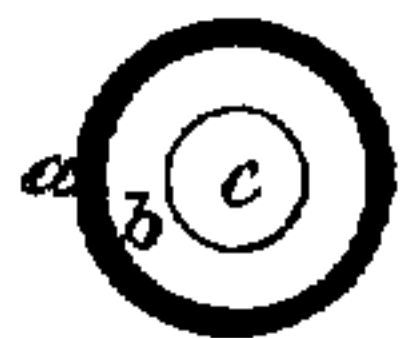


Fig. 5.

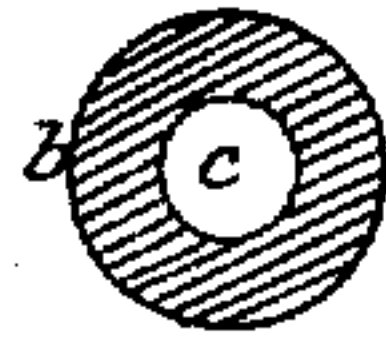


Fig. 6.

James Goodspeed
 Charles Crawley

UNITED STATES PATENT OFFICE.

I. GOODSPEED AND C. CRAWLEY, OF NORWICH, CONNECTICUT.

GUIDE FOR BOMBS, LANCES, AND OTHER PROJECTILES.

Specification forming part of Letters Patent No. **32,830**, dated July 16, 1861.

To all whom it may concern:

Be it known that we, ISAAC GOODSPEED and CHARLES CRAWLEY, both of Norwich, New London county, State of Connecticut, have invented a new and improved guide for guiding bombs, lances, or any other longitudinal instrument or projectile in its course through air or water when thrown from a gun or by any other means, of which the following is a specification.

The above guide consists of a metal sheath or cylinder covering the rear end of the instrument or its fuse-shaft, which forms an air-chamber which lightens the rear and still keeps a uniform size, and forms a guide on the momentum principle; also, the guide consists of covering the fuse-shaft or rear end of the instrument with cork, which has the same effect as the metal sheath. (See drawings, which make part of this specification.)

Figure 1 is an external view of an instrument with guide attached and finished.

Fig. 2 is an open view of an instrument to be guided inclosed in a metal sheath or cylinder, (marked A,) forming the air-chamber *b*; *c*, instrument inclosed in the sheath or cylinder.

Fig. 3 is an open view of an instrument covered with cork or light wood. *b* represents

the cork or wood covering; *c*, the instrument inclosed.

Fig. 4 is a longitudinal section, showing the fuse-shaft and the body of an instrument.

Fig. 5 is a transverse section of Fig. 2. *a*, metal sheath or cylinder; *b*, air-chamber; *c*, fuse-shaft.

Fig. 6 is a transverse section of Fig. 3. *b*, cork covering; *c*, fuse-shaft.

We claim—

1. The application of the metal sheath or cylinder as a guide to bombs, lances, or any other longitudinal instrument, as set forth in the above specification as our invention.

2. The application of cork as a guide to bombs, lances, or any other longitudinal instrument or projectile, as set forth in the above specification as our invention.

3. The application of the metal sheath or cylinder and the cork combined by covering the cork with the cylinder as a guide to bombs, lances, or any other instrument, as set forth in the above specification as our invention.

ISAAC GOODSPEED.

CHARLES CRAWLEY.

Witnesses:

SARAH G. ALLEN,

STEPHEN ALLEN.