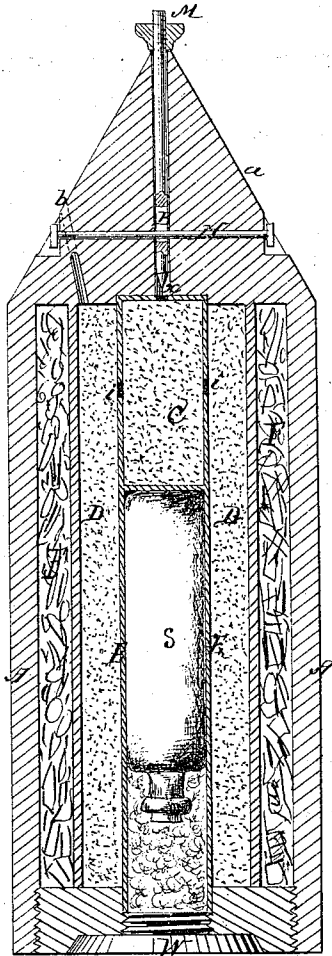


J. Link.

Projectiles.

PATENTED MAY 24 1870

103477



Witnesses:

Victor Hagmann  
Chas. A. Pettit

Inventor:

J. Link  
per Munroe & Co.  
Attorneys.

# United States Patent Office.

JOSEPH LINK, OF THE UNITED STATES ARMY.

Letters Patent No. 103,477, dated May 24, 1870.

## IMPROVEMENT IN PROJECTILES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOSEPH LINK, Company B, Eighth Infantry, United States Army, of Raleigh, in the county of Wake and State of North Carolina, have invented a new and useful Improvement in 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 making a part of this specification, in which the figure is a sectional elevation.

This invention has for its object to cause the explosion of a shell by means of a needle communicating with a button at the front end of the shell, and extending thence inward to a cap that lies in contact with the explosive material, so that the striking of the forward end of the shell against any object, after its discharge, may result in its explosion.

In the drawings—

A is the body or outer casing of a cylindrical shell.

B is a needle, lying, for the most part, centrally of the front part of the shell, and extending to the distance of half an inch, more or less, out beyond the extremity of the chamber, such projecting part bearing a lead or pewter nut, M.

The inner end of the needle, when the shell is prepared for explosion, is nearly or quite in contact with a percussion-cap, *x*, which lies next a case, C, containing some fulminate, and lying within a tube, E, placed lengthwise and centrally of the cylinder A.

The shell having been discharged out of a cannon, the instant the front end of the needle B strikes any hard object, the needle is thrust with great force against the cap *x*, causing it to explode, and through it the fulminate in the case C.

Orifices *i i* communicate from the fulminate to the powder in the inclosing-cylinder D, placed within the outer case A, by which means the powder is fired, and the shell burst.

There is a space between the inner cylinder D and the outer case A, for holding broken glass, nails, or other fragments F, which, when sent flying by the explosion, increase the destructiveness of the shell. The cylinder D may be made of leather, sheet-iron, or tin.

A bottle, S, containing some compound for setting buildings, ships, &c., on fire, may be inclosed in the tube E, the contents of the bottle being inflamed when the shell bursts.

The rear end of the tube E is closed by a screw-stopper, W.

To secure safety in handling, transportation, &c., the needle B may be partially or wholly withdrawn from the shell by turning the nut M in the proper direction.

The needle passes through and is sustained by a cross-bar, H, extending diametrically across the shell, through orifices in the casing, and loose enough therein to work to a slight extent.

A vent-tube, *b*, one of whose openings is in the conical casing, and the other is in communication with the powder in the cylinder D, affords an opening for the insertion of a fuse, to be used in case the needle is removed, broken, or lost.

Of course, the outer orifice of the tube *b* should be plugged tightly when there is no fuse in it.

Having thus described my invention,

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

The combination of the shell A, needle B, tube C, cylinder D, and cross-bar H, in the manner and for the purpose described.

JOSEPH LINK.

Witnesses:

ALBERT OLMEE,  
CHARLES PRIMES.