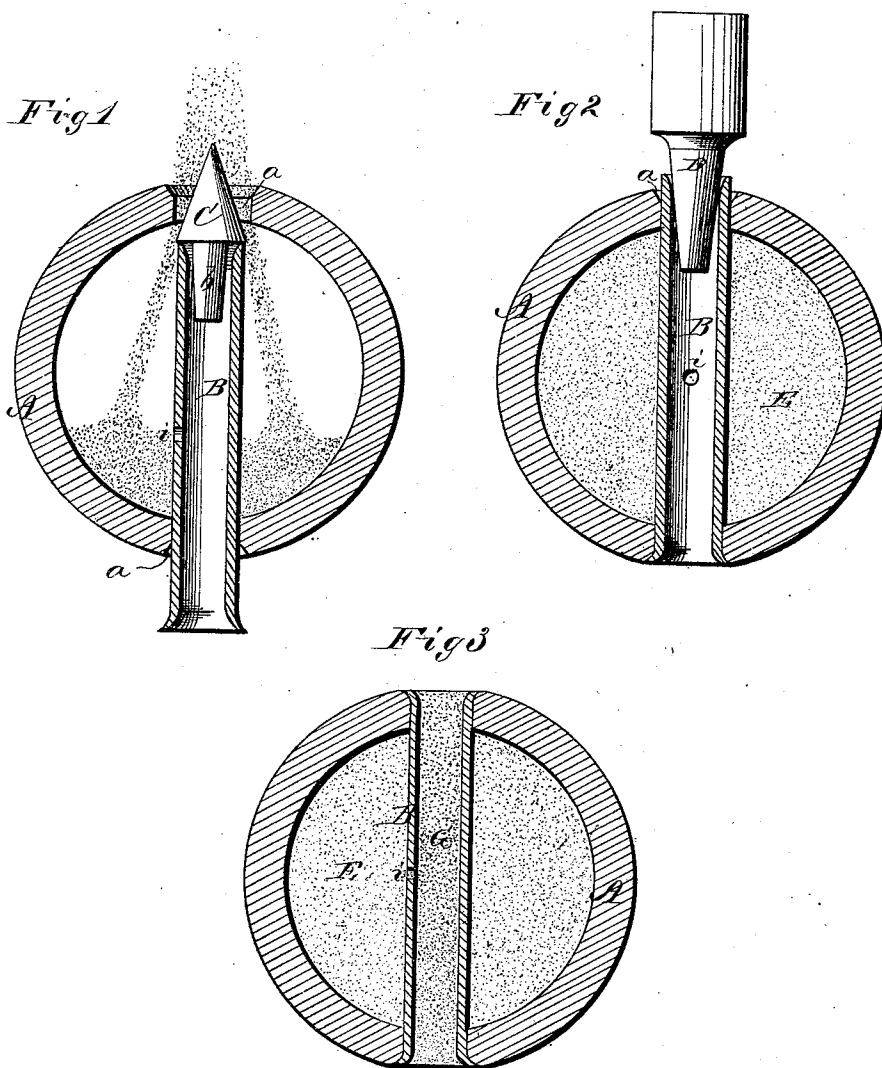


H. TYLER.
Explosive-Shell.

No. 159,982.

Patented Feb. 16, 1875.



WITNESSES
Frank L. Ourand
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UNITED STATES PATENT OFFICE.

HIRAM TYLER, OF GENESEO, NEW YORK, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO JOSIAH WARREN AND N. H. GEERHART, OF SAME PLACE.

IMPROVEMENT IN EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. **159,982**, dated February 16, 1875; application filed February 8, 1875.

To all whom it may concern:

Be it known that I, HIRAM TYLER, of Geneseo, in the county of Livingston and in the State of New York, have invented certain new and useful Improvements in Shells; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

My invention relates to shells used as grape-shot in cannons; and it consists in the construction and combination of the parts of such shell, and in the method of loading the shell, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a vertical section of my shell in position for loading. Fig. 2 is a similar section in position for completing the loading, and Fig. 3 is a section of the loaded shell.

A represents a hollow shell of any suitable dimensions, and provided with two holes, *a a*, diametrically opposite each other, and more or less countersunk at their outer ends. B represents a hollow tube, made of soft metal, of such dimensions as to pass through the holes *a a*, and have its ends upset in the outer countersunk ends thereof.

In loading this shell the tube B is inserted through one of the holes *a* nearly to the opposite hole, as shown in Fig. 1. In the inner end of the tube B is then inserted the stem *b* of a cone, C, which projects up through the hole in the shell. When the powder now is poured in through this hole it is spread in all directions by the cone C, so as to fill the en-

tire shell. The tube B is then pushed up through this hole, as shown in Fig. 2, and the end of the tube upset by means of a tamp, D, thereby holding the tube firmly in its place in the shell. In the center of the tube B is a hole or vent, *i*, as shown; and the tube is filled with slow powder.

E represents the charge of the shell, and G the charge of the tube.

These shells are intended to be used in place of the ordinary case or grape shot. As such a charge is fired from a cannon, the slow charge G is ignited, and as the fire reaches the center of the tube the charge E is exploded through the vent *i*, bursting the shell in numerous pieces, causing more destruction to life and limb than would otherwise be the case.

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

1. A shell consisting of the soft-metal tube B, provided with a vent, and the outer shell A, these parts being connected together and combined for operation substantially as and for the purposes herein set forth.

2. The method of loading the shell A by first inserting the central soft-metal tube B into the case, and, by means of the cone C, causing the distribution of the charge, after which the tube is fully inserted and upset, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of February, 1875.

HIRAM TYLER.

Witnesses:

WILLIAM L. BRAMHALL,
J. M. MASON.