

W. GARDNER.

Shell Fuse.

No. 103,599.

Patented May 31, 1870.

Fig. 2

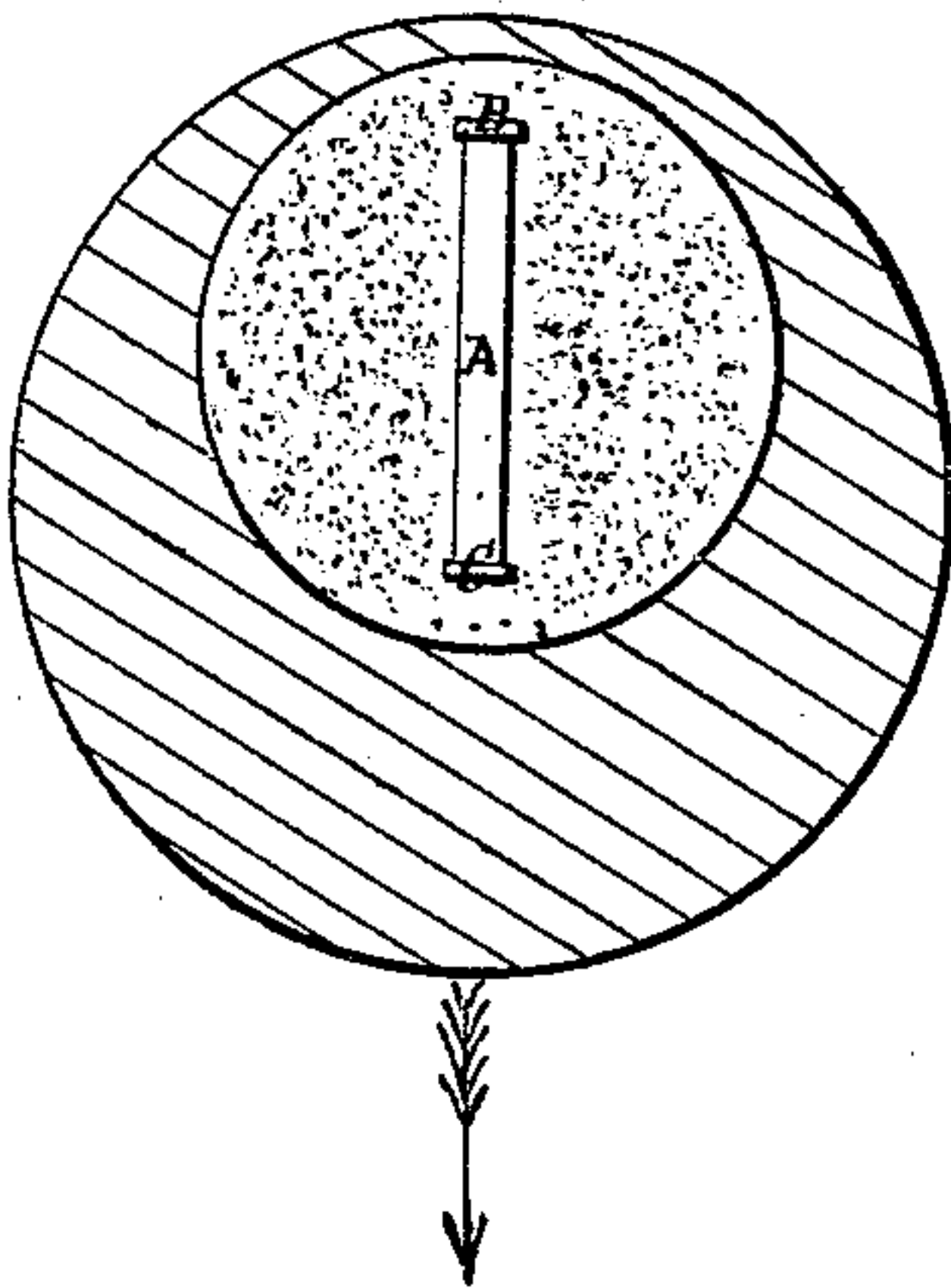


Fig. 1

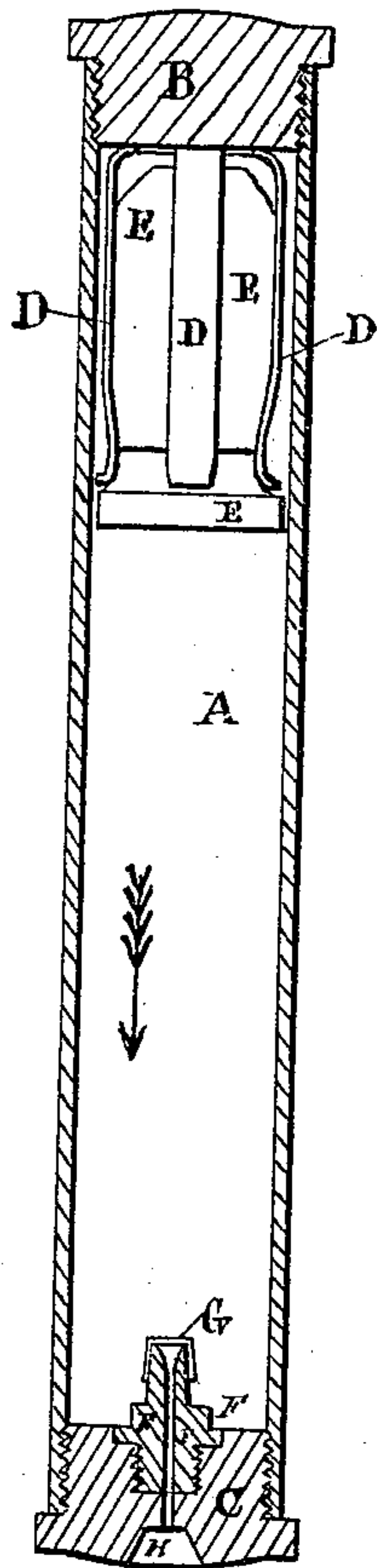
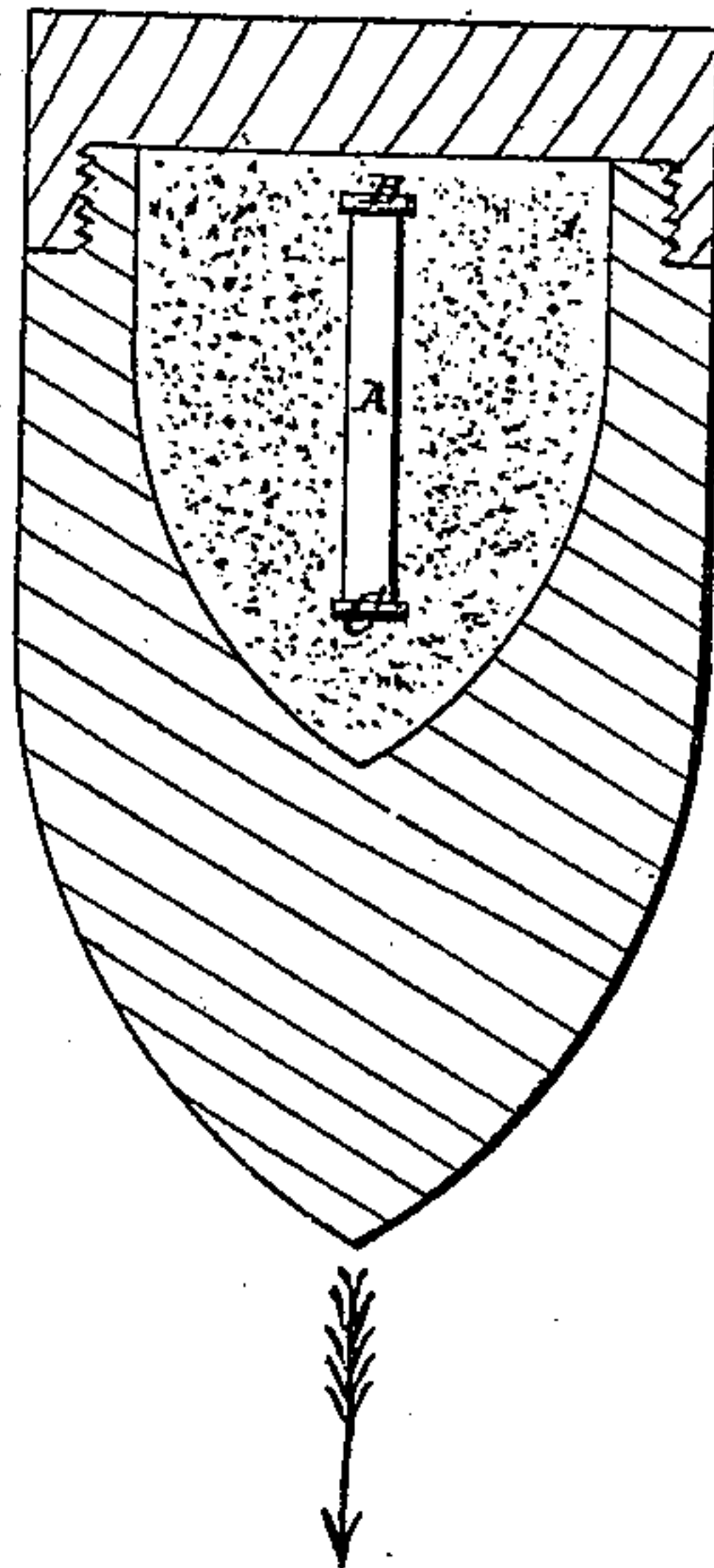


Fig. 3



Witnesses:

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Inventor:

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United States Patent Office.

WILLIAM GARDNER, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 103,599, dated May 31, 1870.

IMPROVEMENT IN PERCUSSION-FUSE.

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, WILLIAM GARDNER, of the city and county of San Francisco, State of California, have invented an Improved "Timeless Percussion-Fuse for 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 drawing and to the letters marked thereon.

This invention relates to that class of percussion-fuses which employ a cap or fulminate which is exploded by means of a sliding bolt; and consists in certain specific details of construction, which will be fully described hereinafter.

In the drawing—

Figure 1 is a longitudinal section of a machine embodying my invention.

Figure 2 is a sectional view of a spherical projectile or shell.

Figure 3 is a longitudinal section of a projectile of the pointed cylindrical form.

Like letters refer to like parts.

To enable others skilled in the art or science to which it most nearly appertains to make and use my invention, I will proceed to describe its construction and operation.

A is a stout cylindrical tube, closed at one end by the cap B, and at the other end by the cap C.

To the cap B is attached the elastic clamp D, consisting of four elastic fingers or strips of metal that grasp the sliding bolt E and retain it with sufficient force to prevent it from slipping out, except in the manner desired.

Into the cap C is screwed the nipple F, and upon which is placed the percussion-cap G.

The nipple F and the cap C are perforated in such a manner that, if the recess H was filled with powder, the explosion of the percussion-cap would ignite said powder.

It is evident that if a machine constructed as rep-

resented in fig. 1 be caused to move swiftly in the direction shown by the arrow, and then suddenly checked or stopped in its progress, the momentum acquired by the sliding bolt E would carry that bolt out of the elastic or spring clamp D, and along the tube A, until it came in contact with the percussion-cap G, causing said cap G to explode.

And it is further evident that if the said machine was imbedded in an explosive compound, the explosion of said percussion-cap would ignite the said explosive compound.

Also, if similar machines were imbedded in the powder contained in the cavities of projectiles, as shown in figs. 2 and 3, and projectiles were discharged from cannon in the direction of the arrows, said projectiles, following a well-known law, would continue moving on with the point or heaviest part in advance until they came in contact with the earth or something to arrest their progress, and the sliding bolt E would continue moving on after the progress of said projectiles had been arrested, and until the sliding bolt came in contact with the percussion-cap G, exploding said cap G, and igniting the powder and exploding the projectiles instantaneously when coming in contact with any solid body opposing their course.

Having thus described my invention,

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

The percussion-fuse described, consisting of the tube A, caps B and C, clamps D, sliding bolt E, nipple F, and cap G, when combined and arranged as described, and adapted to be placed independently in any proper projectile without special attachment thereto.

In testimony whereof I have hereunto set my hand and seal.

Witnesses: WM. GARDNER. [L. s.]
C. W. M. SMITH,
E. V. SUTTER.