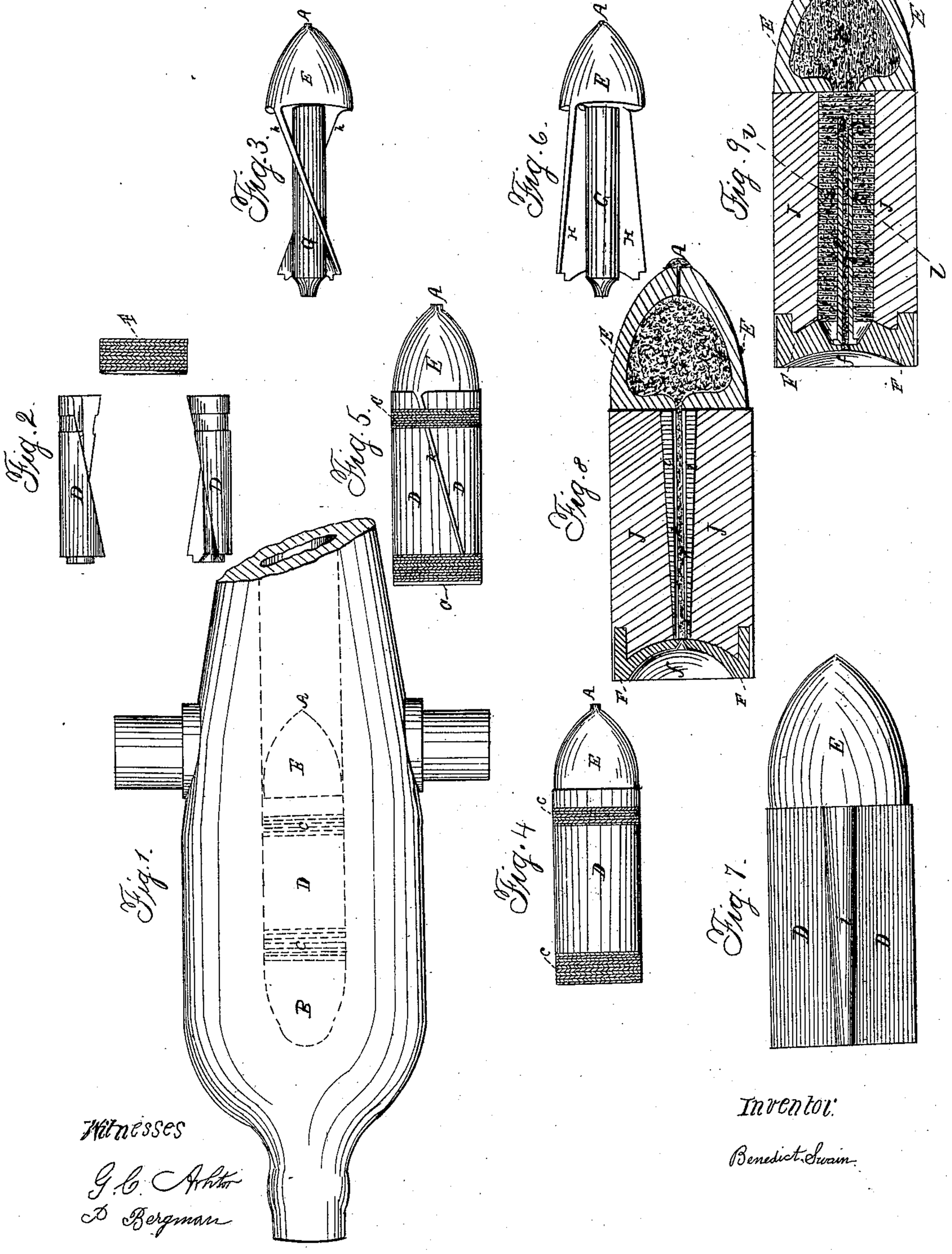
B. SWAIN.

Shell.

No. 27,245. Patented Feb. 21, 1860.



Witnesses

G. C. Achter

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Inventor:

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UNITED STATES PATENT OFFICE.

BENEDICT SWAIN, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PROJECTILES FOR FIRE-ARMS.

Specification forming part of Letters Patent No. **27,245**, dated February 21, 1860.

To all whom it may concern:

Be it known that I, BENEDICT SWAIN, of the city of Washington, in the county of Washington, District of Columbia, have invented a new and improved projectile, to be used as a solid shot, shell, or rocket-shell, which receives its rotary motion from its peculiar construction without the aid of the rifle-cannon, it being intended to be thrown from smooth-bored guns of the largest caliber down to the small-arm; and I do hereby declare that the following is a full description thereof, reference being had to the accompanying drawings, and to the figures and letters of reference marked thereon.

The nature of my projectile consists of an elongated shot, shell, or rocket-shell to be used as either, as represented and described in the drawings.

Figure 1 represents a gun with the charge affixed. A is the percussion-cap intended to explode the shell when it strikes. B represents the charge of powder; C, the hemp packing intended to confine the gas, so that the projectile may receive the full force of the charge, causing the projectile to reach a greater distance; D, the wooden packings which, being larger than the diameter of the projectile, prevent the metals of the gun and projectile from touching, thereby allowing the gun always to retain a perfectly-smooth bore; E, the head of the projectile.

Fig. 2 represents the wooden packings and metal sabot. F is the metal sabot, which is intended to be used on the end of the wooden packings, so as to resist the discharge of the gun and prevent it from interfering with the fuse in the tail of the projectile; D D, the wooden packings.

Fig. 3 represents a rocket-shell on its flight. A is the percussion-cap intended to explode the shell when it strikes; E, the head of the shell; G, the tube filled with rocket composition, which can be fused at any given distance to ignite the rocket composition, thereby continuing the flight of the projectile; *h h*, the spiral tail from which the projectile receives its rotary motion.

Fig. 4 represents the projectile prepared. A is the percussion-cap; C, the hemp packing; D, the wooden packings; E, the head of the projectile.

Fig. 5 also represents the projectile prepared. A is the percussion-cap; D D, the wooden packings; E, the head of the projectile; *h*, the spiral tail.

Fig. 6 represents the projectile without the packings; A, the percussion-cap; E, the head of the projectile; G, the tube intended to contain the rocket composition; H H, the spiral tail.

Fig. 7 represents a section of the solid shot. D D represent the wooden packings; E, the head of the shot; *i*, the shaft intended to strengthen the spiral tail.

Fig. 8 represents a section of the shell. A is the percussion-cap; C, the charge in the head of shell; E E, the head of the shell; F F, the metal sabot; *f*, the concave surface of the sabot; *i i*, the hollow shaft for inserting the fuse; J J, the wooden packings; *k k*, the fuse-stock; *m*, the fuse composition.

Fig. 9 represents a section of the rocket-shell. A is the percussion-cap; C, the charge in the head of the shell; E E, the head of the shell; F F, the metal sabot; *f*, the concave surface of the sabot; *i i*, rocket composition; J J, wooden packings; *k k*, the fuse-stock; *m*, fuse composition; *l*, magazine, charged with grain-powder, intended, when the fuse becomes burned out, to explode and drive the fuse-stock from the rocket, thereby igniting the rocket composition, which continues to burn and assist the flight of the projectile. The rocket composition, being in communication with the charge in the head of the shell, explodes the same when the rocket composition becomes exhausted.

What I claim in my projectile is—

The combination of a flat spiral tail with a conical head, so constructed as to form a shoulder for the wooden packings to rest against, thereby causing the head of the shell to receive the full force of the discharge of the gun, at the same time I secure the wooden packings at the extreme end by the use of a metal sabot, which sabot also protects the composition, which is pressed in the hollow shaft in the tail, intended for a rocket or to fuse the head of the shell.

BENEDICT SWAIN.

Witnesses:

GEO. H. GADDIS,

W. A. ALTEMUS.