W. H. SMITH.

Projectile.

No. 37,260. Patented Dec. 23, 1862.

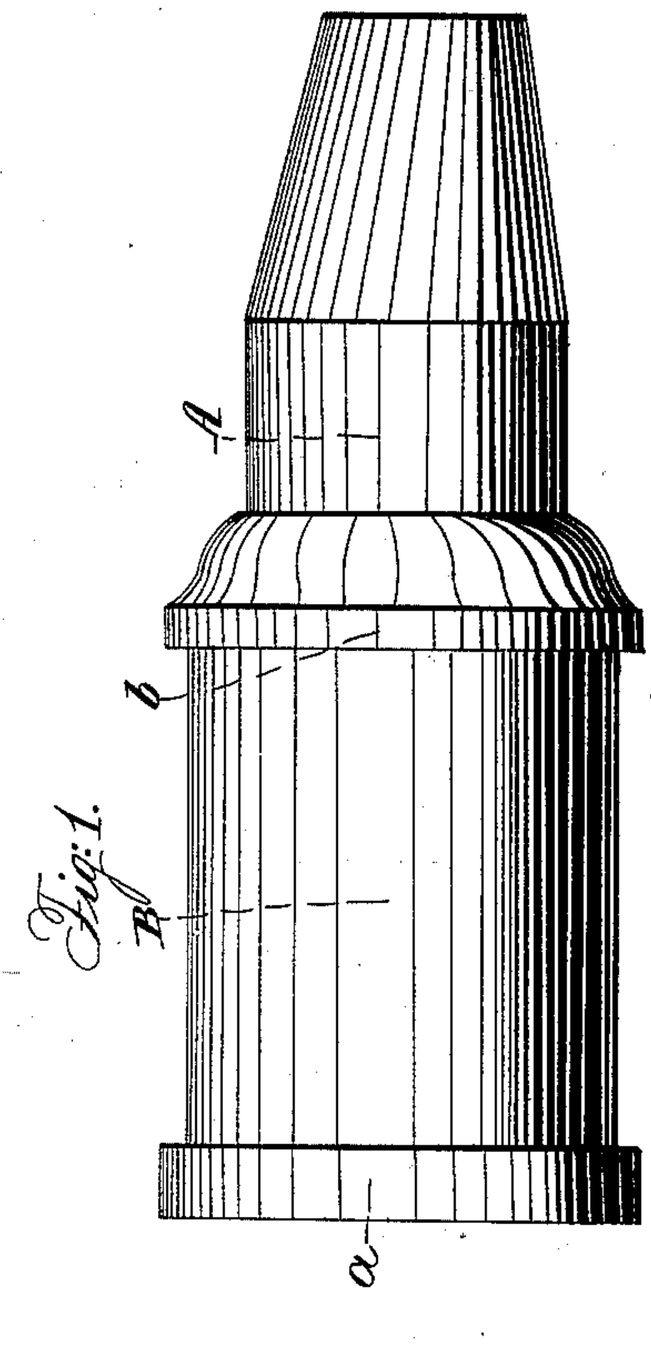

Fig: 1.

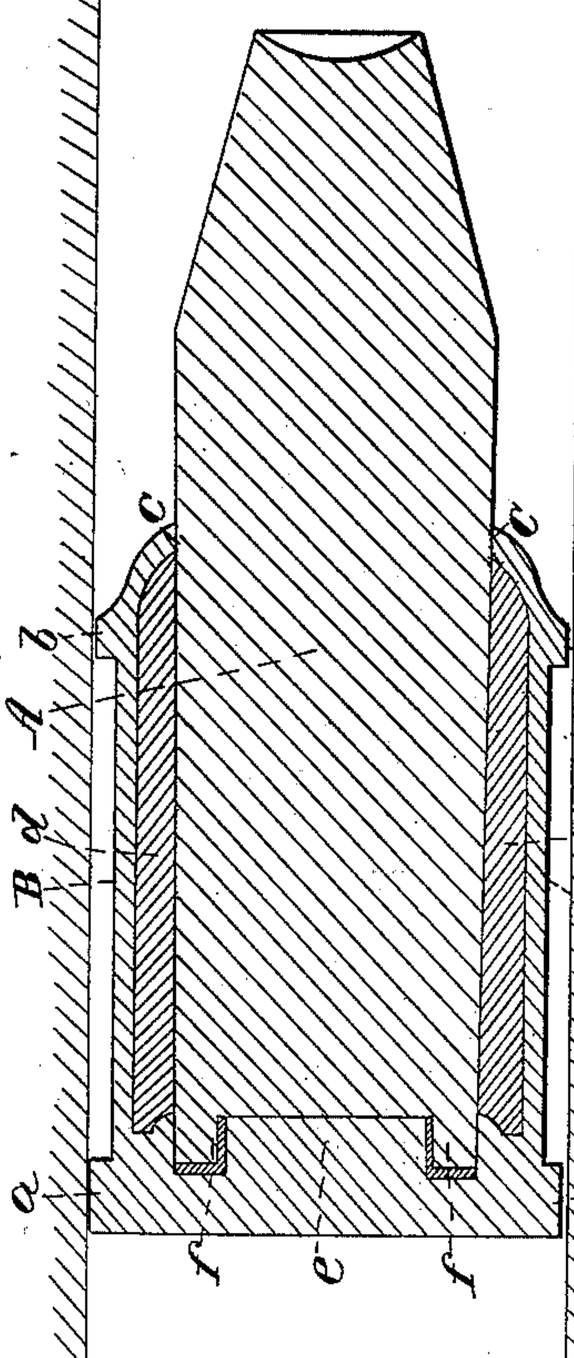

Fig: 2.

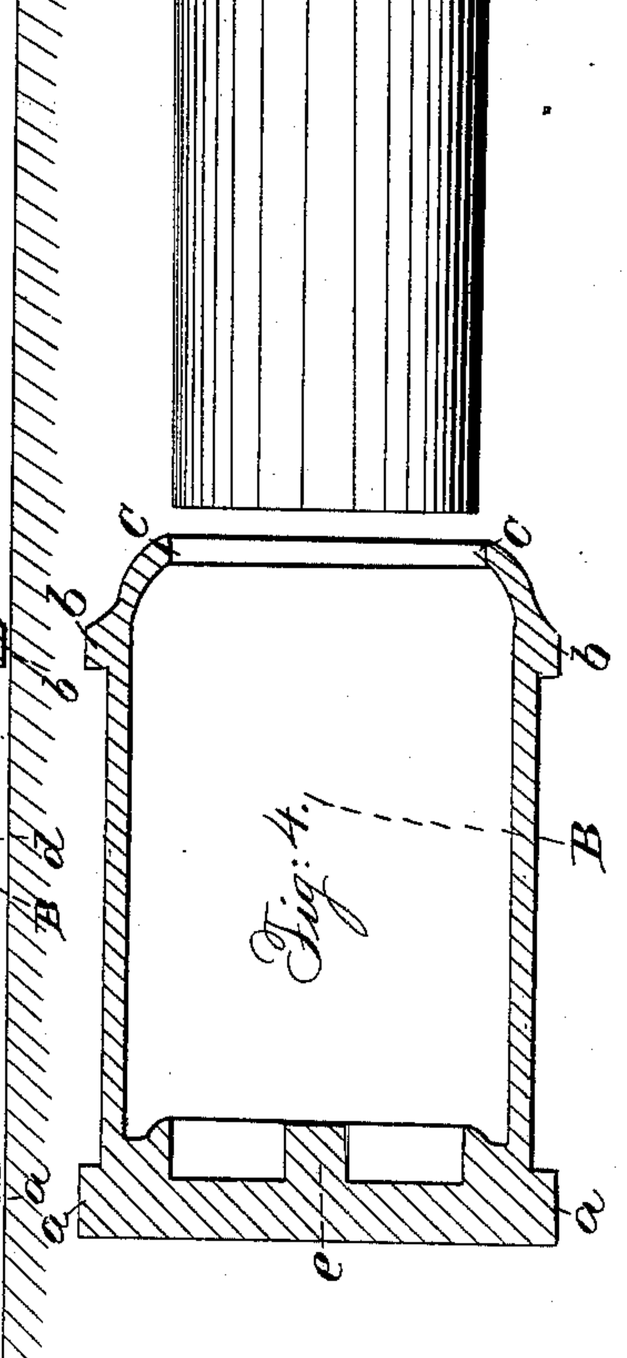

Fig: 3.

Fig: 4.

Witnesses
J. W. Coombs
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UNITED STATES PATENT OFFICE.

WILSON H. SMITH, OF BIRMINGHAM, CONNECTICUT, ASSIGNOR TO HIMSELF AND R. M. BASSETT, OF SAME PLACE.

IMPROVEMENT IN PROJECTILES FOR RIFLED ORDNANCE.

Specification forming part of Letters Patent No. **37,260**, dated December 23, 1862.

To all whom it may concern:

Be it known that I, WILSON H. SMITH, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Projectiles for Ordnance; 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, forming a part of this specification, in which—

Figure 1 is a longitudinal outside view of a projectile fitted with a jacket or case, according to my invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is an outside longitudinal view of the body or projectile proper without the jacket or case. Fig. 4 is a longitudinal central section of the jacket or case.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to projectiles which are intended to be fired from a gun having a bore of larger diameter than their own, for the purpose of concentrating within the smaller transverse sectional area of the projectile all the force obtained by the pressure of the gases of the gunpowder on the larger transverse sectional area of the bore; and it consists in a jacket or case of a novel character applied to and combined with such a projectile in such manner as to center it in the bore of the gun, to leave the gun with it, and to remain attached to it during its flight, and only to be detached by the act of the projectile striking, and after having added its momentum to the force of the impact of the projectile.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the body of the projectile, or projectile proper, which may be either solid or hollow, of cylindrical or nearly cylindrical form from end to end, or with its front end of any such form as may be considered most likely to insure penetration, but which is shown in the drawings to be very slightly tapered from its head toward its rear end, and with its head of the form of a truncated cone, having its truncated end concave.

B is the jacket or case, made to cover the rear end of and extend along the greater portion of the length of the body A. This jacket or case has a portion, *a*, of its circumference close to the bottom or rear, and a portion, *b*, near its front turned to fit easily in the bore of the gun, but having the intervening portion somewhat reduced in size, to avoid the necessity of turning it. The extreme front portion, *c*, of the interior of the jacket is bored truly, and a cavity is bored in the bottom for the reception of the body A, the exterior of which is turned to correspond, and the exterior of the turned portions *a* and *b* being concentric with the bore of its interior and fitting to the bore of the gun, the jacket or case cannot fail to center the body A in the gun. The portion of the interior of the jacket between the bored front portion, *c*, and the bottom is made of a diameter considerably greater than the body A, to form an annular space, *d*, between the body and the jacket, for the reception of rosin or other cement, by which the jacket is secured firmly to the body. On the interior of the bottom of the body there is provided a flat tongue or tenon, *e*, to enter a mortise, *f*, provided in the base of the body, to cause the jacket to impart to the body the rotary motion, which it may receive in being discharged from a rifled gun. The bottom of the jacket is close; but, as it does not fit tightly to the bore of the gun, it is intended to be furnished with a soft-metal cup or other expanding packing, for the prevention of windage, such packing also serving to obtain for and impart to the jacket and body a rotary motion in firing from a rifled gun. The rosin or other cement, in a melted or plastic state, may be poured into the jacket B in sufficient quantity while the jacket is in an upright position and on the body A, being afterward inserted into the jacket and pressed down into the bottom thereof. The cement is forced upward around the annular space *d*, provided between the jacket and body, and on its becoming set it holds the jacket so securely on the body that it will not fly off during the flight of the projectile, nor until the projectile strikes, when, by the force of concussion, it will be broken, having added its own momentum to the penetrating-power of the body A.

Instead of making the jacket B of a single

casting, it may be composed of a bottom piece and a front ring fitted to the body A, and a piece of wrought-iron or sheet-iron tubing connecting the said bottom piece and front ring.

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

The jacket or case B, constructed and combined with the body A, or projectile proper, by means of rosin or other suitable cement in its annular cavity *d*, substantially as herein specified, for the purpose specified.

WILSON H. SMITH.

Witnesses:

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WM. E. DOWNS.