W. PAGE.

Muzzle-Loading Ordnance.

No. { 2,656, / 33,660. }

Patented Noy. 5, 1861.

Fig: 1.

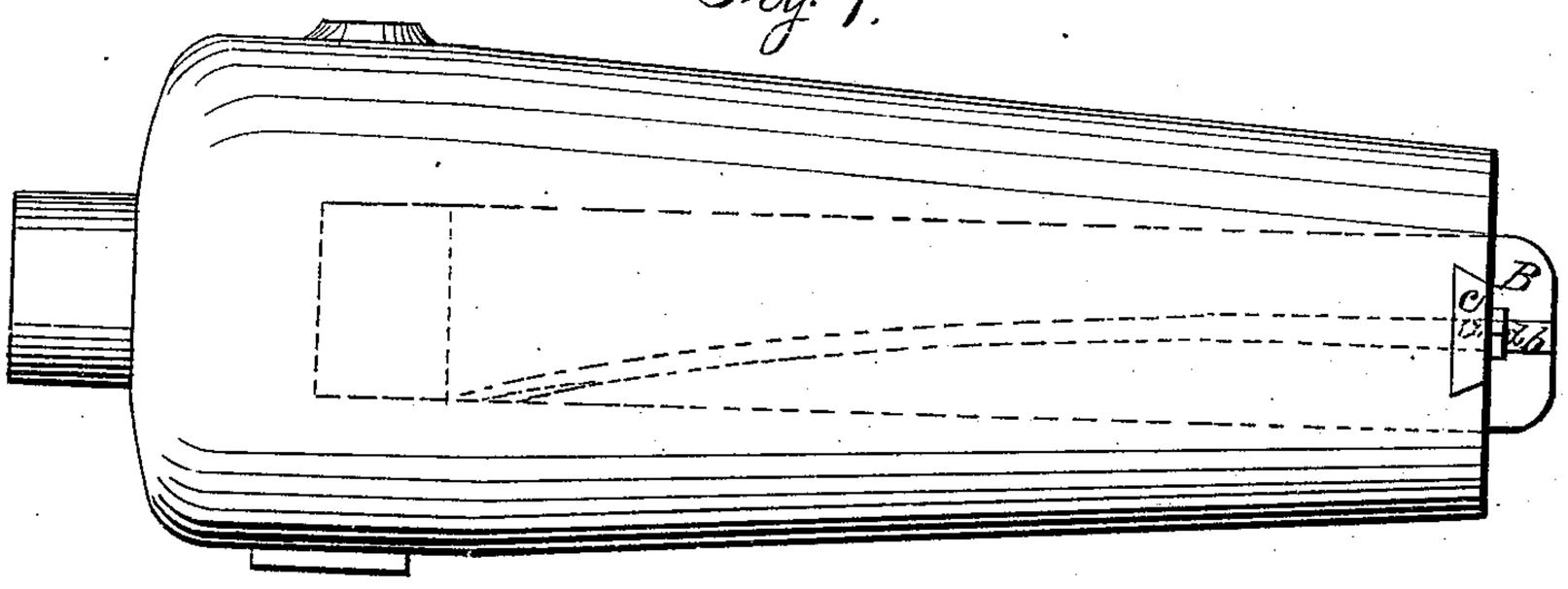


Fig: 2.

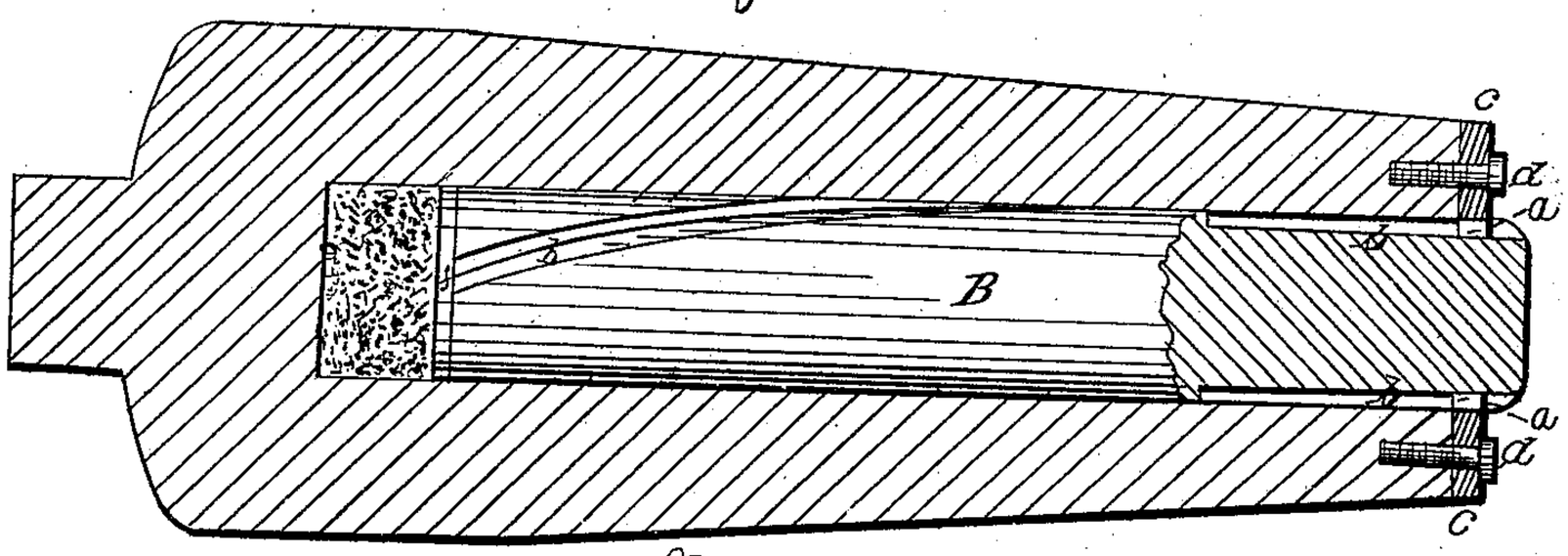
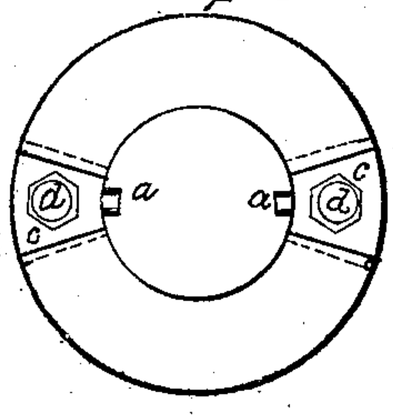


Fig: 3.



Witnesses

J. W. Reed

James Dand

Inventor.

W. Page

UNITED STATES PATENT OFFICE.

WILLIAM PAGE, OF NEW YORK, N. Y.

IMPROVEMENT IN RIFLED PROJECTILES FOR ORDNANCE, &c.

Specification forming part of Letters Patent No. **33,660**, dated November 5, 1861.

To all whom it may concern:

Be it known that I, WILLIAM PAGE, of No. 31 West Twenty-Second street, in the city, county, and State of New York, have invented a new and useful Improvement in Ordnance and Fire-Arms; 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 part of this specification, in which—

Figure 1 is a longitudinal outside view of a cannon constructed according to my invention; Fig. 2, a central longitudinal section of the same, and exhibits the projectile, partly in section, in the gun; and Fig. 3, a view of the muzzle of the gun.

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

The principal object of my invention is to obtain in a gun of smooth bore the advantages derived from a rifle bore—viz., the rotary motion of the projectile about its axis—with a less costly construction of the gun and projectile, less wear and tear of the gun, and less liability to windage.

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

The example of my invention represented in the drawings is furnished with two of the internal protuberances, *a a*, and the projectile B with two grooves, *b b;* but a single protuberance and groove may be used with good effect. The most convenient mode of constructing and applying the protuberances is to form them upon the inner ends of steel plates *c c*, which are inserted in dovetail mortises cut in the face of the muzzle of the gun, and secured in the said mortises by screws *d d*, passing through them and screwing into the gun, which is bored cylindrically in the same manner as an ordinary smooth-bore gun. The projectile may be of cylindrical form for the whole of its length, or may have a hemispherical, conical, conoidal, or other rounded or pointed form at its front extremity, and may be cast with the grooves in it, and may be solid, or have any portion of its length hollow. The width of the grooves *b b* should be such that the protuberances *a a* will fit them easily.

The projectile is intended to be constructed of such a length that the protuberances will be within the front end of the grooves in the projectile when the cannon or piece is loaded and ready for firing.

This invention is applicable to various kinds of small-arms as well as to ordnance. I propose generally to make the barrel shorter than is customary in most of the pieces in common use, to avoid making the projectile so heavy as to cause the bursting of the piece. I propose to employ between the charge of powder and the projectile an expanding wad, *f*. This may be composed of leather, india-rubber, metal, or other suitable material, and should be of such construction as will enable it to be inserted easily, but as to cause it to fit snugly to the bore in the discharge of the gun, and thereby prevent windage both around the cylindrical portion of the projectile and through the grooves *b b*. In the discharge of the projectile the grooves *b b*, passing along the protuberances *a a*, will cause it to derive a rotary motion about its axis as effectively as though the gun were rifled and the projectile furnished with hard-metal fins, while windage is more effectually prevented than it can be in the use of a projectile of the last-mentioned kind.

One advantage of my invention consists in its applicability to old smooth-bore guns of all kinds. Its application to such guns does not weaken them like rifling their bores, and is much less costly than rifling. Another advantage consists in the fact that the protuberances, when worn out, can be easily replaced by new ones, and the gun is then, so far as the provision for the rotary motion of the projectile is considered, as good as new again.

I do do not claim, broadly, the giving of rotation to projectiles by having projections arranged within the muzzle of the gun.

I will remark that I am aware that guns have been made with internally-projecting ribs of spiral form extending the whole length

of the bore, intended as substitutes for grooves, to give rotary motion to projectiles; and I do not claim such projections.

I do not claim, singly, either the pins or protuberances placed at or near the muzzle of the gun, or the spiral grooves or channels cut along the sides of the cylindrical bolt or projectile; but

I do claim—

The combination and use of both pin and spiral groove, as herein described, by which the rotation of the projectile on its axis is secured in its passage throughout the smooth bore of the gun.

WM. PAGE.

Witnesses:
G. W. REED,
JAMES LAIRD.