H. E. DIMICK.
Rifled Ordnance.

No. 16,377.

Patented Jan. 13, 1857.

Fig. 1.

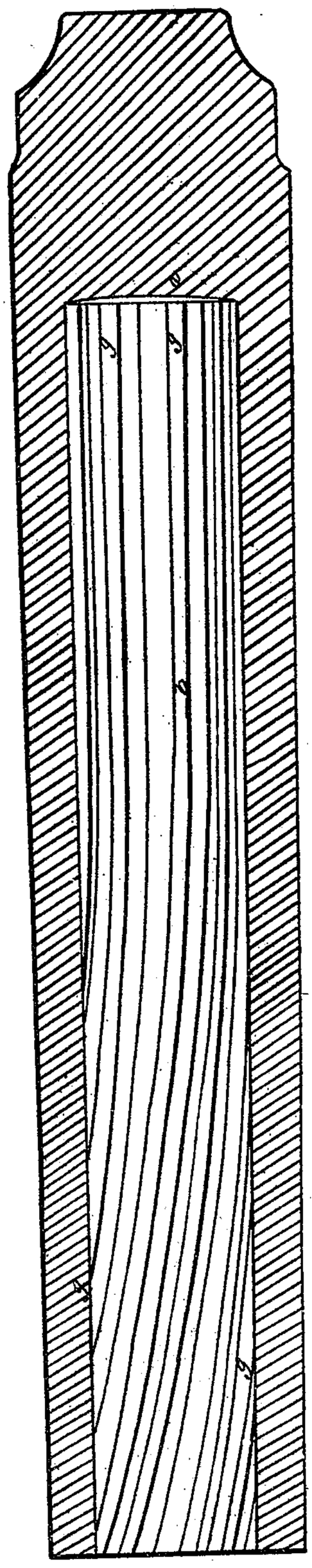

Fig. 2.

UNITED STATES PATENT OFFICE.

HORACE E. DIMICK, OF ST. LOUIS, MISSOURI.

IMPROVED MODE OF RIFLING ORDNANCE.

Specification forming part of Letters Patent No. **16,377**, dated January 13, 1857.

To all whom it may concern:

Be it known that I, HORACE E. DIMICK, of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and useful Improvement in Rifled Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of a gun constructed, as I propose. Fig. 2 is an end view of gun showing bore.

Similar characters of reference in the several figures denote the same part of the gun.

The nature of my invention consists in cutting the grooves straight from the base of the bore to about the distance of the trunnions, where the requisite twist shall begin, and, in combination with this manner of grooving, giving the gun what is termed a "freed bore" of from one-hundredth to one-tenth of an inch, depending on the caliber, freeing the grooves to double the extent of the bore. The object of this construction is to prevent the rotation of the projectile until it shall have acquired its average velocity, thus allowing it a simple motion of translation while it is passing along the straight grooves, and receiving its rotation while passing from thence to the muzzle, the freed bore causing the windage to be due to the gun, while at the muzzle there will be a close contact between the projectile and bore, sufficient to insure accuracy.

The construction claimed is illustrated by the drawings, where the grooves *g* run straight from *a* to *b*, the twist then commencing and extending to the muzzle. This twist may be progressive or uniform, as found best from experiment. The bore will gradually enlarge from muzzle to base of bore, from one-hundredth to one-tenth of an inch, depending on the caliber, the grooves increasing in depth at about twice that rate. This character of bore I design for the discharge of iron projectiles without patch or covering, and also of expanding projectiles. The grooves I design to employ will be obtuse-angular, though other forms may be used. The straight grooves at the base of the bore prevent the projectile from being acted on by two forces at the commencement of its motion, which is liable to injure the gun; but by allowing the forward movement of the projectile until it has acquired its average velocity it may then be caused to rotate on its axis without that danger to the gun which exists with the ordinary mode of grooving. The freed bore which I employ enables the character of projectile above mentioned to be used, the diminution at the muzzle insuring the accuracy of flight after the projectile leaves, and the enlargement toward the base giving facility of loading, favoring the action of expansive projectiles, and furnishing the requisite windage. With this construction I am enabled to apply the rifle principle to heavy ordnance with far more effect than has yet been accomplished.

I make no claim to what is termed a "freed bore," separately considered, or to the obtuse-angular grooves; but

I claim—

A system of straight grooves extending from the base of the bore to about the position of the trunnions, and twisting from thence to the muzzle, in combination with a freed bore, substantially as described, as an improved mode of applying the rifle principle to ordnance.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

HORACE E. DIMICK.

Witnesses:

GEO. PATTEN,

JOHN S. HOLLINGSHEAD.