

A. E. BURNSIDE.
Muzzle-loading Ordnance.

No. 17,261.

Patented May 12, 1857

Fig. 1.

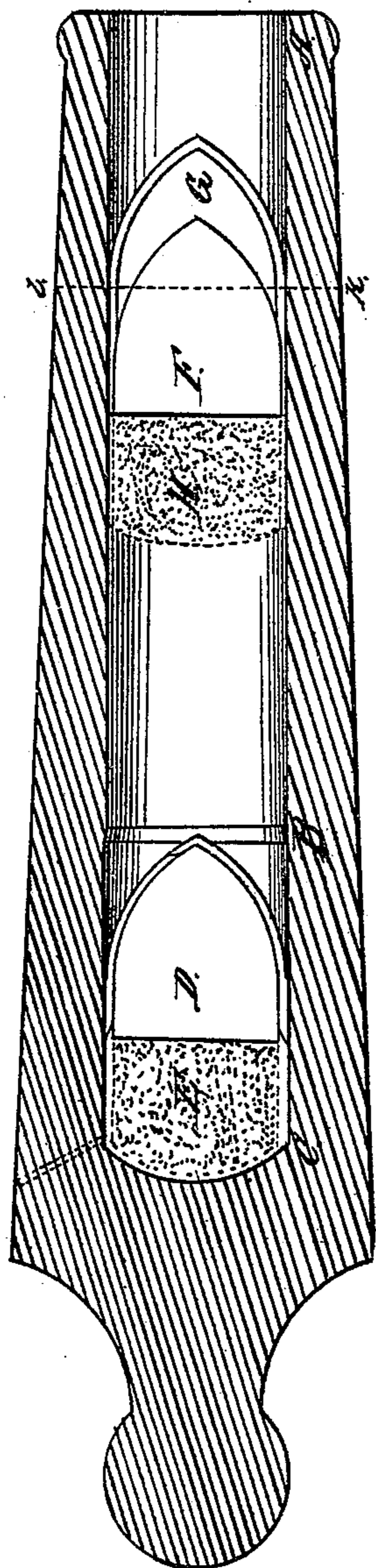


Fig. 2.

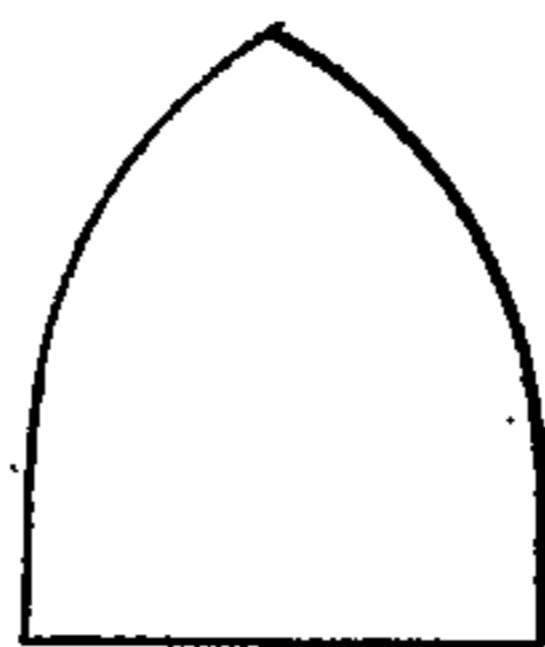


Fig. 3.

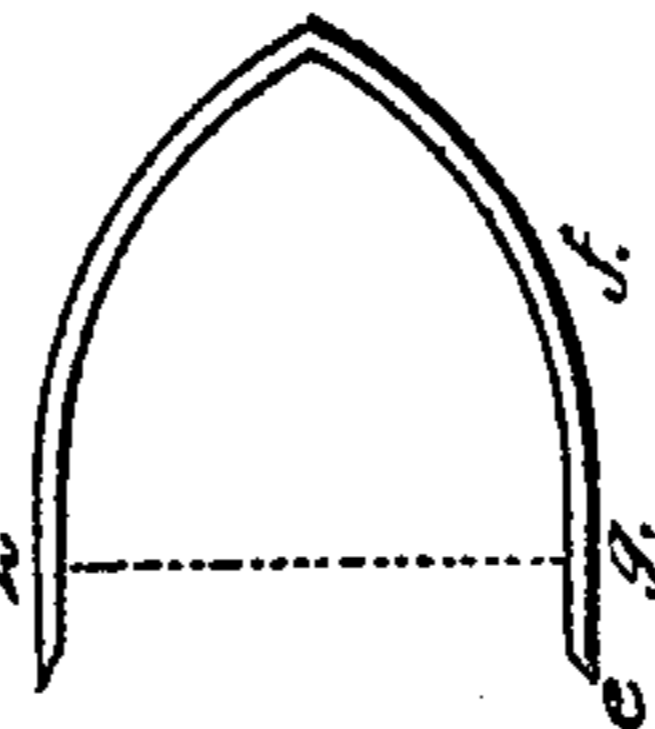


Fig. 4.

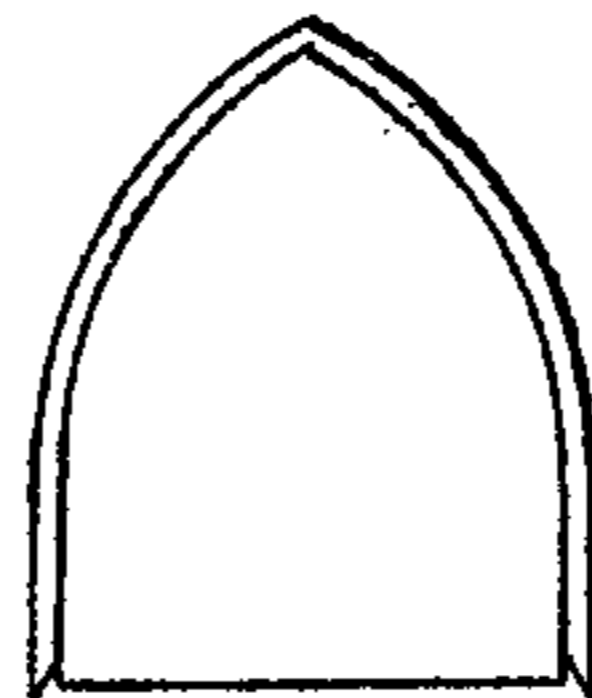


Fig. 5.

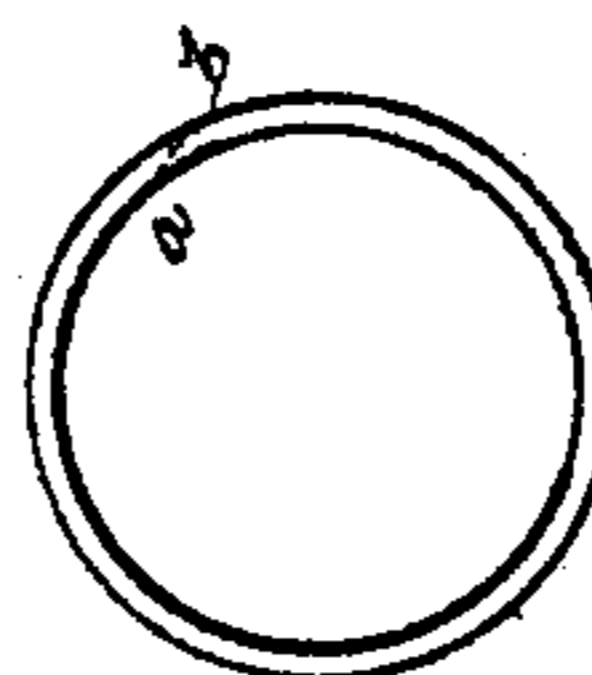
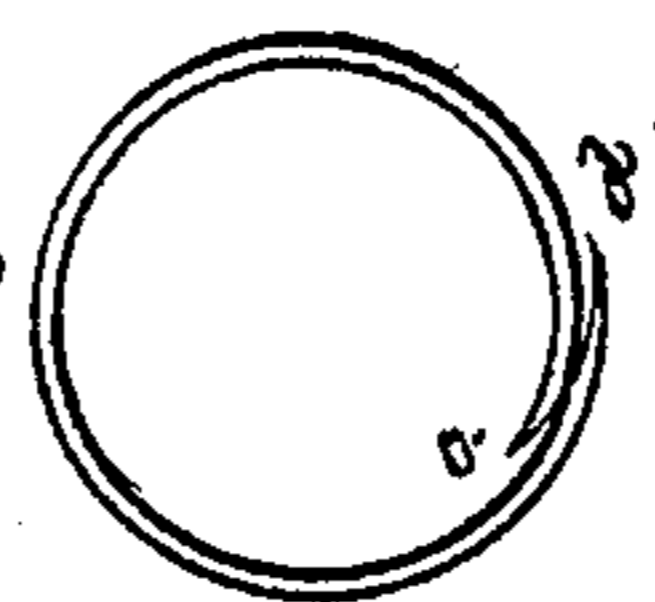


Fig. 6.



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UNITED STATES PATENT OFFICE.

AMBROSE E. BURNSIDE, OF BRISTOL, RHODE ISLAND.

IMPROVED MODE OF OVERCOMING THE WINDAGE IN FIRE-ARMS.

Specification forming part of Letters Patent No. 17,261, dated May 12, 1857.

To all whom it may concern:

Be it known that I, AMBROSE E. BURNSIDE, of Bristol, in the county of Bristol and State of Rhode Island, have invented a new and useful Mode of Preventing Windage in Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of specification, in which—

Figure 1 is a longitudinal section through the axis of a cannon, showing the ball F as it moves down the bore, the cap G as it follows the ball, and the ball D covered by the cap G after it reaches the chamber. Fig. 2 represents a longitudinal section of the ball F; Fig. 3, the same section through the cap G, and Fig. 4 a section through the axis of the ball with a cap on. Fig. 5 is a cross-section of the cap in Fig. 3 through the line *g h*. Figs. 6 is a cross-section of cap compressed for the purpose of putting it in the bore of the gun through the line *k l*, as shown in the cap G in the bore.

My invention consists in enlarging the chambers of the cannon, as from C to B in Fig. 1, rifling the cannon from the enlarged part to muzzle from B to A, then enlarging the ball F after it reaches the chamber by means of the cap or patch G, that exactly fits the ball, that cap to be made of stout leather, a sheet-metal cap with leather over it, or a sheet-metal cap made of well-annealed sheet-iron, copper, or brass, or any malleable or flexible material of sufficient strength. The ball enlarged is shown at D, Fig. 1. It is apparent that this ball, enlarged by the cap in being forced out by the charge, will act as a leaden ball in a breech-loading rifle—that is, a part of the surface of the cap will be compressed, so as to follow the “lands,” and the remaining surface pressed out so as to follow the grooves. Therefore, if the ball and cap combined are of proper size—that is, somewhat larger than the bore—all windage will necessarily be prevented and as a consequence, the ball will receive a twisting motion in passing out. Fig. 2 explains the shape of the ball. The cap or patch needs a more minute description. The cap represented by Fig. 3 is first made so as to exactly set over the ball, as in Fig. 4. It can be struck up in dies

without a seam, or can be made with a seam, as in the model. If made entirely of metal, it is best to have it without seam or joint. After the cap, Fig. 3, is struck up, you then cut a slit in it in the direction from *c* to *f*, Fig. 3, the slit not being in a plane passing through the axis of the cap, but in plane parallel to the axis, and passing through the line *a b* in the cross-section represented in Fig. 5. It is evident that that cap can be compressed so that a cross-section of it through the line *k l*, Fig. 1, would be represented by Fig. 6.

Operation: Take a cannon in the position of loading, insert the charge H, Fig. 1, in the bore, then the ball F, then compress the cap G and insert it, and ram them all home. The ball will push the charge down, and as the cap cannot pass over the ball while the ball remains in the bore (as the ball with cap over it is somewhat larger than the bore,) by pressing the rammer-head upon the cap the charge, ball, and cap will pass down the bore, as represented by H F G, Fig. 1, until they reach the enlarged chamber, when the cap will pass over the ball, and the cannon is charged as represented by E D, Fig. 1. The ball and cap there combined are a trifle larger than the bore, and you have in your chamber a ball that is somewhat larger than the bore, said ball having a malleable or soft surface capable of being compressed so as to conform exactly to the bore when it is forced out, thereby preventing windage. It will operate in the model as described above. The rammer-head should be made to conform to the shape of the cap. The model is not rifled, and has a movable breech-pin for the purpose of getting the ball out after the cap is rammed over it.

The drawings represent the cannon at the breech as it should be.

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

1. The cap or patch which covers the ball or shell, said cap not being permanently attached to the ball, substantially as herein set forth.

2. I do not make the broad claim of enlarging the ball by expansive materials; but I do claim the enlarging of the cannon ball or shell

after it reaches the enlarged chamber of a cannon by means of a cap or patch of soft expansive material—such as leather, malleable metal, or the two combined—in order that the ball and cap together may be some larger than the bore, and therefore prevent windage in passing out of the bore, substan-

tially as herein set forth, for the purposes described.

A. E. BURNSIDE.

Witnesses:

ANGUS MACDOUGALL,
JOSH. SWISS.