

L. H. GIBBS.
Projectile.

No. 21,924.

Patented Oct. 26, 1858.

FIG. I

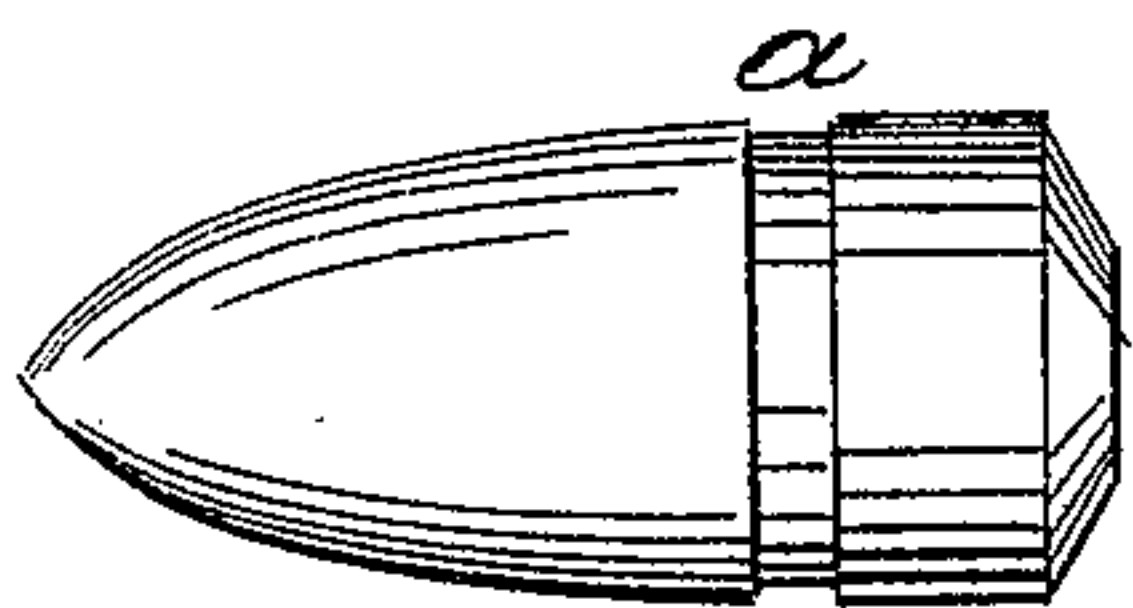


FIG. II

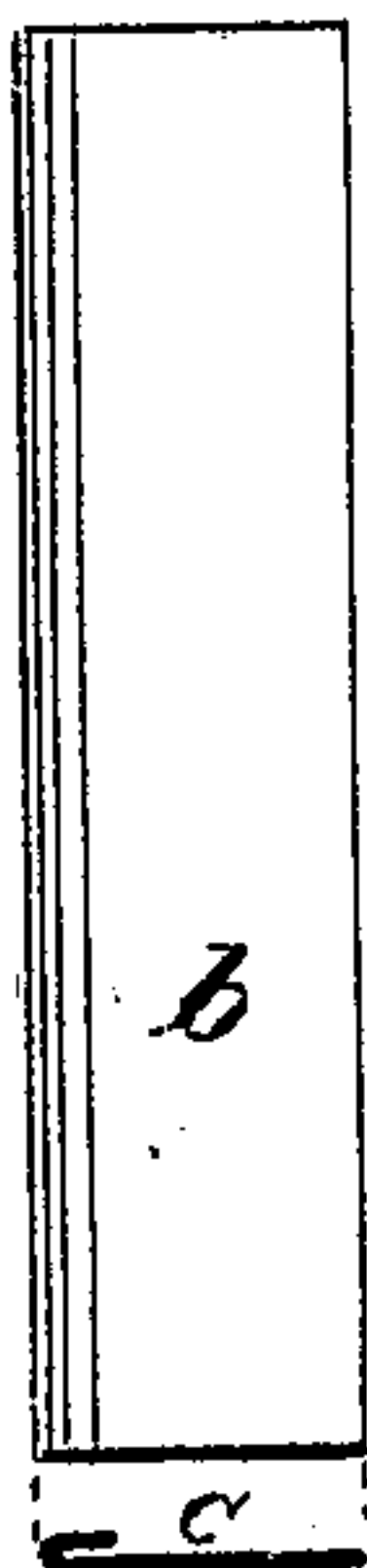


FIG. III

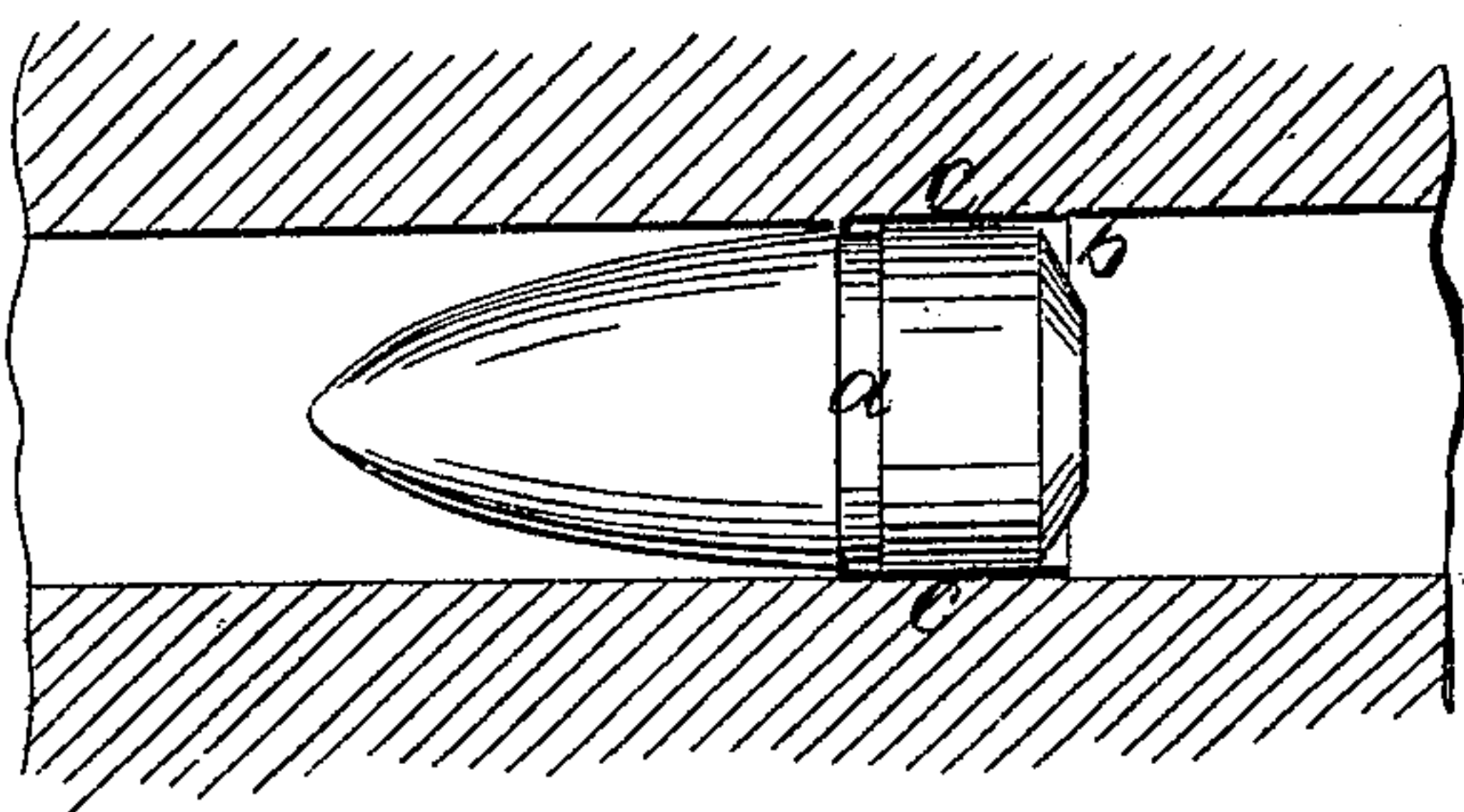
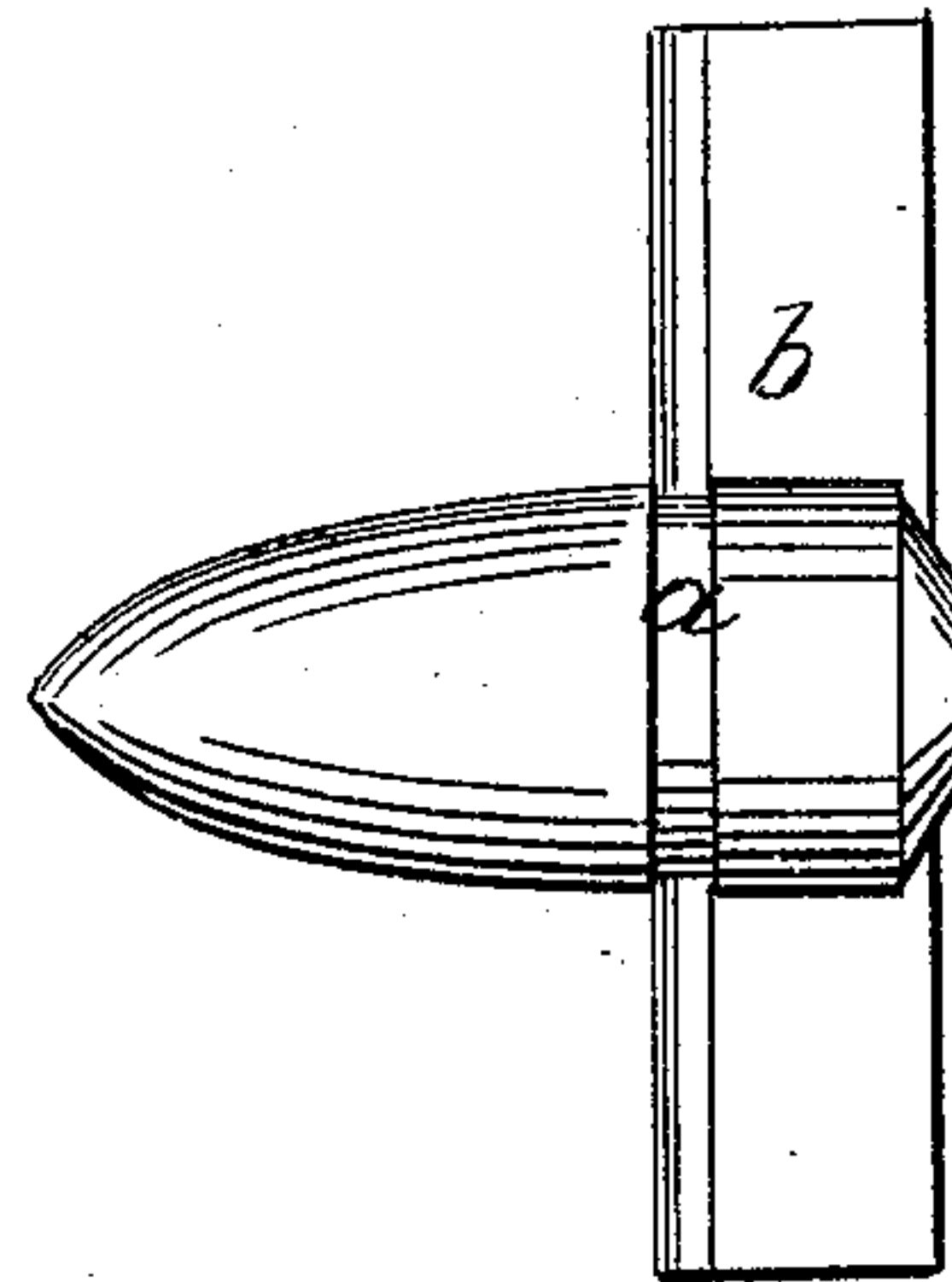


FIG. V

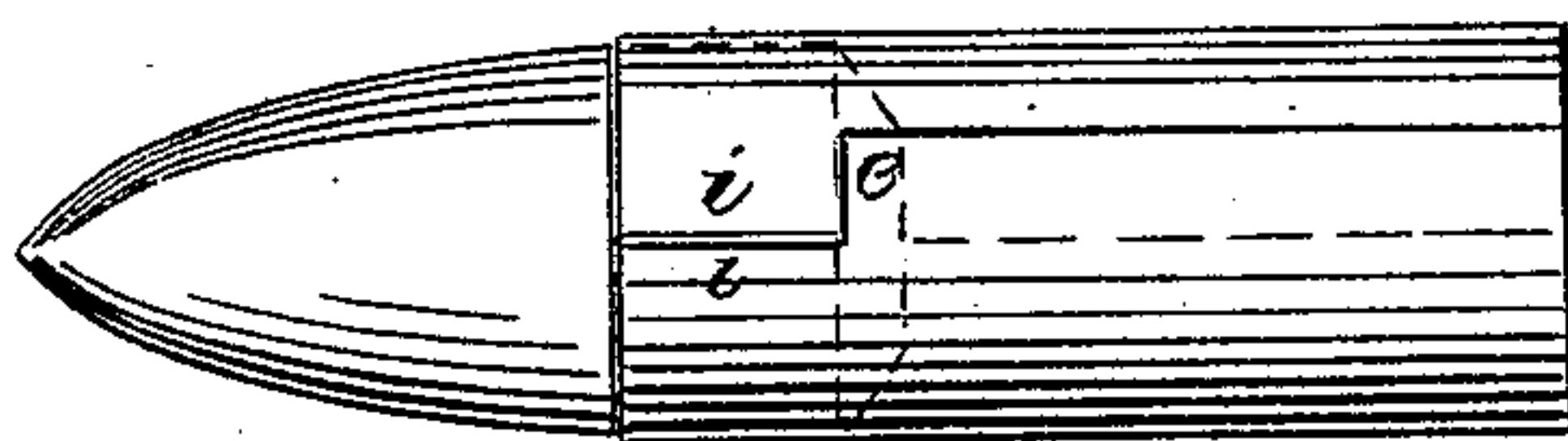


FIG. IV

UNITED STATES PATENT OFFICE.

L. H. GIBBS, OF NEW YORK, N. Y., ASSIGNOR TO THE GIBBS ARMS COMPANY, OF SAME PLACE.

IMPROVEMENT IN PATCHING BALLS FOR BREECH-LOADING RIFLES.

Specification forming part of Letters Patent No. 21,924, dated October 26, 1878.

To all whom it may concern:

Be it known that I, LUCIUS H. GIBBS, of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Projectiles Particularly Adapted to Breech-Loading Guns; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawings, making part of this specification, which are fully described herein, and in which similar letters indicate similar parts throughout the figures.

My invention has for its object the employment of a patch for the "picket" or conical ball now generally preferred, whereby a patched ball may be used with breech-loading arms to as much advantage as is realized by the ordinary mode of patching for muzzle-loading guns; and it consists in a method of so constructing the patch and the ball and affixing the said patch upon the ball that the patch will not cover any portion of the ball except that part which would otherwise be in contact with the bore. When a rifle is loaded from the muzzle, no difficulty is found in properly patching the ball to secure the required points—viz, that the patch shall fit so closely as to take into the grooves and cause the desired revolution of the ball upon its major axis; that it shall be interposed at all bearing parts between the metal of the ball and of the bore; and that it shall readily part from the ball as soon as that has passed out of the gun, since, unless it does so, the ball will be deflected out of its proper line of flight.

The construction will be as follows: Around the conical or elongated ball of the otherwise usual form I make a shallow and narrow groove, as seen at *a* in Figure I, and this is at the part where the ball begins to taper, as shown. The patch is a piece of linen cloth, though some other materials may serve as well, and it is cut to a length which will just form a band around the large part of the ball without lapping over. The upper edge of this is turned over, as seen in Fig. II, wherein *b* is a front view, and *c* an end view, of said patch. It is of such width that when the folded part is put into the groove in the ball the linen will

extend as far as, or a little beyond, the rear end of the ball, as seen in the sectional Fig. V. The groove should be made of a depth equal only to the thickness of the linen employed, and the width of the groove and of the folded part of the linen should be the same. A little paste having been first put upon the lower part of the ball, as well as into the groove, the folded part of the linen is placed in the groove, as seen in Fig. III, and the ends are brought up together, so as to form a butt-joint. The bearing-surface of the projectile is thus completely covered by the patch.

Breech-loading rifles are usually "counter-bored" or enlarged a little for a short distance at the breech by cutting away the "lands" to the depth of the grooves, or even more, as preferred by many, the difference being gradual, rather than abrupt, in order that the ball may be "slugged" in firing, in a manner well known.

Fig. V is a longitudinal central section of a barrel thus formed, and it will be seen that when the projectile, patched as above set forth, is placed in it, so that the patched part will just fill the enlarged portion of the bore, the forward movement of the ball into the smaller part will have the effect to cause the patch to adhere more certainly, since the folded part is then compressed more closely into the groove. That pressure is removed the moment the ball passes out of the barrel, and as it is found in practice that the compression destroys entirely the adhesiveness of the paste, the paste patch from the ball and always falls to the ground within a few feet of the muzzle.

I am aware that cartridges for breech-loading guns have been heretofore made of linen or similar material, and the ball affixed in the upper end thereof by having a semicircular groove around the base of the ball, into which the linen is forced by a string tied around the ball, and thus sunk below the general surface; but in firing, the linen which is so secured is often left in the enlarged part of the bore by reason of its drawing out from under the string; or if it adheres sufficiently to go through the barrel it will not be dropped off at the muzzle. My method of patching affords, however, a ready means of making cartridges, for it is only necessary to extend

the patch behind the ball, as shown in Fig. IV, to such distance as will enable it to contain the proper quantity of powder. The rear end is closed with a cap of paper, and the part of the linen below the ball should lap over, as seen at *e*, although, as before stated, the part constituting the patch makes a butt-joint, as at *i* in same figure.

It will be obvious that a cartridge may in this way be formed upon a "Minié" or expanding ball, to be used with a muzzle-loading arm; or, indeed, that such a ball may be patched, as above described, and still be charged into the muzzle, inasmuch as these balls are not required to fit tightly in going down.

When the ball, patched according to my

method, is used in a breech-loading gun without having a cartridge attached, as in some kinds of those will be particularly desirable, it will only be necessary to use a short rammer to insert the ball to the full distance of the enlarged part of the bore, and then the proper charge of powder may be poured in behind it and the breech be closed.

I claim as of my invention—

The method of patching a rifle-ball, substantially as is herein set forth.

LUCIUS H. GIBBS.

Witnesses:

J. P. PIRSSON,

S. H. MAYNARD.