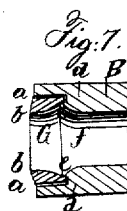
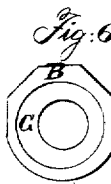
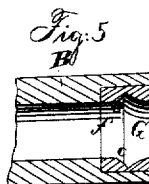
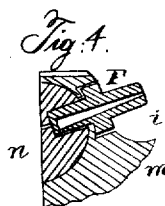
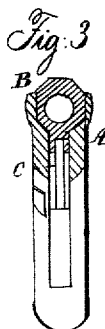
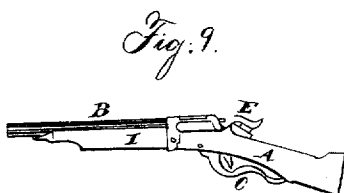
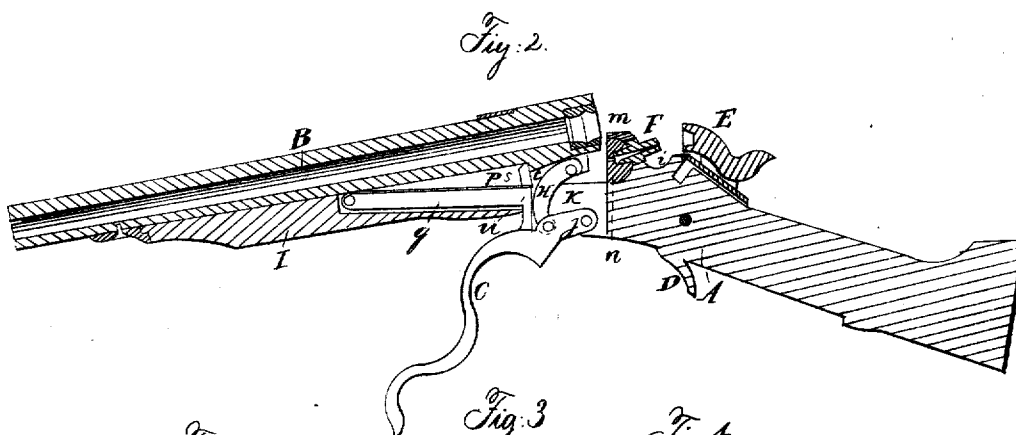
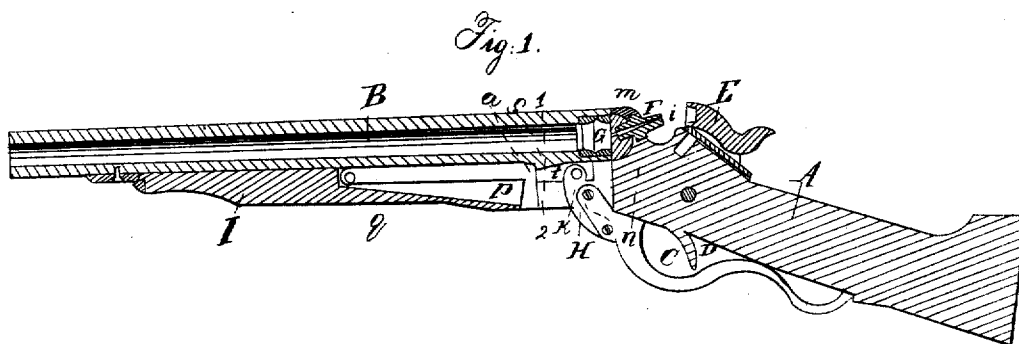


### Breech-Loading Fire-Arm.

Patented Jan. 25, 1859.



*Witnesses.*

Henry Howson  
Henry Odierne

Christian Sharps

# UNITED STATES PATENT OFFICE.

CHRISTIAN SHARPS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 22,752, dated January 25, 1859.

*To all whom it may concern:*

Be it known that I, CHRISTIAN SHARPS, of the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to that class of fire-arms in which the end of the barrel is removed from the breech for the purpose of inserting the cartridge; and my invention consists in forming on the outer end of a bush which is arranged to fit into and slide within a recess in the end of the barrel, an annular inclined projection with a sharp annular edge coinciding with the smallest portion of the bore of the bush, so that when the explosion of the cartridge takes place no obstacle may be presented to the backward movement of the bush, as fully described hereinafter. This bush has an annular termination fitting into an annular recess in the barrel, said termination being overlapped by a sharp annular projection, as fully described hereinafter, so as to prevent the penetration of any refuse matter between the end of the bush and the barrel when the discharge takes place, and so as to clear away all refuse matter which may adhere to the termination of the bush. A concave base is fitted into a concave recess in the breech in such a manner that the said base may be self-adjusting to the end of the barrel, and thereby insure an accurate fit and prevent leakage when the discharge takes place.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a longitudinal section of sufficient of a breech-loading fire-arm to illustrate my improvements; Fig. 2, a sectional view with the barrel elevated; Fig. 3, a transverse section on the line 1 2, Fig. 1; Fig. 4, an enlarged view of the self-adjusting base of the breech; Figs. 5, 6, 7, and 8, enlarged views of the inner end of the barrel with the sliding bush; Fig. 9, an exterior view of Fig. 1, drawn to a reduced scale.

Similar letters refer to similar parts throughout the several views.

A is the stock of the fire-arm; B, the barrel; C, the trigger-guard; D, the trigger; E, the hammer, and F the nipple.

As the hammer and trigger, as well as the appliances connected therewith, form no part of my present invention, a description of them will be unnecessary.

A recess is formed in the rear end of the barrel for the reception of the bush G. (See Figs. 5, 6, 7, and 8.) The outer end of this bush forms an annular inclined projection, the sharp edge of which extends beyond the barrel, the inclination commencing at the outer edge, *a*, which coincides, or nearly so, with the end of the barrel, and terminates at the sharp annular cutting-edge *b*, which coincides with the smallest part of the bore of the bush. From the latter point the curved interior of the bush gradually increases in diameter, the curve meeting the straight annular projection *c*, Fig. 8, in which the bush terminates.

An annular recess, *d*, is formed in the interior of the barrel, for the reception of the annular projection *c* on the inner end of the bush. The bore of the barrel near its inner end, *f*, increases in diameter with a gentle curve and terminates at the sharp edge of the annular projection *e*, by which the recess *d* is bounded on the inside.

Instead of the recess *d* and projection *e* forming a part of the barrel, as in Fig. 7, they may be formed by a metal bush driven tight into the barrel, as seen in Fig. 5.

By the above-described arrangement the requisite enlarged chamber is formed in the end of the barrel for the reception of the cartridge, and for the expansion of the gases when the explosion takes place. The nipple F is screwed into a convex block, *n*, which fits into a recess of corresponding form in the breech *m*. Both the nipple and the block are maintained in their proper position in respect to the breech by a collar, *i*, on said nipple, the collar fitting into a recess in the breech, and the said recess being sufficiently large to allow the block *n* a slight rolling movement only in any direction within its socket. The collar *i* is concave on the inside, and fits against a convex bearing in the breech, so that the nipple

may follow the movement of the block, which thus assumes the character of a self-adjusting base for the breech. The end of the trigger-guard C is hung to a pin, *j*, which passes through the stock and through a recess, *k*, formed in the stock, for the reception of the end of the trigger-guard and of the rod H, one end of which is jointed to the guard, and the opposite end to a projection, *t*, underneath and near the end of the barrel. A rod, *q*, which projects from the stock, is jointed to a projection on the under side of the barrel, which is thus allowed to vibrate to a limited extent on the end of the rod. A shoulder, *s*, on the under side of the barrel, as well as the projection *t*, fits against a shoulder on the stock and into the openings *k* when the barrel is down. When the barrel is raised to the position shown in Fig. 2, the cartridge may be readily inserted. When the trigger-guard is drawn toward the stock, and the barrel consequently brought down, the shoulder *s*, fitting against the shoulder *u*, and the annular projection *b* of the bush G bearing against the self-adjusting base *n* of the breech, the fire-arm is ready for being discharged. The instant the explosion takes place a momentary outward impulse will be imparted to the bush G, and at the same time the breech will yield to a slight extent. The bush being thus forced against the breech will form a joint, the accuracy and tightness of which is rendered certain by the sharp annular projection on the bush and by the self-adjustability of the base *n*. Should the end of the bush which bears against the breech be flat, the gases at the moment of the explosion would tend to penetrate between the flat end of the bush and the breech, and thus have an area to press against sufficient to counteract the tendency of the bush to move outward; hence the advantage of the sharp annular projection *b* coinciding with the smallest portion of the bore of the bush. This sharp projection has the further advantage of being enabled at the instant of the explosion to cut through any obstacles that may be presented on the breech. It will thus be seen that the gases cannot escape between the end of the barrel and the breech—the point which in other breech-loading fire-arms is apt

to be leaky, and consequently to detract from the explosive effect of the cartridge. Particles of dirt, too, are apt to collect in the chamber at the end of the barrel, and these would penetrate between the end of the bush and the collar of the barrel at the time of the explosion, and consequent outward movement of the bush, should the bush be made flat at the end, and these particles would of course prevent the bush from returning to its proper position after the explosion takes place, thus presenting an obstacle to the accurate fit of the barrel against the breech. The arrangement illustrated in Figs. 5, 6, 7, and 8 obviates this difficulty, for as the sharp edge of the annular lip *e* on the barrel overhangs the inside of the annular projection *c* of the bush at all times, it must prevent the particles of dirt from entering the annular recess *d* of the barrel, and whatever refuse matter may collect on the uncovered portion of the inside of the annular projection *c* of the bush at the moment of the explosion and outward movement of the bush; that refuse matter will, on the restoration of the bush to its position, be scraped off by the sharp-edged annular projection *e* of the barrel.

I claim and desire to secure by Letters Patent—

1. Forming on the outer end of the sliding bush G, as the sole bearing-point against the breech, an annular inclined projection with a sharp annular edge, *b*, coinciding with the smallest portion of the bore of the said bush, as and for the purpose herein set forth.

2. The annular termination *e* of the sliding bush fitting into an annular recess, *d*, formed in the barrel and overlapped by the sharp-edged annular projection *e*, substantially as herein set forth, and for the purpose specified.

3. The convex base *n*, as fitted into a concave socket in the breech, so as to form a self-adjusting base for the end of the barrel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTIAN SHARPS.

Witnesses:

HENRY HOWSON,  
HORACE SEE.