A. E. BURNSIDE.

BREECH LOADING FIREARM.

No. 14,491. Patented Mar. 25, 1856.

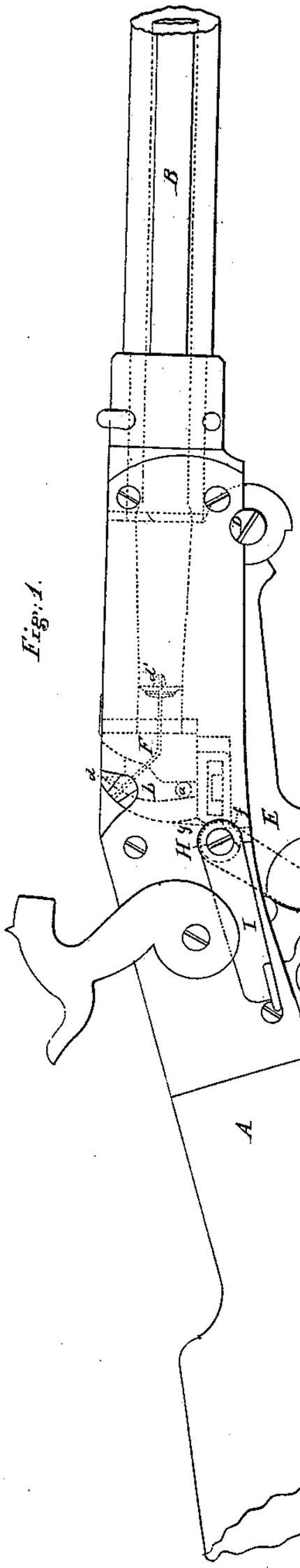

Fig: 1.

Fig: 2.

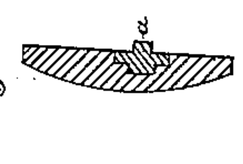

Fig: 6.

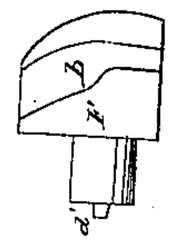

Fig: 4.

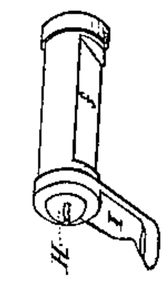

Fig: 5.

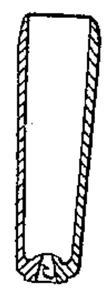

Fig: 3.

UNITED STATES PATENT OFFICE.

AMBROSE E. BURNSIDE, OF BRISTOL, RHODE ISLAND.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 14,491, *dated March* 25, 1856.

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 certain new and useful Improvements in Breech-Loading Fire Arms, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, part of this specification, in which—

Figure 1 is a side view of a rifle with my improvements attached; Fig. 2, a longitudinal section through the same, with the breech pin or chamber swung away from its seat; Figs. 3, 4, 5, and 6, details to be referred to hereafter.

The chief difficulty experienced in the construction and use of breech-loading fire-arms arises from the tendency of the discharge to open the joint between the barrel and the breech piece or chamber, the two being forced in contrary directions by the explosion, and however exact the workmanship or strong the parts are made the open joint will leak and the bearing-surfaces are soon fouled. To remedy this inconvenience is the object of my invention, which consists in the use of a cartridge-case made wholly or partially of soft metal, which remains within the chamber or breech-piece when the piece is discharged and which is expanded by the force of the explosion into or against the open joints between the barrel and the breech piece, chamber, or breech-pin, and effectually prevents leakage by packing the joints. My invention also consists in a movable or sliding cone-seat or breech-pin by means of which the empty cartridge-case is expelled or loosened from the breech piece or chamber after the discharge.

To enable others skilled in the art to understand my invention, I will proceed to describe the manner in which I have carried it out.

In the accompanying drawings, A is the stock, B the barrel, C the movable breech piece or chamber, which is pivoted at D, and is secured to the lever E, by which it is operated. F is a movable cone-seat or breech-pin, to which a slight motion in the direction of the axis of the barrel is communicated in the following manner: *b* is a groove in one side of the cone-seat or breech-pin, in which plays a pin, *a*, projecting from the stock. This groove is so formed that when the breech piece or chamber is returned to its place, the cone-seat is drawn back to its greatest distance, as seen dotted in Fig. 1; in this position the nipple *d* is brought immediately beneath the hammer and ready to receive its blow. As the breech-piece or chamber is withdrawn, the cone-seat is advanced farther into it, as seen in Fig. 2, for a purpose that will be presently explained. The construction and operation of the soft-metal cartridge case will now be explained: Fig. 3 is a section through one of the cases as it is cast and before it is charged. The hole *c*, for the entrance of the cone *d'*, is closed with varnished paper or tin-foil, and the powder is introduced, as seen in Fig. 2; the ball having been well tallowed is then inserted and the case is closed around it by pressure applied by hand or in a suitably-formed press or swage. In lieu of being formed entirely of soft metal, the cartridge-cases may be made of sheet copper, iron, or other suitable material, and be surrounded by a ring or projection of soft metal at the points opposite to the open joints. In order that the breech piece or chamber may not be thrown out of its position by the force of the discharge, the rear of the movable cone-seat or breech-pin is curved from a center within the axis of the barrel, and is made to bear upon a seat, a small portion of which is correspondingly curved a short distance above and below the prolongation of the axis of the barrel. The discharge is thus caused to retain the breech piece or chamber in its firing-position as it cannot be withdrawn therefrom until the movable cone-seat or breech-pin be advanced into the position seen in Fig. 2; this is also an assistance in throwing the cone-seat forward, and of itself, under ordinary circumstances, would be sufficient to retain the breech piece or chamber in its firing-position. But as we may want to place the projecting position of the curved surface lower down, as at T, for instance, and also for additional security, I have adopted the following device for the purpose of more unfailingly accomplishing this end: H is a bolt which passes transversely through the stock immediately in the rear of the movable breech piece or chamber. This bolt is cylindrical, and is cut away upon one side, *f*, to enable the breech piece or chamber to be

returned to its place. The bolt is then revolved by the thumb-piece or handle I, by which means its cylindrical portion is caused to enter a corresponding cavity, *g*, in the breech piece or chamber, which is thus held securely in place. In order that the piece may not be discharged until the bolt H has been turned into the cavity *g*, the handle I is caused to be over the guard, as seen in Fig. 1, and obstruct the entrance of the finger to the trigger whenever the breech-piece is in place and not secured by its bolt.

Operation: The parts being in the position represented in Fig. 2, the metallic cartridge is dropped into the breech piece or chamber, which is returned to its firing-position by the operating-lever F, and bolted by bringing up the handle I. The joints between the barrel and the breech piece or chamber, and between the latter and the movable cone-seat or breech-pin, are thus covered by the soft-metal cartridge-case, which at the instant of discharge is forced into or against these joints, thus effectually preventing the passage of smoke through them and keeping the parts untarnished. After the piece is discharged the breech piece or chamber is withdrawn, as in Fig. 2, and the movable cone-seat or breech-pin is caused to advance by the pin *a* and projection *y*, and thus the empty cartridge-case is loosened from its chamber so that it may easily be withdrawn by hand, if it be desired to save them, to be again employed in a similar manner.

Where the firing is rapid, as in an action, the gun may be turned over after the breech has been withdrawn, when the empty case will fall out and may be instantly replaced by a new one. It is evident that the above-described principle may be employed in the construction of breech-loading cannon or to fire-arms of any other character or description.

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

1. The use of a cartridge-case made partially or wholly of soft metal in combination with a beveled mouth in rear of the barrel, and the movable chamber of a breech-loading fire-arm for the purpose of packing the joints thereof, and operating in the manner substantially as herein set forth.

2. The movable cone-seat or breech-pin, in combination with the soft-metal cartridge-case, operating in the manner substantially as herein described, to eject the empty cartridge-case, as set forth.

AMBROSE E. BURNSIDE.

Witnesses:

WILLIAM C. G. CUSHMAN,
WILLIAM P. BRADFORD.