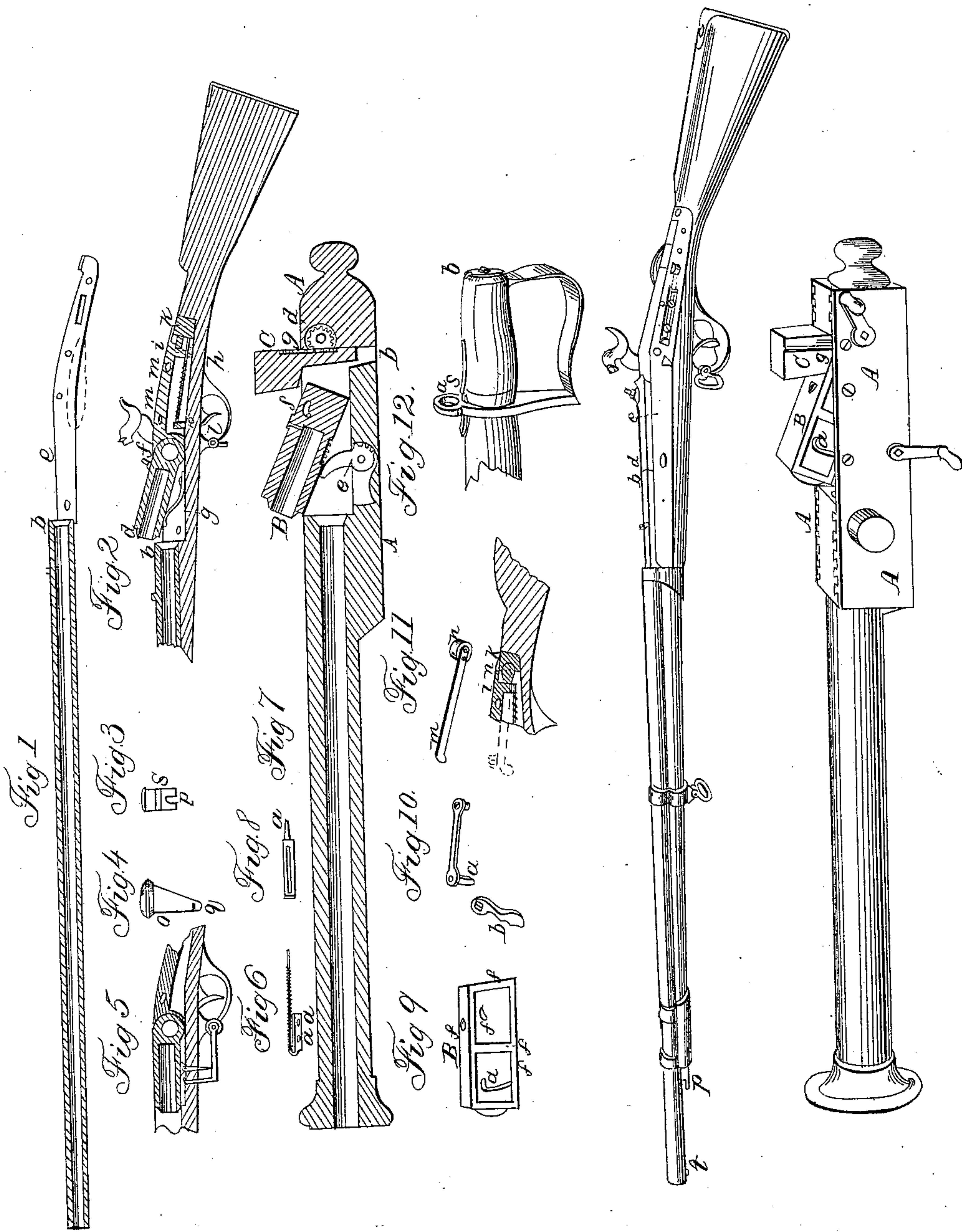


H. L. THISTLE.

Breech-Loading Fire-Arm.

No. 865.

Patented Aug. 1, 1838.



UNITED STATES PATENT OFFICE.

HEZ. L. THISTLE, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN FIRE-ARMS APPLICABLE ALIKE TO SMALL-ARMS AND CANNONS.

Specification forming part of Letters Patent No. 865, dated August 1, 1838.

To all whom it may concern:

Be it known that I, HEZEKIAH L. THISTLE, of the city of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Fire-Arms Applicable alike to Small-Arms and Cannons; and I do hereby declare that the following is a full and exact description of the construction and operation of the same.

The barrel of my gun is made of the ordinary form and material.

Figure 1 in the annexed drawings represents a longitudinal section of the barrel. The end *b* next the chamber is open, and the bore is turned out in the form of a flute-joint, as seen in the drawings, into which the front end of the chamber fits neatly by a corresponding shoulder, as shown at *d*, Fig. 2, which represents a longitudinal section of the chamber, the tail-piece, and the middle portion of the stock. Likewise two straps of metal, one of which is seen at *e*, are welded or brazed to each side of the barrel about four or six inches of its length, and, extending backward the entire length of the chamber and tail-piece, are bent so as to conform to the angle of the stock, to which latter they are secured by screws or otherwise, and, together with the bands of the barrel, serve to secure it to the stock. The right-hand plate is made sufficiently broad to allow the lock to be countersunk therein, by which means the same degree of compactness is attained as in guns of ordinary construction. The machinery of the lock itself does not vary from the locks in common use.

The chamber and tail-piece are connected by a hinge or rule joint, as represented at *f*, the connecting-pin being very substantial—say half an inch in diameter—and are embedded in the upper side of the stock between the plates *e* of the barrel, and the upper surface of the tail-piece is flush with the side plates, *e*. The length of this bed is such as to permit the chamber and tail-piece to slide back a sufficient distance to unship the front end, *d*, of the chamber from the barrel, whereupon the chamber is immediately thrown up to receive a fresh charge by the spring *g* in the bottom of the bed; or, instead of the spring *g*, by the pressure of the hand on a small angular strap, as seen in Fig. 5, attached to the front of the trigger-guard, which operates against the end of a short arm attached to the under side of the

bench, and which projects through the stock a short distance. The lower side of the tail-piece is cut out, as seen in the drawings, so as to make room for the machinery of the lock, the spiral spring *h*, and its spindle, which spring operates against the portion *i* of the tail-piece and presses it back, when relieved, for the purpose of unshipping the chamber, the ends of the spindle having their bearing at the shoulder *k* of the bed and the short arm *l* in the bottom of the bed, to which they are permanently attached; or the spindle may be made as shown in Fig. 6, and attached by two screws at *a a* to one side of the bed. The arm *l* will, in that case, be unnecessary. The lower part of the end *i* of the tail-piece is notched, as shown at *p*, Fig. 3, so as to stride the spindle. Two oblong slots, *m*, are, moreover, cut through the tail-piece, through which and the side plates pass two strong screws, that serve as guides during its motions, at the same time preventing it from rising. These screws, instead of being made to pass through the tail-piece, may also be made to work in shallow grooves in the side of the latter.

For the purpose of forcing the chamber into the barrel and of retaining it there, a rectangular wedge or key of metal, as represented in Fig. 4, is provided, which is passed through the side plates immediately in rear of the tail-piece, the side *o q* of which fronts toward the tail-piece and enters the square notch *s*, Fig. 3, the hypotenuse of the key bearing against the shoulder of the bed and the side plates. The wedge or key is retained by a sliding pivot attached to the side of the stock, as shown in Fig. 8, the foot *a* of which enters a hole in the projection of the wedge, or by a spring attached to the upper side of the stock behind the wedge, as seen in Fig. 10, of which the portion *a* enters a square notch or gain made for the purpose in the back part of the wedge, and which is withdrawn by the pressure of the thumb on a bent lever, *b*. In place of the wedge, an oval roller, *n*, Fig. 11, may be used, having its bearing in a half-round in the shoulder *k* of the bed immediately behind the tail-piece, and by means of the lever *m*, when raised to a catch made on the side of the plate *e* of the gun, presses against the portion *i* of the tail-piece.

I employ a straight sword of ordinary construction in place of a bayonet. (See Fig. 12.) This ships on the end of the barrel by a round

hole, *a*, made in the upper part of the guard and a hole or socket, *b*, in the butt-end of the hilt, which latter ships on a pivot, *p*, on the under side of the barrel, (see drawing of the gun,) and is held on by the shoulder of a flat spring, *s*, attached to the upper side of the hilt, which is checked by a knob, *t*, on the end of the barrel, by which arrangement the sword is brought vertically in a line with the axis of the barrel.

My cannon, which I make of wrought-iron, is constructed as follows: The barrel and the bed of the breech (see Fig. 7, which is a longitudinal section of the gun with a part of the barrel in a position to receive the charge) are in one piece, or are keyed and bolted together. The bed-piece A is in the form of a parallelopiped, with an oblong slot or mortise in its upper side extending its whole length, (formed by strong wrought side pieces, dovetailed or keyed together,) in which the breech B, also in the form of a parallelopiped, fits neatly, but leaving sufficient space at the end to admit the wedge C, by which it is kept immovable when shipped into the barrel of the gun. At the rear end of the bed an opening, *b*, is made through the bottom of the bed, through which the foot of the wedge passes. *d* is a pinion having its bearing in the bed, which takes into a rack on the back of the wedge, and, being turned by means of a crank and handle, raises and lowers the wedge. *e* is also a pinion having its bearing in the bed, with a cam on one side. It takes in a rack on the under side of the breech B and, being worked by a crank and handle, causes the breech first to recede from the barrel and then, by the operation of the cam, throws up the front end from the bed, preparatory to receiving the charge, and vice versa. The breech is bolted to the bed by an oblong slot, *f*, which bolt serves as a center of motion when the front end is raised, and also aids in confining the breech when shipped with the barrel, for which latter purpose a rectan-

gular groove, as seen at *a*, Fig. 9, is cut in the outside of the breech, in which works the point of a strong screw fixed in the side of the bed. The wedge is inserted behind the breech or chamber, with the slant side toward it, and a gain or notch, *g*, Fig. 7, is cut at the foot, in which the breech recedes when it is thrown back after the wedge is drawn. The wedge also has tongues on each side extending its whole length, which enter two grooves in the bed and steady the wedge in its motion; also, to prevent the wedge being wholly withdrawn, a short groove is made on one edge thereof, in which enters the point of a screw fixed in the side piece. To relieve the friction, knobs or projections *ff*, Fig. 9, are formed on the sides of the breech, which come in contact with the bed, and the parts are kept well oiled; also, the angle of the wedge is very small—say five to ten degrees—so as to insure sufficient mechanical advantage against the rebound when the gun is discharged, to prevent its being moved.

Now, what I claim as new and as my invention in the above-described improvement in fire-arms, for which I ask Letters Patent, is—

1. The tail-piece and the flute-jointed chamber connected by a joint, the wedge, oval roller-bed, and springs in combination therewith, as herein described.

2. The manner of shipping the sword.

3. The flute-jointed chamber and its guide screws or bolts, the bed, wedge, racks, pinions, cam, and cranks, in combination applied to cannons and field-pieces, operating as herein set forth and described.

In testimony that the foregoing is a true description of my said invention I have hereunto set my hand this 7th day of July, 1838.

HEZEKIAH L. THISTLE.

Witnesses:

JAMES H. CAUSTEN,

JAMES H. CAUSTEN, Jr.