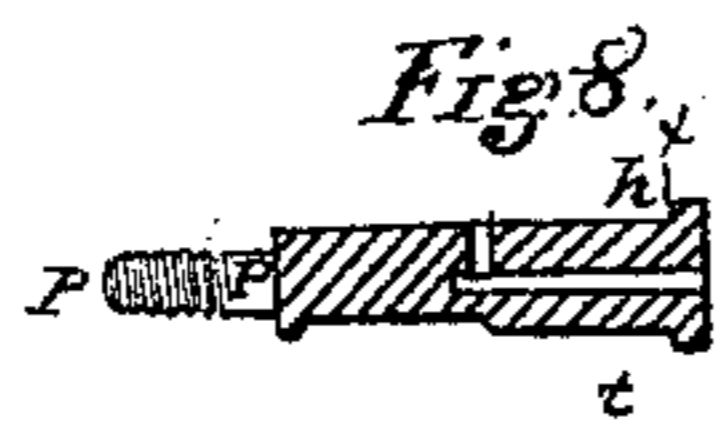
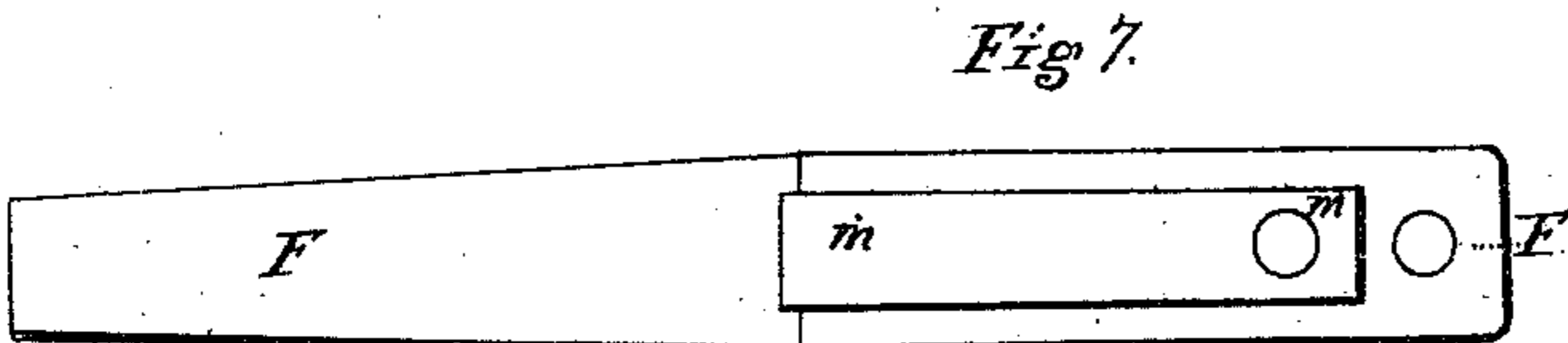
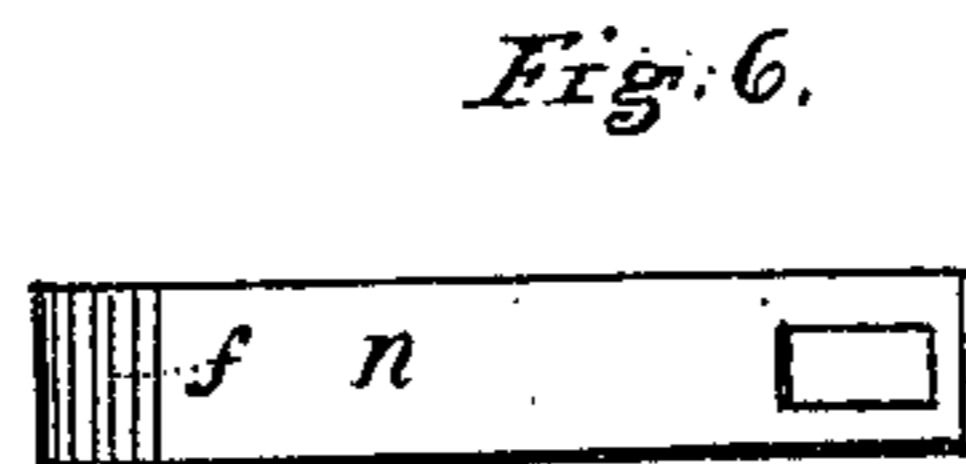
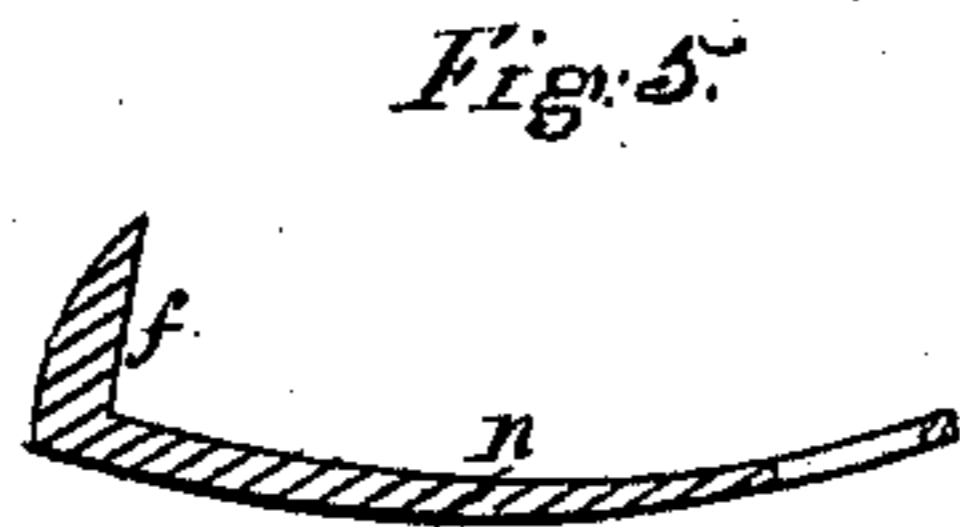
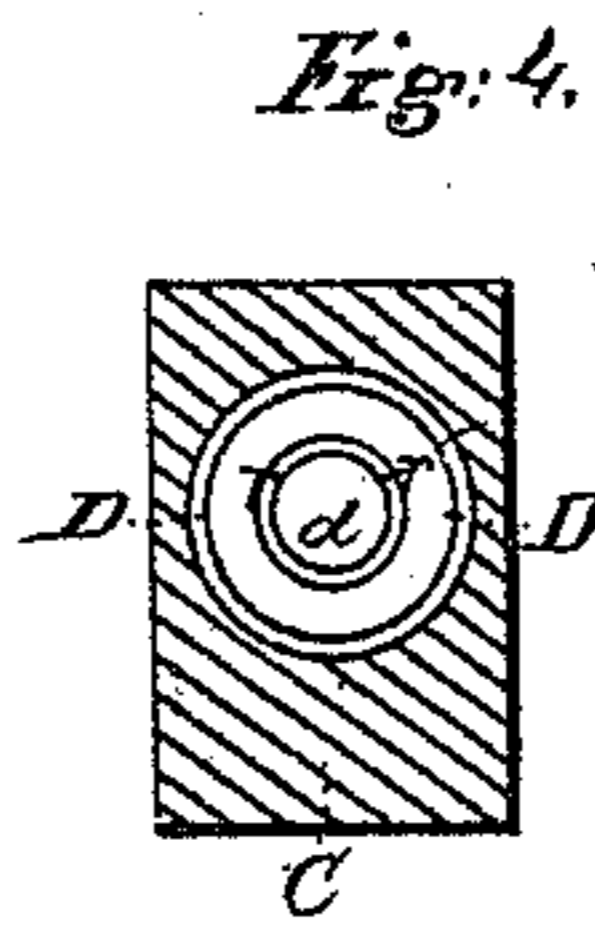
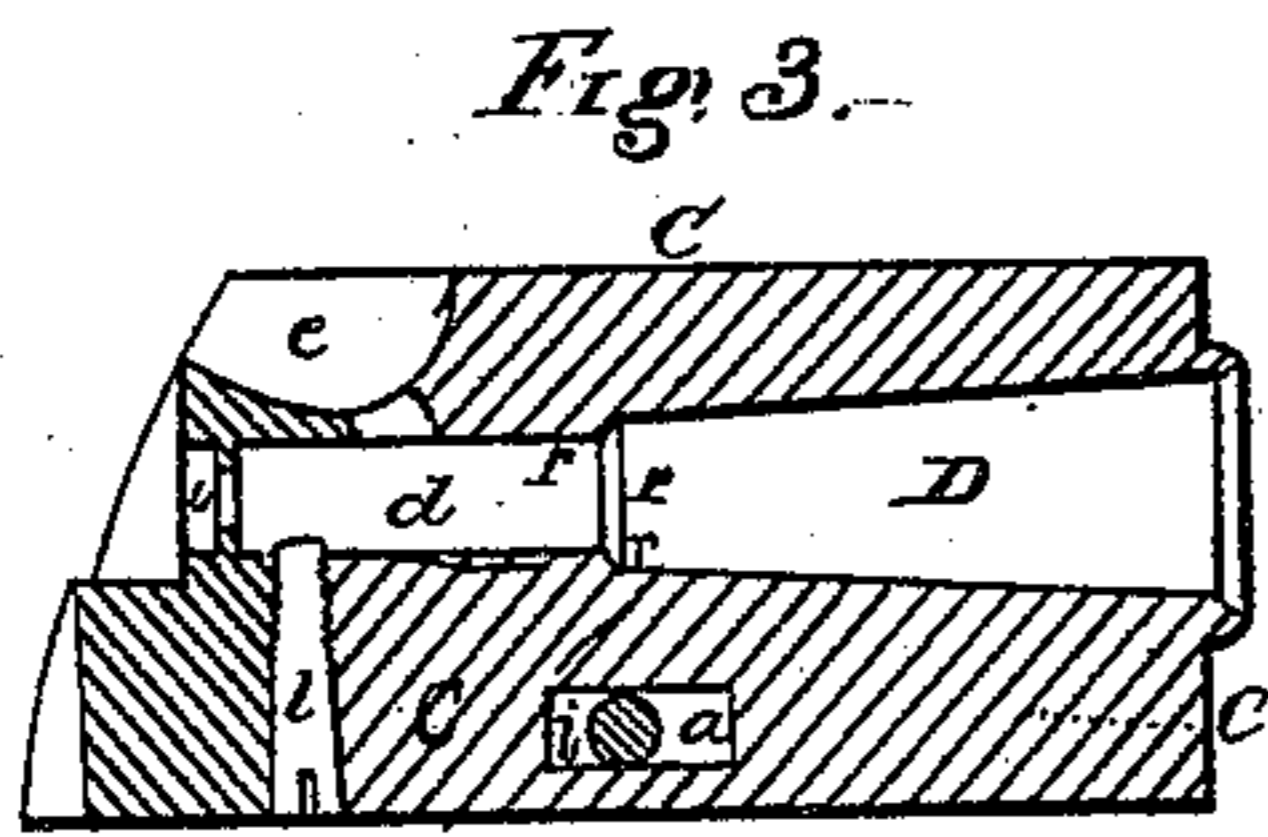
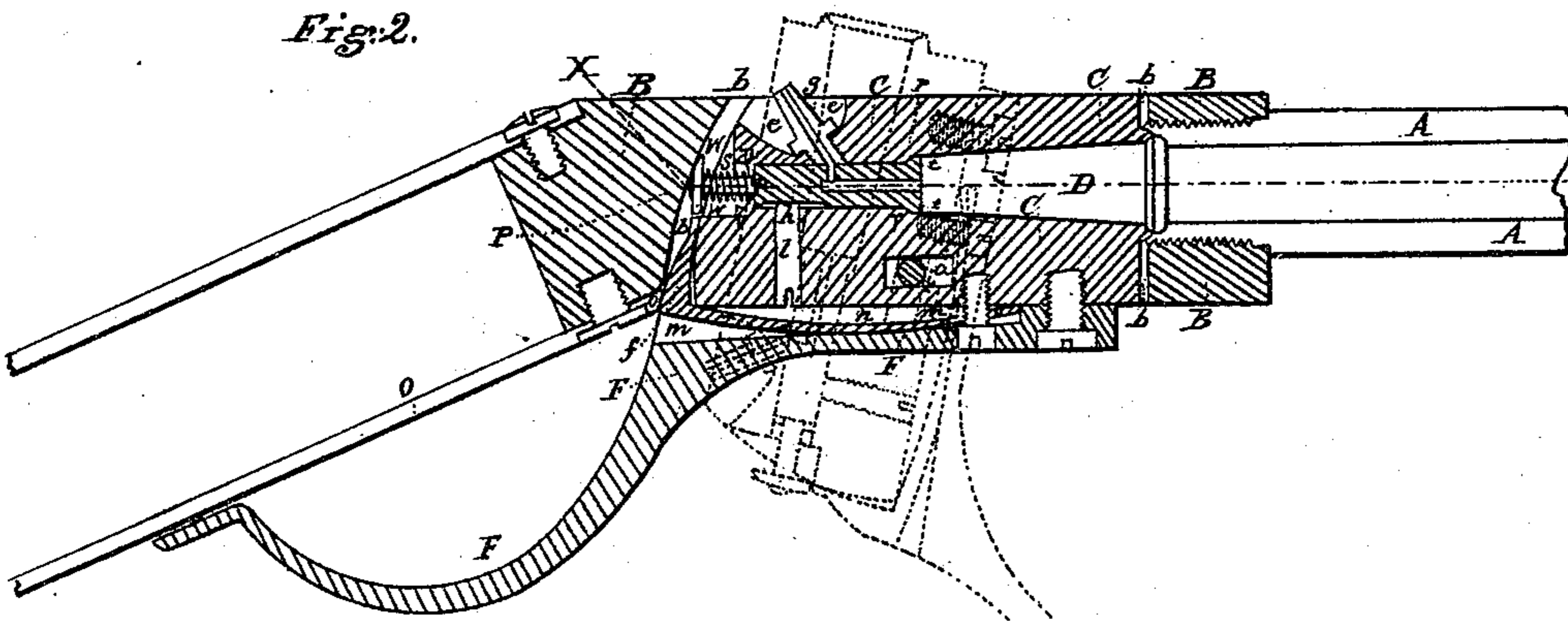
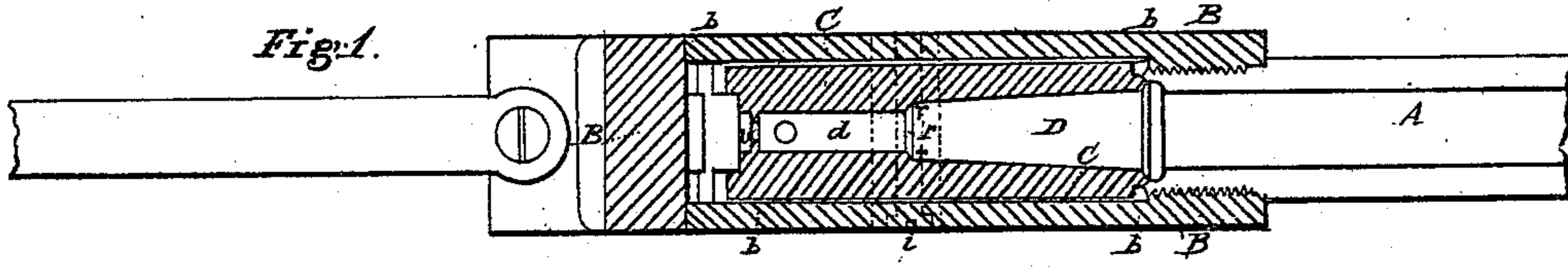


G. HANCOCK.  
Breech-Loading Fire-Arm.

No. 42,471.

Patented Apr. 26, 1864.



WITNESSES.

Lease A. Brumell  
George G. Phillips

INVENTOR.

George Hancock

# UNITED STATES PATENT OFFICE.

GEORGE HANCOCK, OF PROVIDENCE, RHODE ISLAND.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 42,471, dated April 26, 1864.

*To all whom it may concern:*

Be it known that I, GEORGE HANCOCK, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Breech-Loading Fire-Arms, which is adapted to the use of either paper or metallic cartridges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a horizontal cross-section of my improved breech by the line X X of Fig. 2. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a vertical cross-section of the chamber-block detached. Fig. 4 is an end view of the same. Figs. 5 and 6 are details of the spring *n*. Fig. 7 is a plan of the guard and lever F detached. Fig. 8 is a vertical cross-section of my improved breech-pin *h* detached.

Similar letters indicate corresponding parts in all the figures.

The improvement hereinafter described is particularly applicable to that construction of breech-loading fire-arms set forth and described in Letters Patent of the United States No. 14,491, granted to Ambrose E. Burnside March 25, 1856, and the same is calculated to overcome certain important objections in said construction, and thereby render the arm more useful and serviceable. In the said construction the chamber-block is hinged to the rear end of the barrel, and in consequence its mouth swings so far down into the recess or slot formed in the breech that it is exceedingly difficult to remove the empty cartridge-case from the chamber with the fingers, as is designed. Again, the breech-pin is a plug formed on a square block and inserted in the rear end of the chamber, and as it is but little affected by the heat caused by the explosion it does not expand with the chamber, and in consequence the gas escapes around the plug, leaving a deposit which soon prevents it from sliding to eject the empty cartridge-case, as is designed.

For the removal of these objections my invention consists, first, in hanging the chamber-block to swing on a stationary pin passing through the lower central portion of the chamber-block, and arranging therewith a wedge and spring to carry the mouth of the chamber up against the rear end of the barrel, whereby the chamber may be swung into a vertical po-

sition at right angles with the barrel, and its mouth elevated above the recess in the breech; second, in forming the breech-pin with a beveled shoulder fitting closely a corresponding surface at the bottom of the chamber, to form an expansion-joint, and arranging therewith a spring to press the two surfaces together, and a projecting nut on the rear end of the breech-pin to start it forward and loosen the cartridge-case in the chamber.

To enable others skilled in the art to make and use my said invention, I will proceed to describe the construction and operation of the same.

In the drawings, A is the barrel of the gun. B is the breech, and C is the chamber-block, fitted to swing freely in the vertical recess *b b* formed through the said breech. The chamber-block is of cast-steel, and in it is formed the conical chamber D for the reception of the cartridge, and connecting therewith a cylindrical opening, *d*, extending through to the rear end of the block, which is occupied by the breech-pin *h*, as shown in Fig. 2. A depression, *e*, is also formed in the said block to receive the percussion-tube *g*, which is screwed into the same in the usual manner, the passage through said tube connecting with a corresponding passage in the breech-pin for conducting the fire to the cartridge within the chamber.

Beneath the chamber D in the block, and midway between the ends thereof, a slot, *a*, is formed laterally, through which a screw or pin, *i*, passes, on which the entire block swings by means of the guard-lever F, which is rigidly attached thereto, from the position in line with the barrel to that shown in dotted lines at right angles thereto in loading and discharging the piece, the chamber-block being held in its position in line with the barrel by a suitable spring-catch arranged therewith.

In the guard-lever F, beneath the chamber-block, a recess, *m*, is formed, in which a spring, *n*, is arranged, and secured by a screw passing through a slot in one end, said spring having a wedge, *f*, extending upward at right angles therefrom, one surface of which wedge bears against the rear end of the block C, and the heel or lower corner of the opposite wedge-surface bearing against the end of the trigger-plate O, as shown in Fig. 2. This combined spring and wedge acts as a yielding lever to

push the block C forward against the rear end of the barrel, and to secure it firmly in such position when the piece is discharged, the spring-arm *n* being the long arm of the lever with an inherent force, the trigger-plate O, supporting the heel of the wedge, being the fulcrum, and the block C, bearing against the toe or end of the wedge, being the resistance, and being thus constructed and arranged it will be seen that the force of the spring drives the wedge between the trigger-plate and the end of the block C, as its two bearings, when the block is swung into position in line with the barrel, exerting both a spring and wedging pressure to hold the mouth of the chamber against the rear end of the barrel.

It will be seen that the block C swings on an axis, viz., the pin *i*, situated in the lower central portion of the block—*i. e.*, a swinging point midway between the two ends of the said block but below its center vertically; that in consequence of its being hung on an axis in such a relative position the block makes a partial rotation within the recess *b b* instead of swinging more or less in and out of the said recess, and that the chamber is capable of being rotated to a position at right angles with the barrel with its mouth elevated far above the recess in the breech in the most convenient position for loading or for removing the empty cartridge-case with the fingers.

The breech-pin *h* is formed as shown in Figs. 2 and 8, it being cylindrical with an enlargement at one end, on which is formed a beveled shoulder, *t*, which is fitted by grinding to a gas-tight joint to the corresponding beveled surface *r* at the bottom of the chamber D. The opposite end, *p*, of the breech-pin is turned smaller than its body, and is surrounded by a spiral spring, *s*, one end of which bears against the shoulder *v* in the block, and the other end against the square projecting nut *w*, screwed upon the end *p* of the breech-pin, and thus serves to press the two beveled surfaces together to form a close joint around the breech-pin in the bottom of the chamber. The projecting

nut *w* is in contact with the inclined surface *b'* of the recess when in the position shown in Fig. 2 for firing the piece, and as the chamber-block is rotated after the discharge into the position shown in dotted lines for the removal of the empty cartridge-case, the upper edge of the nut *w* slides down the inclined surface *b'* and, striking against the end of the trigger-plate *o*, it is driven forward, thereby starting the cartridge-case at its opposite end within the chamber and loosening it, so that when the chamber is in its vertical position it may be easily removed with the fingers.

It will be seen that the beveled surface *t* of the breech-pin and *r* of the bottom of the chamber form an expansion-joint—*i. e.*, a joint which adapts itself to any possible degree of expansion of the chamber without affecting its closeness, so that the gas from the explosion cannot escape around the breech-pin, and it is this desirable qualification of the breech-pin which adapts the chamber to the use of either paper or metallic cartridges. The breech-pin, being cylindrical, is prevented from turning, and yet allowed to slide endwise in the block by means of the set-screw *l*, the end of which bears slightly against a flattened surface on the body of the pin, as shown in Fig. 2.

Having thus described my invention, what I claim is—

1. So hanging the chamber-block that it will partially rotate within the recess in the breech on a fixed pin passing through the lower central portion of said block, in combination with the peculiar spring and wedge *n f*, substantially as described, for the purpose specified.

2. Forming the breech-pin with a beveled shoulder, in combination with a beveled surface at the bottom of the chamber, a spring, *s*, and a projecting nut, *w*, arranged substantially as described, to effect the purpose specified.

GEORGE HANCOCK.

Witnesses:

ISAAC A. BUNNELL,  
GEORGE G. PHILLIPS.