

J. BURKE. Breech-loading Fire-arm.

No. 55,613.

Patented June 19, 1866.

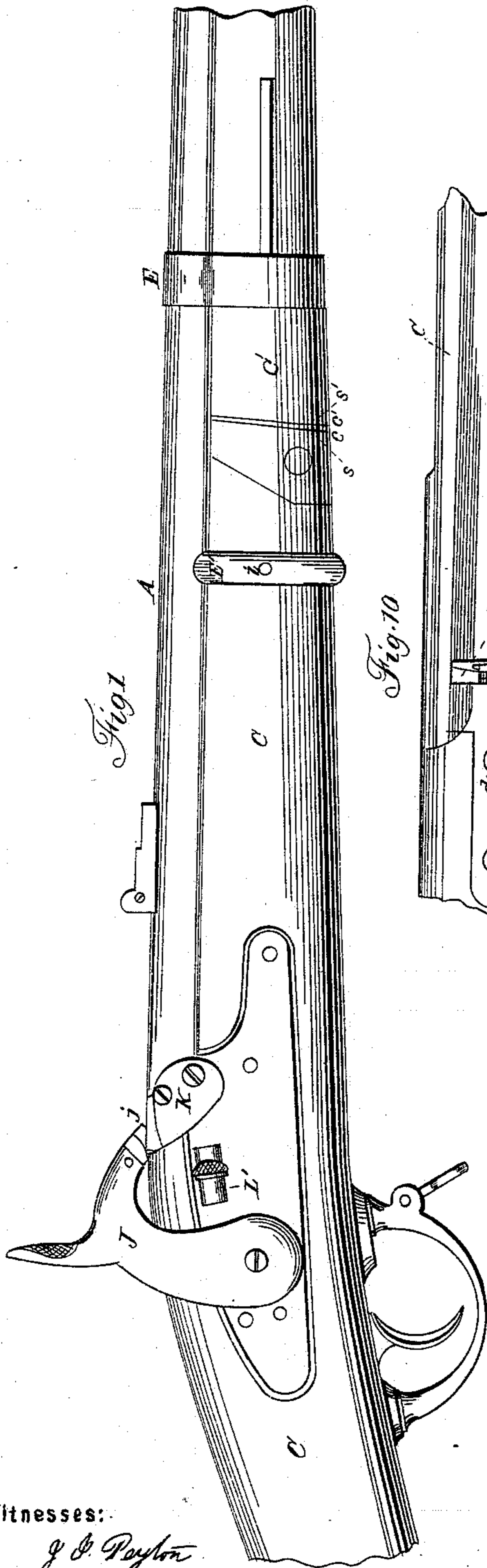


Fig. 1.

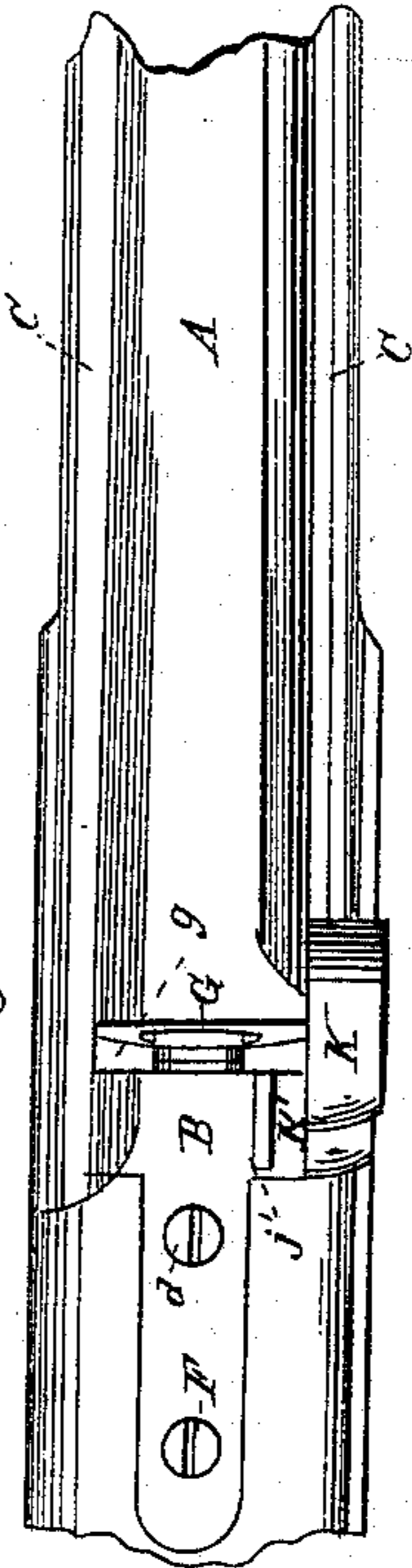


Fig. 10.

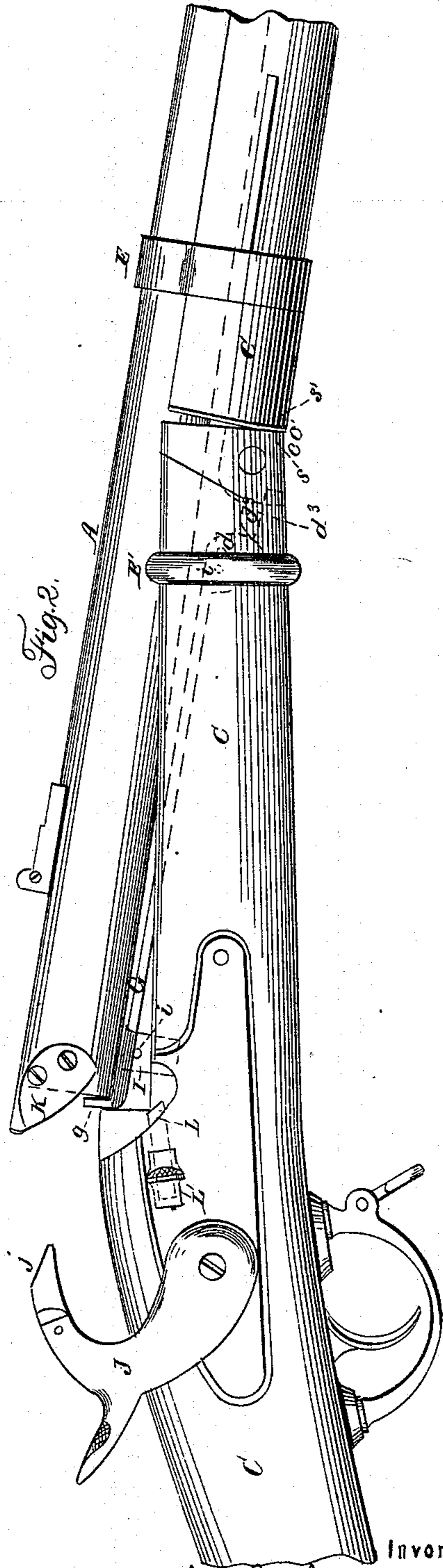


Fig. 2.

Witnesses:

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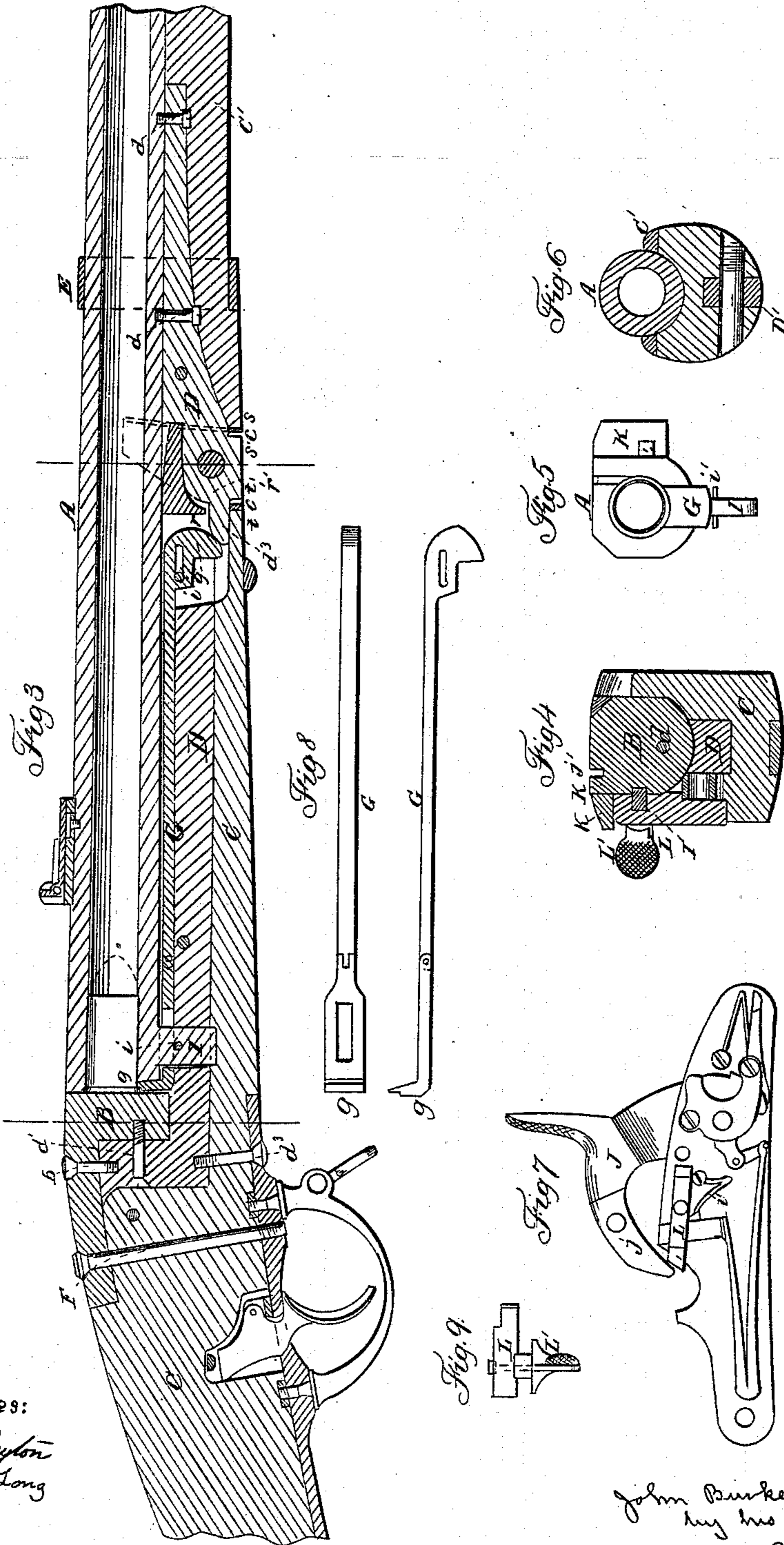
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Breech-loading Fire-arm.

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UNITED STATES PATENT OFFICE.

JOHN BURKE, OF SYCAMORE, ILLINOIS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 55,613, dated June 19, 1866.

To all whom it may concern:

Be it known that I, JOHN BURKE, of Sycamore, in the county of De Kalb and State of Illinois, have invented a new and useful Improvement in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view, in elevation, of so much of a gun embracing my improvement as is necessary to illustrate my invention, the parts being shown as ready for firing, but with the hammer at half-cock. Fig. 2 represents a similar view with the barrel tipped for the expulsion of the exploded case and the insertion of a new cartridge. Fig. 3 is a vertical longitudinal central section through the same. Fig. 4 is a vertical section through the same at the line $x x$ of Fig. 3, looking rearward. Fig. 5 is a similar section at the line $y y$ of Fig. 3. Fig. 6 is an end view of the barrel and retractor as seen from the rear. Fig. 7 is a view of the inner side of the lock, showing the locking-pin and its spring. Fig. 8 is a plan or top and edge view of the jointed retractor. Fig. 9 is a similar view of the locking-pin, and Fig. 10 is a plan or top view of a portion of the gun with the barrel tipped.

My invention relates to that class of breech-loading fire-arms in which a charge of fixed ammunition is inserted into the end of a barrel tilted vertically on its hinge, and its object is to produce a simple and effective breech-loading arm; to which end the improvement herein claimed consists, first, in securing the front or upper portion of the stock and hinge to the barrel, and securing the breech-piece and lower portion of the hinge to the butt of the stock, whereby I secure a strong, tight joint and an easy working of the parts; second, in a jointed retractor protruded by a cam on the hinge, instead of a spring; third, in protruding the retractor by a cam on the hinge, and retracting it by grazing against the breech in closing, whereby I avoid friction on the flange of the cartridge; fourth, in a device for holding the barrel firmly while firing; fifth, in so constructing the locking-bolt that it shall slide in a groove cut partly in the lock-plate and partly in the breech, thus preventing strain on the lock-plate.

In the accompanying drawings my improvement is shown as applied to the United States Springfield rifle-musket. To convert this arm into a breech-loader I cut off the rear end of the barrel A, just in front of the breech-pin, and remove the breech-pin and tang, inserting in lieu thereof a similarly-shaped solid breech-plug, B. I sever the stock C C' at the point c , about an inch and a half below the lower band, and connect the two parts by a strong hinge, D D', which permits the parts to move vertically to tip up the barrel. The barrel is attached to the front or upper part of the stock by the usual bands, the lower one, E, only being shown in the drawings.

In order to strengthen the stock I sometimes employ a half hoop or band, E', embracing the stock only, so as not to interfere with the tipping of the barrel. In this instance the pin i , on which the front of the retractor plays, passes through this band. The front part, D', of the hinge is also let into the front part of the stock, and is secured to the barrel by screws $d d$.

To prevent abrasion of the severed edges of the stock I face them with metal plates $c c'$, as shown in the drawings.

The rear portion, D, of the hinge is also let into the stock, and extends back of the breech-plug, its rear end being bent up at a right angle, so as to form a shoulder, through which a screw, d' , passes to secure the breech-plug and hinge firmly together. Another screw, b , passes down through the tang of the breech-plug into the hinge.

F is the ordinary tang-screw, and d^2 is a screw passing up through the guard-plate and stock into the hinge.

By this mode of construction I render the parts even stronger than before the alteration.

In order to avoid the shearing action on the cartridge when closing the breech, and the consequent liability to accidental explosion, as well as to remove the exploded cartridge-case, I employ a jointed retractor, G, consisting of a long bar provided at its rear end with a head, g , fitting in a slot in the rear end of the barrel, and at its front end with a cam, g' , acted upon by another cam, d^3 , on the front part of the hinge, the retractor being also jointed near its rear end. By this means, when the barrel is tipped, the jointed retractor is shoved backward endwise and withdraws the

cartridge. The retractor is guided by a pin or bolt, *i*, in the slot on its front end and by a slot on its rear end, which embraces the steady-pin I, the bar being upheld by and sliding on a pin or bolt *i'*, passing through the steady-pin I, and the joint in the retractor causes its rear portion to act so that its motion is parallel with the barrel.

I retain the lock now used in the Springfield rifle-musket; but to adapt it to the cartridges carrying the fulminate in the flange I fasten to the hammer J a nose, *j*, having a small point to enable it to enter a slot, *j'*, in the breech and strike the flange.

To fasten the barrel firmly while being fired, I use a locking bolt, L, which slides in a horizontal groove, partly in the lock and partly in the solid breech B, as shown in Fig. 7, and enters a slot, *l*, in the cone-plug. The bolt is held in this slot by a small spring, *l'*, as shown in Fig. 7, and is withdrawn by pressing on a thumb-lever, L', projecting on one side.

When the breech is pressed down the latch is pressed back like a door-bolt by the cone-plug, and as soon as the breech is closed the latch-spring *l'* thrusts the bolt forward into its socket.

I secure the thumb-piece L' to the bolt by squaring its end and inserting it into a square socket in the bolt, and unite the two by a screw passing into the thumb-piece, as shown in Fig. 9, which construction prevents the thumb-latch from working loose.

The mode of operation is as follows: When the parts are in the position shown in Fig. 1 the gun is cocked and the thumb-piece L' drawn back, which releases the locking-pin I, and allows the barrel to tilt up into the position shown in Fig. 2. The cartridge is then inserted and the breech shut down and locked in place by the latch L. As the breech descends the end of the jointed retractor bears against the breech and is shoved forward, carrying the cartridge with it, and thus preventing the rubbing of its flange against the breech, which is liable to produce an accidental explosion. When the breech is closed the locking-pin slides forward and locks the barrel in position, while the steady-pin I fits in a slot in the hinge D and holds the barrel steady. In closing the breech the inner side of the cone-plug slides past a shoulder, K', on the breech, which fits snugly against it, and thus prevents any lateral play of the barrel. The gun, having been cocked, is ready to fire, and thus saves one motion and the time lost in cocking. When the gun has been fired the hammer is again cocked, and the thumb-piece L' pressed

back, which causes the barrel to tip up by its own weight. As the barrel tips the cam *d*³ pushes back the retractor, the joint of which causes its rear end to move parallel with the barrel and expels the cartridge, remaining thus pushed back until the breech is closed. By reference to Fig. 3 it will be seen that as the barrel tips the rear end of the retractor follows it, while the front end remains attached to the stock, turning and sliding on the pin *i* as it is shoved by the cam on the hinge.

To prevent strain on the hinge when the barrel is tipped, I form shoulders *r s t* upon the rear part of the hinge, against which the parts *r' s' t'* of the front hinge abut when the breech is open. I thus secure bearings on all sides of the pivot of the hinge.

When at half-cock the nose of the hammer is inserted slightly in the notch, and thus avoids catching in any obstacle.

I have described my invention as adapted to altering a muzzle-loading to a breech-loading gun; but it is obvious that it is equally adapted to a new gun as well as to altering one already made. It may also readily be applied to a double-barreled gun, and be used with equal advantage either for military or sporting purposes.

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

1. The combination of the tipping barrel with the front part of the hinge and stock, and of the rear part of the stock and hinge with the breech-piece or plug, when the parts are arranged for joint operation substantially as described.
2. The jointed retractor, constructed substantially as described, to expel the cartridge by a positive motion.
3. Moving the retractor in one direction by a cam, and closing it by grazing the breech, as described, whereby I draw in the retractor without using a spring, and am also able to prevent friction on the flange of the cartridge.
4. The combination of the tipping barrel, the steady-pin I, the locking-bolt L, the cone-plug K, and the shoulder K', substantially as described, to hold the barrel firmly while firing.
5. Constructing the locking-bolt so that it shall slide in a groove partly in the lock and partly in the breech, as described, to prevent strain on the lock, as set forth.

In testimony whereof I have hereunto subscribed my name.

JOHN BURKE.

Witnesses:
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