J. C. COOKE.

Breech-loading Fire-arm.

Patented June 3, 1862.

No. 35,488.

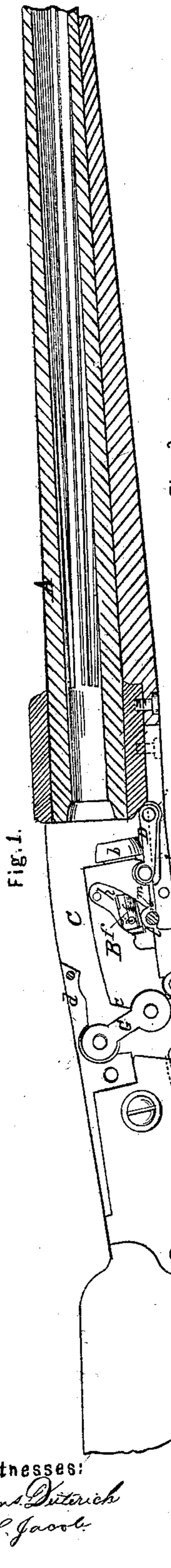

Fig. 1.

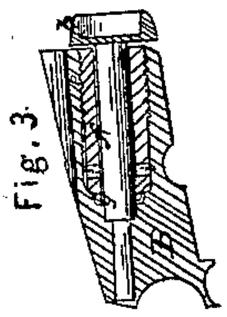

Fig. 3.

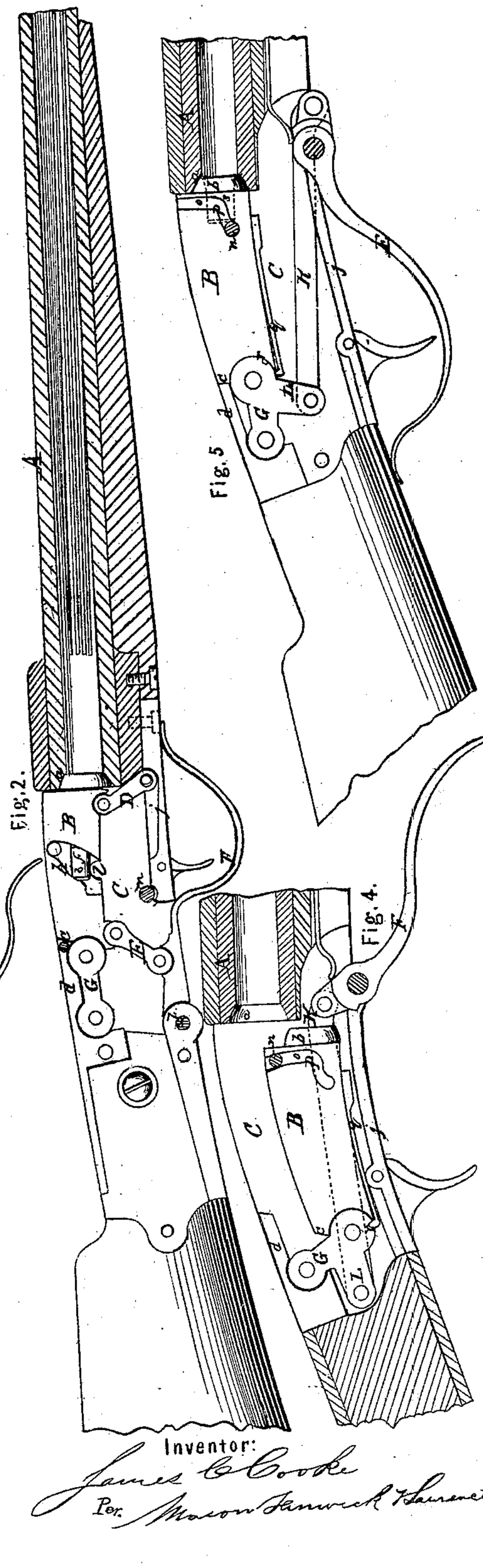

Fig. 2.

Fig. 4.

Fig. 5

Witnesses:
Gustavus Dieterich
E. L. Jacobs

Inventor:
James C. Cooke
Per. Mason Fenwick & Lawrence Attys.

UNITED STATES PATENT OFFICE.

JAMES C. COOKE, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO HIMSELF AND JULIUS HOTCHKISS, OF SAME PLACE.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **35,488**, dated June 3, 1862.

To all whom it may concern:

Be it known that I, JAMES C. COOKE, of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Breech-Loading Fire-Arms; 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, forming part of this specification, in which—

Figure 1 is a longitudinal section of the gun constructed according to my invention, the breech-loading mechanism being out of position. Fig. 2 is a similar section, the breech-loading mechanism being in firing position. Fig. 3 is the breech-piece detached and in section. Figs. 4 and 5 are similar sections to Figs. 1 and 2, showing a modification of my invention.

Similar letters of reference in each of the several figures indicate corresponding parts.

In the use of a movable breech-piece which is sustained in its movements at its front and rear by loosely-hinged connections, my invention consists in pivoting the rear end of the movable breech-piece to a locking and adjusting link, which is so hinged within the stock, under a solid shoulder adapted to the link and breech-piece, that the breech-piece moves backward out of the bore of the gun and downward below said bore when the guard of the gun is moved in one direction, and in so moving destroys the locking-power of the toggle formed between itself and the link, and forms, with the link, nearly a right angle; and also that the breech-piece moves upward and forward into the bore of the gun when the guard is moved in a converse direction, and in so moving closes the breech of the gun, and stands or rests, when said movements cease, on a straight line with the link and bore of the gun, and offers in said line a solid resistance to the explosive action of the charge fired from the gun.

My invention consists, also, in an adjustable conical plug with stem, in combination with an adjusting tubular sleeve, and with the rising, falling, and back-and-forward moving breech-piece, for the purpose of insuring a gas-tight joint at the breech.

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

A is a gun-barrel open at both ends, the breech being bored with a conical seat, as shown at *a*, so as to admit a conical plug, *b*, as hereinafter described.

B is a movable breech-piece suspended in a space, C, between the breech end of the barrel and the stock. This breech-piece is made to match the rear end of the barrel, and with a bevel, *c*, at its rear end, so as to match and abut against an under-beveled shoulder-piece, *d*, of the stock. In its front end a circular cavity is bored, and along this cavity for a portion of its length a screw-thread is cut, as shown at *e*. In the cavity a tubular screw-threaded sleeve, *f*, is screwed, said sleeve having the conical plug *b*, connected to it by means of a stem of the plug, the stem passing entirely through the sleeve, and the two being held together by means of a pin, *g*. A curved slot, *h*, to admit a wrench-pin to holes *i* in the circumference of the sleeve *f*, is cut in one side of the breech-piece, as shown. By turning the sleeve the conical plug is adjusted so as to fit more or less snugly to the conical seat *a* of the breech of the barrel, and thus insure a gas-tight joint. This end is also promoted by making the plug hollow and open at front, so that the expansive action of the gas may expand the plug from the inner circumference thereof.

As one means of suspending the breech-piece described in the space C, links D E are provided, the link D being hinged to the trigger-plate *j* of the gun-stock, and to the under side of the breech-piece, near the front end thereof, as shown. And the link E is hinged to the top of the lever-guard F, near the fulcrum *k* thereof, and to the under side of the breech-piece, near the rear end thereof, as shown.

In addition to the links D E, a link, G, is provided for locking and adjusting the breech-piece. This link is hinged to the side plate of the stock of the gun at a point in rear of the back end of the breech-piece, and nearly in line with the bore of the barrel, and under the shoulder-piece *d*, as shown; and its other end is hinged to the center of the rear end of the breech-piece. By thus hinging the

link G it abuts against the shoulder-piece *d* when it is adjusted in line with the breech-piece and bore of the barrel, and thus is insured a stiff joint, so far as further upward adjustment is concerned. A resistance in a straight line is also offered to the exploding charge of the barrel, both by the link and the bevel-shoulder of the piece *d;* and besides this, when the breech-piece is adjusted from the position shown in Fig. 2 to the position shown in Fig. 1, the link draws the conical plug longitudinally out of its conical seat, and also lowers it to a position out of the way, thus exposing the open breech end of the gun fully and allowing ample room for the convenient and speedy introduction of a cartridge or charge, as illustrated in Fig. 1.

From an inspection of Figs. 1, 2, and 3 of the drawings, to which the preceding description applies only, it will be seen that all the joints and the parts which they come in contact with are made to match one another neatly; also that a space, *l*, is cut in the under side of the breech-piece to accommodate the trigger-pin *m*. Thus having all the parts match, and arranging them as shown, enables me to make a gun which will operate well and not escape its powder-gas when the charge is exploded. In the plan described the lever-guard moves in a converse direction to that of breech-loading fire-arms in use; but this is not the case with the plan shown in Figs. 4 and 5. In this modification, to open the breech for loading, the guard-lever F is pushed down and forward, as usual. To thus use the lever-guard, there is attached to its forward end a link, K, and this link attaches to an arm, L, formed on the link G. The operation and arrangement of the armed link is the same as the link G in plan shown in Figs. 1 and 2. In moving the lever-guard forward, the link L is carried back, and with it the arm of the link G and the breech-piece, the front end of the breech-piece being guided by a stationary pin, *n*, of the gun, and an angular slot, *o*, formed in one of its own sides. As the breech-piece moves back by the action of the armed link, the groove follows upon the pin *n* until it arrives at the point *p* and the piece B is clear of the conical seat of the bore of the barrel. At this period the end of a spring, *q*, located under the breech-piece, is pressed into a notch, *r*, in the armed link G, and by the continued action of the lever-guard the forward end of the breech-piece B is thrown down to the position shown in Fig. 4.

To close the breech, the lever-guard is moved back, the forward end of the breech-piece thereby caused to move upward until the point *p* of the groove *o* arrives at the pin *n* and stops its further upward motion, and pressing the spring *q* out of the notch *r*, the continued action of the lever-guard brings all the parts to their original locking position, as shown in Fig. 5.

As a modification of the conical plug *b*, it may be bored tapering or conical at the forward end, and a plug, *s*, fitted to it. The action of the powder pressing upon the flat end of the plug will drive the plug back and spread the plug end of the breech-piece in the conical seat of the barrel, and thus make a tight fit. It will be understood that the plug end *b* in this modification constitutes a part and parcel of the breech-piece B.

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

1. The operation of the breech-piece so that it moves upward and forward and enters into the breech end of a fire-arm a short distance by the movement of the guard-lever, and offers a resistance, through its connections, in a line, or nearly so, with the bore of the barrel, and moves out of the bore of the fire-arm downward and backward when the lever-guard is moved in a converse direction, substantially as and for the purposes set forth.

2. Constructing the socketed breech-piece B with a screw-thread, *e*, and with an aperture, *h*, so as to receive a sleeve, *f*, and admit a pin-wrench to holes in the sleeve, and also that the sleeve may be made to follow the plug *b* and support it when an outward adjustment is made, all in the manner and for the purpose described.

3. The beveled shoulder-piece *d*, in combination with the beveled breech-piece B, substantially as and for the purposes set forth.

4. The combination of the link G, breech-piece B, links D E, and lever-guard, for performing the functions named in the first claim above, substantially as set forth.

5. The combination of the link G and shoulder-piece *d*, substantially as and for the purposes set forth.

JAMES C. COOKE.

Witnesses:
W. P. VINAL,
JULIUS HOTCHKISS.