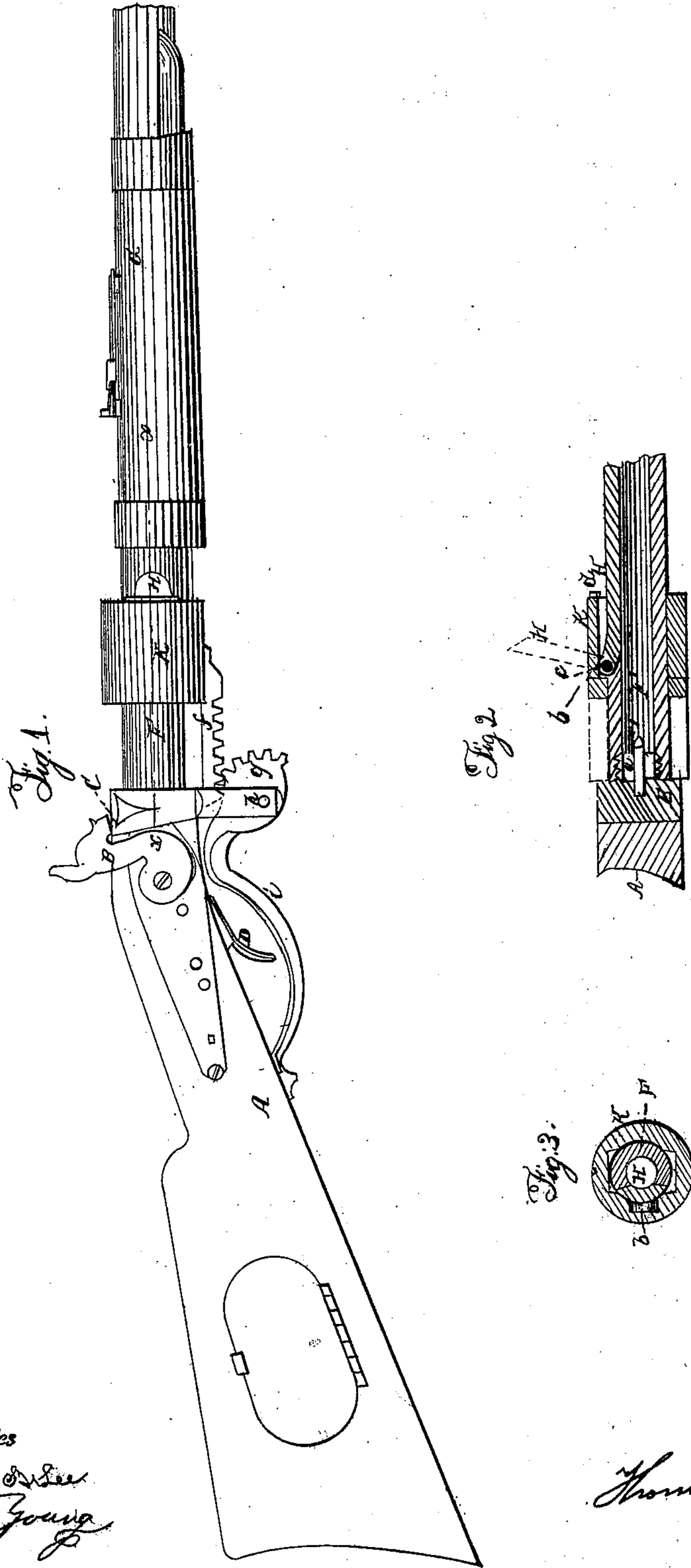


T. E. SHULL.
Breech-Loading Fire-Arm.

No. 23,505.

Patented Apr. 5, 1859.



Witnesses
S. M. ...
R. H. Young

Inventor
Thomas E. Shull

UNITED STATES PATENT OFFICE.

THOMAS E. SHULL, OF MILLERSBURG, PENNSYLVANIA.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 23,505, dated April 5, 1859.

To all whom it may concern:

Be it known that I, THOMAS E. SHULL, of Millersburg, in the county of Dauphin and State of Pennsylvania, have invented a certain new and useful Improvement on 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 a part of this specification, in which—

Figure 1 represents a side view of a carbine in part, having my improvement applied to it; Fig. 2, a horizontal longitudinal section of the breech-loading portion of the gun, taken as indicated by the line *x x* in Fig. 1; and Fig. 3, a transverse vertical section through the cartridge lid or door of the breech.

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

The nature of my invention consists in the combination, with a fire-arm constructed with a stationary and closed breech or breech-piece, and with an opening in the barrel to receive the cartridge, of a hinged flap door or lid which opens and closes the cartridge-charging aperture, as hereinafter specified.

It consists, second, in the combination, with a hinged flap door or lid, of a sliding collar or sleeve, so that the operation of sliding the collar back will open the flap door or lid, and the operation of moving it forward will close and lock the same, as hereinafter specified.

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

A is the gun-stock, B the cock or hammer, C the nipple, and D the trigger, of a carbine or other gun.

E is the breech back-piece, connected with the stock and formed with a reduced shoulder or hollow neck, *a*, in front, on which is cut a screw-thread for the breech F of the barrel G to screw onto, or the breech and barrel, formed either in distinct pieces or in one piece, may be otherwise connected with the stock. The breech F is of stationary character and closed construction in the rear where the cartridge or main portion of it is designed to occupy, whereby increased strength is secured to resist the first violent effect of the explosion on the sides of the breech or breech portion of

the barrel, and "blowing" or escape of the gas at that portion during ignition of the powder is avoided by there being no hinged or opening and closing breech proper, as in other breech-loading fire-arms, for insertion of the cartridge. This stationary closed construction of the breech gives the gun the strength and lightness there of a muzzle-loading gun, and in the avoidance of a frequently opening and closing or working joint at that part much objection is removed to the breech-loading arm. Nor do I make a thorough cross break or joint in any part of the breech or barrel to despoil it of a closed character throughout, other than to provide a cartridge-charging lid or door in advance of the rear portion of the breech, where an opening, and that not a transverse but longitudinal one, is less detrimental to the general strength, and especially to the part receiving the first shock of the explosion, and less liable to occasion objectionable leakage, than when such opening is in a different position relatively to the cartridge of a loaded gun. This cartridge-lid may be arranged in any suitable situation circumferentially of the forward part of the breech F, and it may be variously hung to open inward or outward. In the accompanying drawings said lid H is shown secured by a joint or hinged structure, *b*, in the rear, and arranged to open outward on the one side of the breech. This lid or door H may be of configuration on its inside corresponding to the bore of the part of the breech it fits, and of convex form corresponding to the outside of the breech on its exterior, with a raised back or rear end projection, *c*.

Fig. 2 of the drawings shows in black lines said door when closed, and also exhibits in red lines the same when open. Referring to this figure, it will readily be seen how the cartridge may be inserted through the opening made in the forward part of the breech when the lid H covering said opening is open, and how the cartridge thus inserted may be pushed home or back to its proper place.

I is a tubular pen-pointed cartridge-pricker, arranged to project longitudinally into the chamber portion of the breech from and at the back of the latter. On pushing home the cartridge, as described, this hollow pricker readily punctures the end of the cartridge by the

pressure of the latter against it, and establishes a close channel for the loosened powder, in direct communication with the nipple, to insure and promote ignition on the hammer exploding the cap. The specified formation of this tubular pricker at its forward end has its value enhanced or made more apparent by the way in which the cartridge is inserted and forced to its place, the puncturing cut of such pricker being a gradual and shear one.

K is a longitudinally-sliding collar or sleeve surrounding the breech, and in concentric relationship or otherwise with it. This sleeve is designed to slide over the cartridge-lid H, and serves, when slid forward, to close and lock the open projecting lid, and, on sliding said sleeve back, opens the lid by a face-end covering, *d*, to a longitudinal groove, *e*, in the sleeve striking and bearing against the raised or projecting portion *c* of the lid in its rear.

The lid H should be made beveled at its sides and ends, to make its joint with the breech tight when closed; but to provide against clogging by any leakage and accumulation of matter on its outside and between it and the sleeve, the latter need not fit close all round the breech, but may have one or more relieving recesses formed on its interior.

Connected with the sleeve K is a rack, *f*, into which a toothed sector, *g*, meshes. This sector is hung on a fulcrum, *h*, below the stock, and has attached to or formed with it a back, curved arm, or lever, *i*, that on being turned up against the stock, urges forward the sleeve

and closes the cartridge-lid, and that, on being turned in a downward direction, forces back the sleeve and opens the lid. An under guard may be arranged, if desired, to protect this lever, toothed sector, and sleeve.

The sleeve K, which performs the treble function, without the aid of objectionable springs, of opening, closing, and locking, or embracing the cartridge-lid, may be operated in manner described by any other suitable mechanical means than those here indicated.

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

1. The combination, with a fire-arm constructed with a stationary and closed breech or breech-piece and with an opening in the barrel to receive the cartridge, of a hinged flap door or lid, which opens and closes the cartridge-charging aperture, substantially as and for the purposes set forth.

2. The combination, with a hinged flap door or lid, of a sliding collar or sleeve, so that the operation of sliding the collar back will open the flap door or lid, and the operation of moving it forward will close and lock the same, substantially as and for the purposes set forth.

The above specification of my improvement in fire-arms signed by me this 2d day of February, 1859.

THOM. E. SHULL.

Witnesses:

G. YORKE AT LEE,
H. H. YOUNG.