

H. BERDAN.
Breech-Loading Fire-Arm.

No. 101,418.

Patented April 5, 1870.

Fig. 1

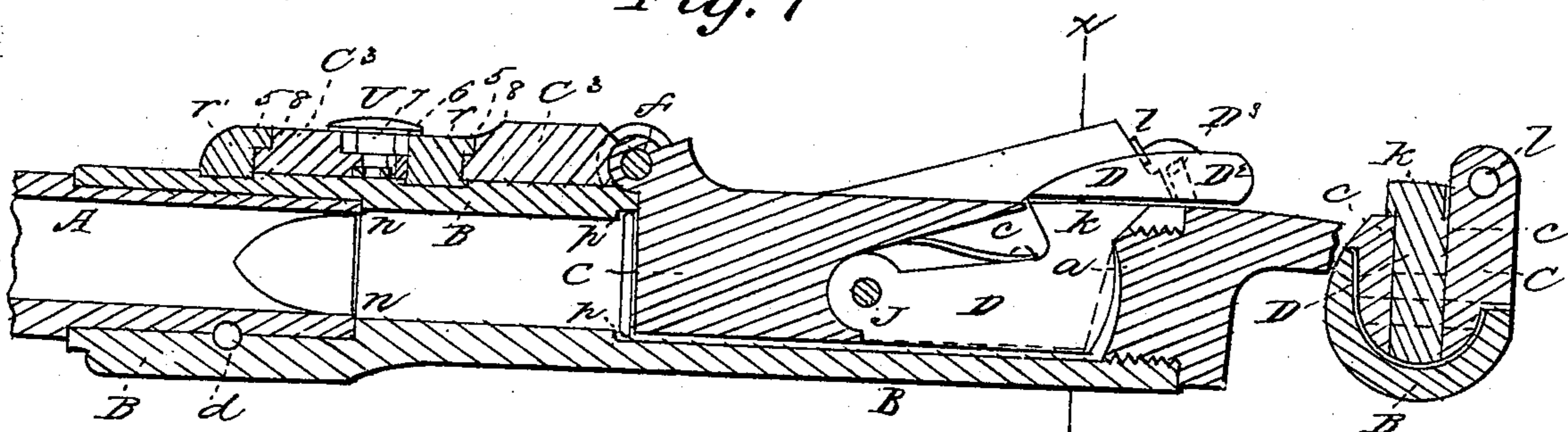
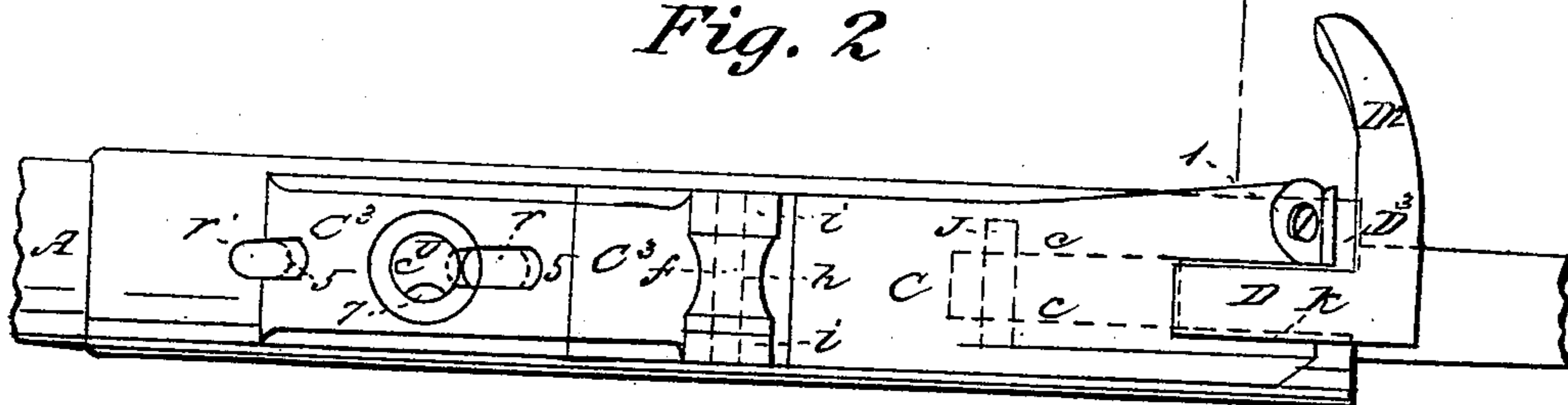


Fig. 2



Witnesses:
A. Sellers
A. Hammer

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United States Patent Office.

HIRAM BERDAN, OF NEW YORK, N. Y., ASSIGNOR TO THE BERDAN FIRE-ARMS MANUFACTURING COMPANY, OF SAME PLACE.

Letters Patent No. 101,418, dated April 5, 1870; antedated March 21, 1870.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, HIRAM BERDAN, of the city, county, and State of New York, have invented certain new and useful Improvements 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 central longitudinal vertical section of the breech parts of a breech-loading fire-arm, illustrating these improvements.

Figure 2 is a top view of the same.

Figure 3 is a transverse section of the same in the plane indicated by the line *x x* in figs. 1 and 2.

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

The first part of the invention relates to breech-loading fire-arms, in which a breech-piece, swinging on a hinge above the barrel or breech-receiver, has hinged or pivoted to its rear end a brace, which drops into the back part of the breech-receiver, and braces the breech-piece, while firing, against a recoil bearing in the rear of the breech-receiver.

In such combination of the breech-piece and brace as heretofore constructed, the only resistance to the doubling up of the hinge or pivot-joint between the breech-piece and brace, and consequent forcing upward of the breech-piece from the receiver, which might be produced by any gas from the exploding charge getting under the breech-piece, has been furnished by small shoulders on the breech-piece and brace under the said hinge or pivot-joint. This part of the invention, which is illustrated in all three figures of the drawing, consists in obtaining a more efficient prevention of the doubling up of the joint by such a construction of the breech-piece and brace as provides upon the brace a shoulder which projects over the rear portion of the top of the breech-piece.

C is the breech-piece, connected with the breech-receiver by a hinge, *f*.

D is the brace connected with the breech-piece by a pivot, *j*. The breech-piece is made long enough to extend nearly to the recoil bearing *a* in the breech-receiver.

The brace is fitted into a longitudinal and vertical mortise, *c*, provided for it in the breech-piece, and a portion thereof, which always projects upward above the brace, is made with a fullness on one side, to form the long shoulder *k*, which is shown in all the figures, and which, when the breech-piece is closed, and the brace down in its place before the recoil bearing *a*, projects over the breech-piece on one side of the mortise *c*, as shown in fig. 3, thereby effectually preventing the doubling up of the joint at *j* until the brace is first raised up.

A spring, *b*, applied within the mortise *c*, between

the brace and a part of the breech-piece above it, prevents any accidental raising of the brace independently of the breech-piece, and consequent liberation of the breech-piece from the shoulder *k* on the brace.

The second part of the invention consists in the construction of a jointed brace, such as is above described, with an extension in a lateral direction, in such form and manner that the said extension serves as a guard for preventing the swinging hammer of the fire-arm, when the breech-piece is not locked by the said brace, from striking upon a firing-pin passing through the breech-piece, and as a handle by which the brace is raised from the recoil bearing and the breech opened.

This part of the invention is illustrated in figs. 1 and 2 of the drawing, and is carried out by forging or otherwise forming on the right-hand side of the brace *D* a lateral projection, *D*¹, which forms the knob or handle projecting over the right side of the breech-receiver in a convenient shape and manner to form a handle, and a part of which, indicated by *D*³, serves to cover the head of the firing-pin *l*, in case, when the breech is closed, the brace *D* is not quite down to its place in front of the recoil bearing *a*, thereby preventing the hammer from striking the firing-pin, and so preventing premature explosion of the cartridge.

When the brace is quite down to its place in front of the recoil bearing, as shown in fig. 1, the hammer will pass over the portion *D*³ of the projection on the side of the brace, and strike the firing-pin *l*.

The third part of the invention relates to the attachment of the swinging breech-piece to the top of the barrel or breech-receiver by a hinge, and consists in a simple mode of providing for easily detaching the breech-piece and reattaching it when desired.

The hinge-joint is connected with the barrel or breech-receiver by a strap-piece or plate, and this strap-piece or plate is connected with the barrel by two fixed studs secured to the barrel, and a button so secured in the strap-piece, that, by turning the said button to one position, the said strap-piece is secured by the studs, and by turning it to another position its liberation from the studs is permitted.

This part of the invention is illustrated in figs. 1 and 2 of the drawings.

O is the strap-piece, forming the attachment of the hinge connection *h i i* to top of the barrel, and having the two outer leaves of the hinge made in the same piece with it.

r r are the two studs, dovetailed or otherwise secured permanently into the barrel, and *U* is the button, fitted to turn in a suitable hole in the strap-piece, into which it is riveted or otherwise secured.

The heads of the studs are of oblong form, as shown in fig. 2, but are each cut away at the front to form a lip, 5.

The rear stud *r* has a slot, of form and size corres-

ponding with its head, provided for its reception in strap piece, and the front stud r' has a notch of a form corresponding with its head cut for its reception in the front end of the strap-piece. The rear ends of this slot and notch are recessed to receive the lips 5 5 of the studs, as shown at 8 8 in fig. 1.

The button U has a broad head with a slit, to receive a screw-driver, and below this head there is a circular shoulder, 6, which is fitted to a countersink in its hole in the strap piece.

The button is represented in fig. 2 with its head cut away to show the shoulder 6.

In one side of this shoulder 6 there is a recess, 7.

The button is so situated relatively to the slot provided in the strap-piece for the rear stud r , that, by turning it to a suitable position, this recess 7 will conform to the front end of the said slot.

To place the strap-piece on the barrel, the button is first turned to the above-mentioned position, that is to say, with its recess 7 toward the hinge-joint, and the strap-piece is placed with its slot and notch each over its respective stud, and the strap piece is pressed down upon the barrel and then drawn forward, so that the lips 5 5 of the studs enter and lap over the recesses 8 8 provided for them in the slot and notch, as shown in fig. 1. The button is then turned half-way round, to turn the notch 7 away from the stud r , and cause the collar 6 to abut against the stud, thereby preventing the strap-piece from moving forward, and so caus-

ing the lips 5 5 of the studs to remain overlapping the recessed ends of the slot and notch, and to hold the strap-piece securely to the barrel.

By turning the button U to a position in which the recess 7 is opposite the stud r , the strap-piece is permitted to be drawn backward far enough to enable it to be lifted up off the studs $r r'$, and with the breech-piece detached from the barrel.

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

1. A shoulder provided on the jointed brace of the swinging or hinged breech-piece, and operating upon the upper part of the breech-piece to prevent the doubling of the joint, substantially as herein described.

2. The extension of the rear end of the jointed brace of a swinging breech-piece, or of the rear portion of a jointed breech-piece in a lateral direction, in such manner that the extension serves both as a guard to the firing-pin and a handle to operate the breech-piece.

3. Securing the strap-piece or plate which forms the attachment of the hinge connection of the breech-piece with the barrel by means of studs $r r'$ on the barrel, and a button, U, in the strap-piece, substantially as herein described.

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Witnesses:

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