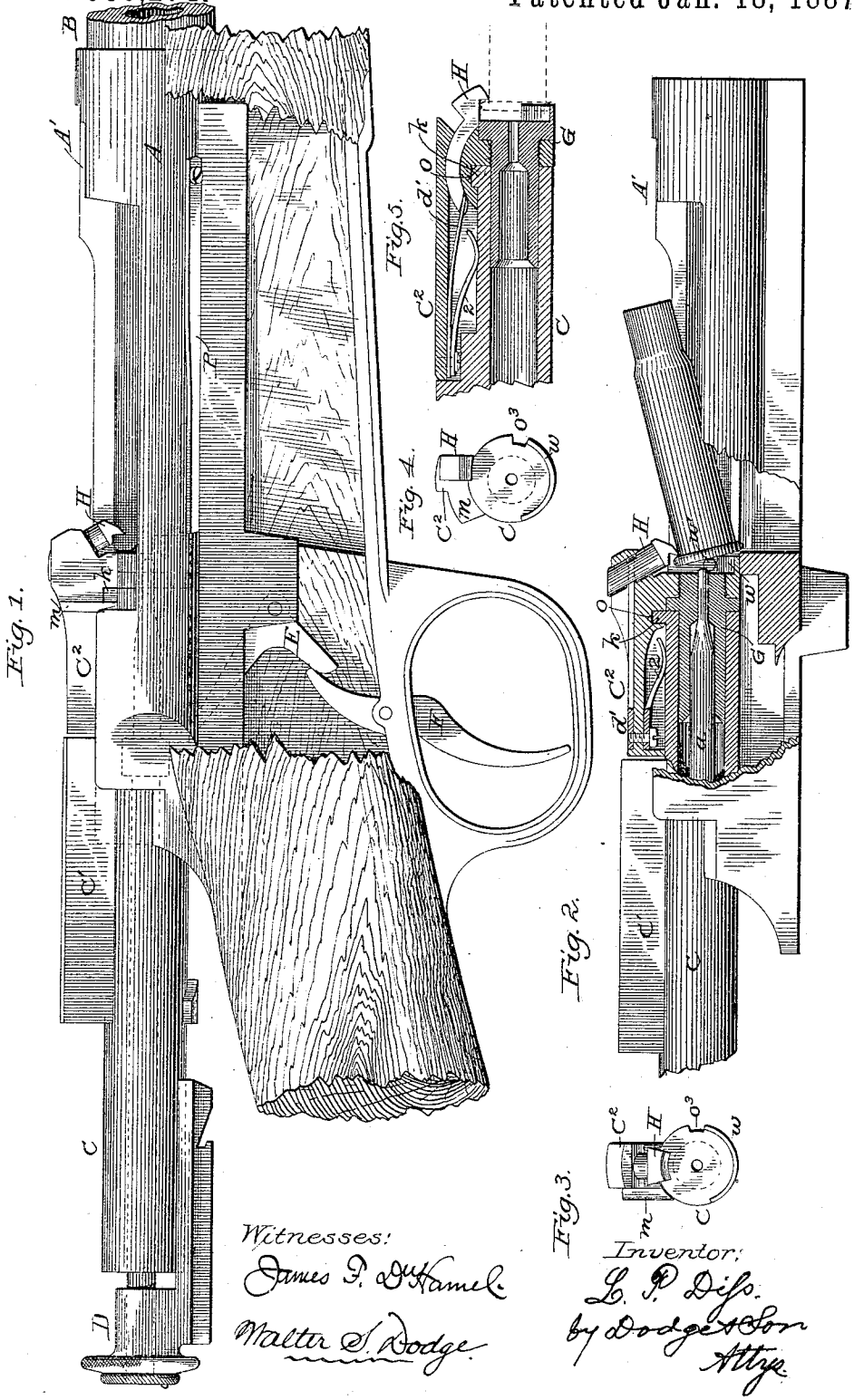
(No Model.)

L. P. DISS.

BREECH LOADING FIRE ARM.

No. 356,274. Patented Jan. 18, 1887.



Witnesses:
James P. McKamel.
Walter S. Dodge.

Inventor:
L. P. Diss.
by Dodger & Son
Attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

LOUIS P. DISS, OF ILION, NEW YORK, ASSIGNOR TO E. REMINGTON & SONS, OF SAME PLACE.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 356,274, dated January 18, 1887.

Application filed July 22, 1886. Serial No. 208,817. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. DISS, of Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Fire-Arms, of which the following is a specification.

My invention relates to that class of fire-arms known as "bolt-guns;" and the invention consists of certain improvements in the construction of the breech-bolt and its attachments, as hereinafter more fully set forth.

Figure 1 is a side elevation of the breech portion of a gun containing my improvements, with the stock broken away. Fig. 2 is a side elevation of the receiver and breech mechanism, with a portion shown in section. Fig. 3 is a front end view of the breech-bolt, shown detached. Fig. 4 is an end view, and Fig. 5 a longitudinal vertical section, of a portion of the breech-bolt, showing a modification of the extractor.

The improvements herein described are applicable to bolt-guns generally; and they consist, first, in constructing the breech-bolt C with a separate nose-piece, G, which has its front end made of the same diameter as the bolt proper, and with a tubular body arranged to fit within the front end of the bolt C, as shown in Figs. 2 and 5. To this nose-piece G, I secure a rib, C^2, which extends backward over the bolt, as shown in Figs. 1, 2, and 5, these parts being preferably united by screwing them together, as indicated clearly in Figs. 2 and 5, as the simplest and best method of construction, though it is obvious that they may be secured together by any other known means, or, if preferred, may be formed integral of a single solid piece. A cavity is formed in the under side of the rib C^2, as shown in Figs. 2 and 5, in which a curved spring, 2, is secured, with its free end bearing on the outer surface of the bolt C with sufficient force or friction to hold the rib C^2 in an upright position, there being a slight cavity or flat place formed on the upper side of the bolt C at the point where the spring bears upon it when the bolt is unlocked, as indicated in Fig. 5, though this is not absolutely necessary, as the spring, if sufficiently stiff, will hold the rib upright without it.

On the top of bolt C, at its front end, I make a lug, *k*, which engages in a transverse groove, *o*, in the under side of the rib C^2 when the bolt is unlocked, as shown in Figs. 2 and 5, by which means the nose-piece is firmly locked to the bolt C at the time the latter is to be withdrawn for extracting the cartridge-shell. The lug *k* is of such a width, however, that when the rib C^2 is turned over to the right, as it is free to be when the bolt is drawn back a short distance, it will be disengaged from the groove *o*, when the nose-piece, as a whole, can be readily detached from the bolt C, there being at that time nothing but the friction of the spring 2 to hold them together.

Around its lower front edge the nose-piece G is provided with a projecting lip, *w*, as shown clearly in Figs. 2, 3, 4, and 5, this lip extending about one-third (more or less) of the circumference of the front end of the nose-piece, and is so located that when the breech is closed it will be directly under the flange or head of the cartridge in the chamber of the gun, there being of course a corresponding recess for it to enter. The object of this lip is twofold—first, to serve as a gas-check and prevent the gas from a defective cartridge from passing down among the cartridges in the magazine below, in case one be used, and, second, as a support for the head of a cartridge-shell against the pressure of the extractor above.

It will be observed that the front end of the rib C^2 projects forward beyond the face of the nose-piece, as shown in Figs. 1 and 2, and to receive this projecting end a recess, A′, is cut in the top of the receiver, as indicated in Figs. 1 and 2, so that when the bolt is closed the nose-piece is held so it cannot turn with the bolt as the latter is turned to lock it fast, and thus the lip *w* is always held securely in its proper place when the gun is fired or closed. As soon, however, as the bolt is drawn back far enough to draw the end of rib C^2 out of the recess A′ the rib C^2 is free to be turned over to the right, when the nose-piece, being unlocked from the bolt, as before explained, can be disconnected from the bolt C, when the latter is free to be drawn back out of the receiver, and thus the parts can be dismounted without

the use of any tools whatever. The rib C^2 is provided on its right-hand side with a projection, *m*, as shown in Figs. 1 and 3, to serve as a stop to limit the backward movement of the bolt when the gun is in use.

In order to obviate the difficulties which not unfrequently occur from the use of spring-hook extractors, I construct the extractor H of a rigid piece of metal, as shown in Figs. 2 and 5. In Fig. 2 it is shown made in the form of a small bolt set obliquely in a hole formed in the projecting nose of rib C^2, its lower front edge being beveled, so as to ride over the flange of the cartridge, while its rear under face is made vertical, so as to get a good firm hold on the front side of the cartridge-flange, as illustrated in Fig. 2. This extractor is seated in its hole in the rib in such a manner that it has a free oblique movement therein far enough to enable it to ride over the flange of the cartridge-shell, it being pressed down by a spring, *d'*, secured in a recess in the upper side of rib C^2, and has its front end resting in a hole made in or through the extractor H, as shown in Fig. 2. It will be observed that the position of the extractor H is such that when force is applied to extract the cartridge-shell the extractor will be bound in its hole, because the force exerted will be at right angles, or nearly so, to its axial line, and this, together with the force exerted by the spring, will cause it to take and keep a good firm hold on the cartridge, and as the extractor itself is a single solid rigid piece and is held by the rigid rib C^2, which is securely locked to the bolt C by the lug *k*, it will be seen that I am thus enabled to produce a most efficient and very strong extractor, and one that is not liable to break or get out of order.

In Figs. 4 and 5 I have shown the extractor modified in form, but still composed of a single rigid piece and operating on the same general principle. In this case the body of the extractor is formed in the segment of a circle, and is seated in a correspondingly-shaped recess or groove made for it in the rib C^2, as shown in Fig. 5. The front end or nose of this extractor H is beveled to cause it to ride over the flange of the cartridge when the bolt is thrust forward, the same as the one previously described, and its rear end is connected to the free end of a spring, *d'*, which is secured in the same recess in the under side of rib C^2 and by the same screw as the friction-spring 2, as clearly shown in Fig. 5. With these parts thus constructed and arranged it will be seen that when the breech-bolt C is thrust forward to close the breech of the gun, the lower beveled nose of this extractor will strike against the rear face of the flange of the shell in such a manner as to cause the extractor to move backward in its curved seat, at the same time pressing down the front end of the spring *d'*, and thus permit the nose of the extractor to rise and ride over the flange of the cartridge-shell, and that the instant the vertical face of the hook of the extractor has passed to the front side of the flange of the shell the spring *d'*, acting to force the extractor forward in its seat, will throw its front end down, and thus cause it to engage with the flange of the cartridge-shell. If, now, when the parts are in this sition, the bolt be pulled backward, the strain brought to bear upon the flange by the hook of the extractor will tend to pull the extractor in a right line forward, and that it cannot thus move, because of its curved form and curved seat. If it moves at all it must move in a curved path, which will simply force the hooked end more firmly down in front of the flange of the shell, and as the lower edge of the flange rests on and is firmly supported by the lip *w* it will be seen that the force exerted will cause the extractor to tighten its hold upon the cartridge-shell. The same is true also of the extractor shown in Fig. 2, for the pull upon it, in drawing back the bolt, will tend to pull the extractor downward, if it moves at all in its seat, because of its inclined position, and thus it, too, will be made to grasp the shell still more firmly, the shell at such time being firmly supported by the lip *w*, so that it cannot move or slip away from the extractor, as shown by its position in Fig. 5. It is of course obvious that this self-tightening style of extractor may be applied to bolt-guns in which the bolt is made without the separate nose-piece, it only being necessary in such case to secure to the bolt at its front end a rib, C^2, of such size as may be necessary to hold the extractor and its spring, and arrange it so that the bolt may be turned independently of the rib far enough to lock and unlock the bolt; but I prefer to use the separate nose-piece, substantially as shown and described.

In order to release the shell from the extractor as the bolt is retracted, the gun is provided with the usual stud or projection located in the receiver at the proper point for the head of the shell to strike against when it has been drawn entirely out of the chamber of the barrel, by which it will be tipped upward, as shown in Fig. 2, and thus be thrown out of the arm. This stud *w'* is shown in Fig. 2 projecting from the inner face of the left-hand wall of the receiver just on a line with the upper edge of the lip *w*, there being of course a small groove in the side of the bolt and nose-piece, as shown at o^3, Figs. 3 and 4, to permit the bolt to pass this stud *w'*.

The firing-pin, cocking-piece, and other parts may be constructed in the usual manner, though I prefer to make these parts in the manner described in a separate application filed of even date herewith.

Having thus described my invention, what I claim is—

1. In combination with the breech-bolt C, the detachable nose-piece G, provided with a rib, C^2, having a friction-spring, 2, connected thereto and arranged to bear on the bolt C, substantially as and for the purpose set forth.

2. The detachable nose-piece G, provided

with the rib C^2, having a transverse notch or recess, *o*, in combination with the breech-bolt C, provided with the lug *k*, arranged to engage in said notch when the bolt is turned to the unlocked position and to disengage therefrom when turned to the locked position, substantially as shown and described.

3. In combination with the rotating breech-bolt C, the rigid extractor H, seated in the rib C^2 of the non-rotating nose-piece G, with a spring, *d'*, arranged to press the extractor down, substantially as shown and described.

4. In combination with the breech-bolt C, the nose-piece G, provided with the projecting lip *w*, arranged to serve both as a gas-check and as a support for the cartridge, substantially as set forth.

LOUIS P. DISS.

Witnesses:
EDMOND ROCHE,
THOS. RICHARDSON.