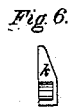
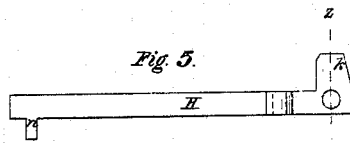
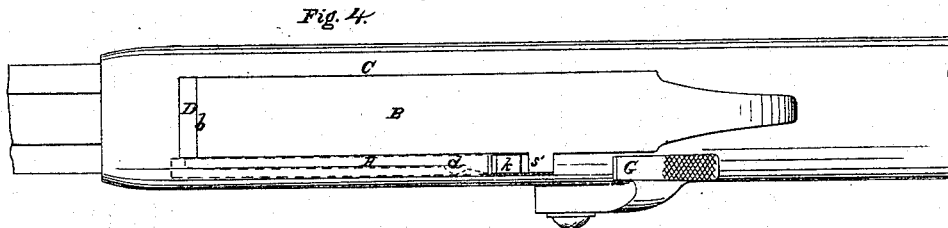
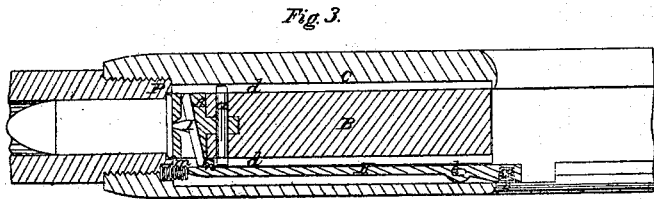
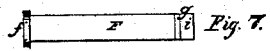
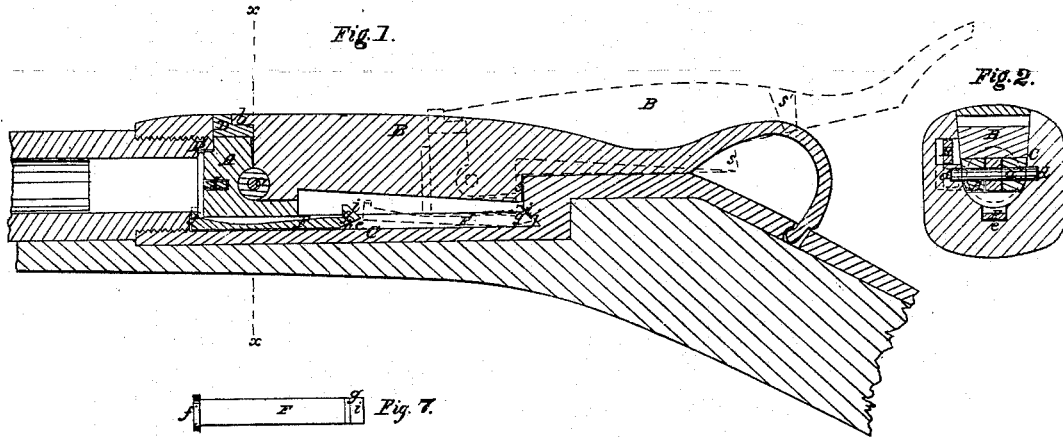


*J. W. Cochran,
Breech Loader.*

No 63217.

Patented Mar 26, 1867.



Witnesses
J. M. Coombs
G. W. Reed

J. W. Cochran
Inventor,
for his Attorneys
Brown, Coombs & Co.

United States Patent Office.

JOHN WEBSTER COCHRAN, OF NEW YORK, N. Y.

Letters Patent No. 63,217, dated March 26, 1867.

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, JOHN WEBSTER COCHRAN, of the city, county, and State of New York, have invented a certain 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 drawing, which forms part of this specification, and in which—

Figure 1 represents a vertical longitudinal section of the breech part of a fire-arm illustrative of my invention.

Figure 2, a transverse section through the line $x x$ in fig. 1.

Figure 3, a horizontal section of the same.

Figure 4, a plan thereof.

Figure 5, a side view of the lever that operates the detonating pin.

Figure 6, a transverse section thereof through the line $z z$ in fig. 5; and

Figure 7, a plan of my improved shell extractor detached.

Like letters refer to like parts in all the figures.

My invention consists, firstly, in a novel construction of and mode of applying and operating a movable breech. It further consists in a peculiarly constructed cartridge-shell extractor and mode of operating the same by the action of the movable breech, said extractor being a detached portion of the gun and lying within the breech-receiver. It likewise consists in a peculiar combination, applicable to outside hammer-pieces or arms, of devices for operating the pin which explodes the cartridge; and it furthermore consists in a combination, with a movable breech arranged to open by lifting and sliding backwards, of a rubber or elastic packing, operating not only to exclude dust or dirt and make tight the joint, but also, on closing, serving to prevent slamming of the movable breech against the rear end of the barrel or chamber. This, my invention, in all or several of its parts may be applied to fire-arms which originally were muzzle-loaders, by counter-boring the barrel from its rear end to the diameter of the exterior of the largest part of the cartridge-shell, and mortising and otherwise forming the stock in the rear to accommodate the movable breech with its accompanying parts.

I will now proceed to describe the same with reference to the accompanying drawing, in which the movable breech is shown as made up of a front breech-piece, A, and brace, B, jointed thereto at a , and extending backwards. Said breech is made, when closed, to snugly lie in an oblong opening in the breech-receiver C, within which latter the breech-piece A is fitted, so as to slide backwardly on lifting the rear ends $s s'$ of the brace out of the receiver C. Guides or grooves may be established internally in the sides of said receiver to direct the breech-piece A in its course. An India-rubber packing piece, D, is or may be inserted between a forward protruding lip, b , of the brace and upper surface of the breech-piece, to exclude dust or dirt, and give a moderately tight yet elastic hold on the whole breech, when closed, to keep it so, and serving to prevent slamming of the breech-piece against the rear end of the barrel or chamber E, by the rubber, in sliding to and closing the breech, first coming in contact and requiring to be compressed in order to shut down the brace. This rubber packing is so fitted in the breech as that it may be readily drawn out and a fresh packing substituted when required. Being elastic it does not restrain the self-adjustment of the breech-piece to the barrel or chamber. The jointed connection of the brace B with the breech-piece A, and mode of opening the breech by slightly lifting the rear end of the brace and pulling or drawing it backwards in line with the barrel, and allowing the breech-piece to be guided in its course preferably by the joint pin a travelling in grooves d in the receiver C, forms a simple and effective breech-loading arrangement, which gives a self-adjusting action to the breech-piece, on closing, to make tight its junction with the chamber P. Such movable breech, it will be seen, materially differs from others employing a brace. F is a cartridge-shell extractor, constructed as shown in the drawing, for operating on a centre-fire, or other cartridge, provided, as is commonly the case, with a flange around its rear end; but by suitably forming the forward end of said extractor it may be made to gripe on and remove cartridges having no end flange. This extractor is a detached or loose piece of metal arranged to fit freely in a groove, e , running longitudinally along the bottom of the interior of the breech-receiver C. It is or may be made of a concave or double incline configuration on its upper face, and with a flange or upwardly projecting lip, f , at its front end to clip the cartridge on the inside of its end flange so as to remove the shell, after explosion, by pulling on or against the flange. At its rear end said extractor is not only provided with an

upwardly projecting lip, *g*, forming a head thereto, but said head and the rear end of the body of the extractor are sloped or cut away underneath, as at *k*, so that on lifting the rear end of the brace B, and drawing back the breech, the lower end of the breech-piece A, which projects below the body of the brace, is made to catch against the back lip or head *g* of the extractor, and draw with it the cartridge-shell out of its chamber into the receiver C, until the upper rear portion of the head *g*, which is bevelled, as at *i*, strikes an inclined recess, *j*, in the rear end of the receiver, which causes the back end of the extractor to be depressed, and its forward end to be suddenly tilted up, whereby, and on simultaneously raising the brace B, the cartridge-shell is so jerked upwardly as to be readily removed from the receiver C. This action of the extractor and brace is represented by red lines in fig. 1. To secure this action of the extractor there is none of that complication of parts which is peculiar to other arrangements for effecting a like object. By reason of the position and mode of operating the movable breech, the arm of gun is represented as having its hammer on the outside. G is the hammer thereof, which, on the breech being closed, is made, when firing, to strike a head, *k*, of a sliding-rod, H, within the breech-receiver on the hammer side. This sliding-rod, which has its longitudinal movement controlled by a pin, *l*, projecting through a slot in the rod, bears at its front end against a spring, *m*, that serves to throw and keep it back when not acted upon by the hammer. Near its front end is a laterally and downwardly projecting lip, *n*, that, as the hammer in striking, urges forward the rod, gives the requisite abrupt motion to a detonating pin, I, having, for centre-fire cartridges, a centre point or arm, and being arranged within the body of the breech-piece A. For other cartridges the detonating pin may be otherwise arranged. To enable the protruding end of the detonating pin to pass the operating lip *n* of the rod H, on lifting the brace and drawing back the breech, said rod is so fitted in the receiver C as that it may slightly rock on the pin *l*, and on lifting the brace its rear end be forced inwardly and its front end outwardly by means of a spring, *o*, let into the rear end of said rod on its one side. This allows the detonating pin to pass the lip *n*, while, on shutting the breech, the brace B in closing is made to bear against an inclined lateral formation of the head *k*, which forces outwardly the rear end of the rod H, and its front end inwardly to put in striking position again the lip *n*, with the protruding end of the detonating pin.

Having described my invention, what I claim, is—

1. The sliding breech-piece A, and swinging brace B, jointed together at *a*, and arranged for operation substantially as shown and described.
2. The arrangement of the elastic packing D, with or in the movable breech at its forward end, and operating not only to hold said breech, when closed, and make tight its joint in front, but serving, without restraining the self-adjustment of the breech-piece, to prevent concussion of the latter against the gun chamber on closing the breech, essentially as specified.
3. The cartridge-shell extractor F, constructed with its rear end inclined or bevelled on its upper and lower sides, as at *i h*, operating in connection with the inclined recess *j*, in the rear end of the receiver C, substantially as and for the purpose set forth.
4. The sliding-rod H with its forward lip *n*, and rear projection or head *k*, hung and arranged for operation in combination with the brace B, hammer G, and detonating pin I, substantially as specified.

J. W. COCHRAN

Witnesses:

HENRY T. BROWN,
J. W. COOMBS.