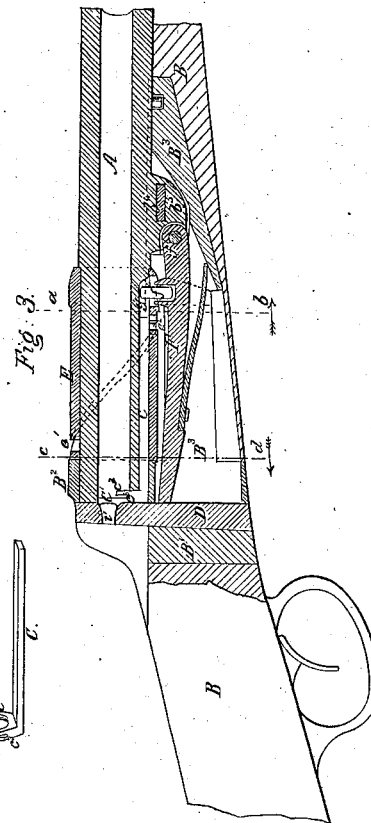
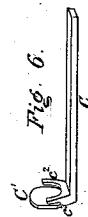
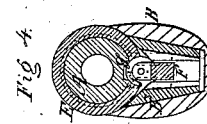
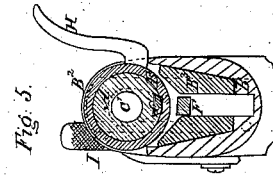
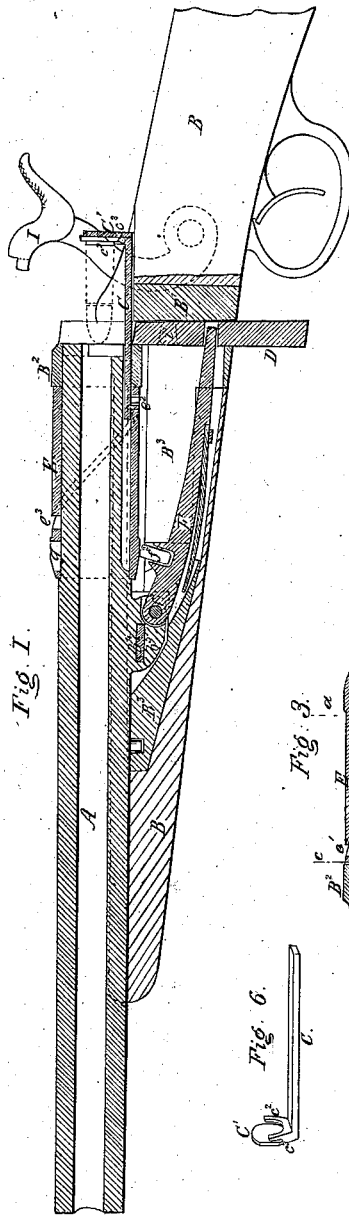
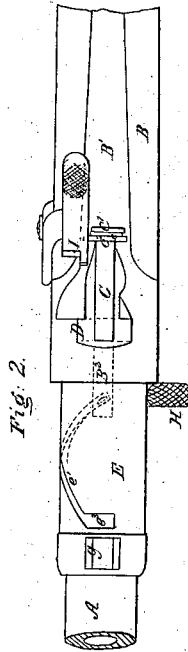


*J. Davis*  
*Breech-loading Fire arm.*  
*No. 51258.*      *Patented Nov. 28. 1865.*



*Witnesses*  
*W. H. Forbush*  
*B. H. Muehler*

*Inventor:*  
*Jarvis Davis*

# UNITED STATES PATENT OFFICE.

JARVIS DAVIS, OF BUFFALO, NEW YORK, ASSIGNOR TO PATRICK SMITH,  
OF SAME PLACE.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 51,258, dated November 28, 1865.

*To all whom it may concern:*

Be it known that I, JARVIS DAVIS, of the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Breech-Loading Rifles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

This invention relates to that class of breech-loading fire-arms in which prepared metallic cartridges are used; and its nature consists, first, in the peculiar construction of a sliding cartridge-holder, by which the cartridge is entered into and the exploded shell removed from the barrel; second, in operating said cartridge-holder by a reversing partial rotation of a spirally-grooved sleeve turning upon the breech end of the barrel; third, in the operation of a sliding abutment by the same movements of the sleeve which operate the cartridge-holder through the medium of a vibrating spring-lever and cam formed on said sleeve.

In the accompanying drawings, Figure I is a sectional elevation of my improved rifle, the parts being in position for loading—*i. e.*, the sliding abutment thrown down and the cartridge-holder out. Fig. II is a plan of same. Fig. III is a reverse sectional elevation, the parts being in their position when the arm is loaded. Fig. IV is a cross-section on line *a b*, looking in direction of the arrow. Fig. V is also a cross-section on line *c d*, looking in direction of arrow. Fig. VI is a detached perspective view of the sliding cartridge-holder.

Letters of like name and kind refer to like parts in each of the figures.

A represents the barrel of the gun, B the stock, and B' a metallic frame forming part of the stock, and by which the connection of the barrel to the stock is effected, said frame being formed with a socket, B<sup>2</sup>, which receives the breech, and having an arm-extension, B<sup>3</sup>, running forward in under the barrel, to which the barrel is secured by a key, b<sup>4</sup>, passing through the arm and the lug b<sup>5</sup> formed on the barrel. This manner of securing the barrel to the stock renders its removal or connection easy, at the same time making a very strong and effective fastening.

C C' represent the sliding cartridge-holder, the dovetail shank C of which fits into a corresponding dovetail groove cut longitudinally in the under side of the breech end of the barrel, so that the holder moves back and forth therein parallel with the bore of the barrel. The back plate, C', turned at right angles to the shank, is of the size and shape of the base of the cartridge used, and has a concave bed, C<sup>2</sup>, projecting from the forward side thereof, which bed has a groove, as shown at C<sup>3</sup>, to receive the flange of the cartridge. When the holder is thrown back, as shown in Fig. I, the cartridge may be placed therein from the top, as shown by the dotted red lines, it resting on the bed with its flange in the groove and base against the back plate, its axis in line with (or nearly so) that of the barrel, so that, the holder being moved forward, the cartridge is carried with it into the barrel.

The breech end of the barrel is countersunk to receive the back plate, C', so that when the holder is moved into its forward position the back plate comes flush and even with the end of the barrel. After the cartridge is discharged the metallic shell remaining in the holder is withdrawn from the barrel by the backward movement thereof, and may be easily and quickly disposed of.

D represents the abutment working up and down behind the breech end of the barrel through a mortise made in the metallic frame B'. When up it bears against the back plate of the cartridge-holder and receives the recoil occasioned by the explosion of the cartridge. The movements of the abutment and the cartridge-holder are at right angles to each other, and have a definite and mutual relation—*i. e.*, as soon as the abutment is thrown down the cartridge-holder is thrown back, passing over the top of the abutment and bringing the parts into position for loading, and as soon as the cartridge-holder is moved into its forward position the abutment is thrown up behind the cartridge-holder, giving the loaded position of the parts. These combined movements are produced as follows:

E represents a sleeve or hollow cylinder at the breech end of the barrel, turning easily thereon, being held from any longitudinal movement by a shoulder on the barrel in front and

by the shoulder of barrel-socket B<sup>2</sup> on the metallic frame B' at the rear. This sleeve has a spirally-cut groove or slot, *e'*, which receives a projecting pin or stud, *e*<sup>2</sup>, on the shank C of cartridge-holder, so that as the sleeve is turned in one direction the cartridge-holder will be thrown back and out, and when turned in the opposite direction will be thrown in. The spiral is of such pitch that a partial revolution will give the required throw or movement to the holder.

F represents a spring-lever, having its fulcrum at *f* and its moving end connecting with the sliding abutment, so that its vibration will operate the abutment. The lever carries a small friction-roller, *f*<sup>2</sup>, which, as the sleeve is turned, drops into the cam-notch *g* in the sleeve and allows the spring to raise the abutment; but the turning of the sleeve in the opposite direction throws it out of the notch, and consequently throws down the abutment.

To prevent the spiral groove from throwing out the cartridge-holder until the abutment has been thrown down, it is made to terminate in a groove or slot, *e*<sup>3</sup>, at right angles to the axis of the sleeve, which allows the sleeve to turn sufficiently to throw down the lever and abutment before giving motion to the cartridge-holder, and at the same time causes the return movement of the holder to be completed before the abutment can rise.

The sleeve is provided with a thumb-piece, H, by which its movements may be easily and quickly effected.

The blow of the hammer I is communicated to the flange of the cartridge, which contains the fulminate, through a percussion-pin, *i*, inserted in the abutment at the proper point, the back plate of the cartridge-holder being cut away slightly to expose the flange of the cartridge to its action. The percussion-pin is made slightly tapering from its front end, and the mortise in the abutment to a corresponding taper, so that, being inserted from the front side of the abutment, it is held in place and prevented from falling out by the front side of the mortise in which the abutment works. The front end of the pin is made convex or rounded, so that in its movement with the abutment it is not liable to catch or interfere with such

movement. By this construction of the percussion-pin a spring is dispensed with and increased simplicity and durability in the device obtained.

The manipulation of this arm in loading and firing may be briefly summed up as follows: The sleeve is turned, the hammer being first thrown back by the thumb-piece in a direction (in this instance from left to right) to throw down the abutment and throw out the cartridge-holder into position to receive the cartridge, which being placed therein and the reverse or return movement of the sleeve given, the cartridge will be carried by the movement of the holder into position in the barrel and the abutment back into its place, and the piece be ready for firing. This done, it may be reloaded by the same movements, except that the shell of the exploded cartridge must be removed from the holder after being withdrawn from the barrel by the outward movement thereof. This may be done by a slight jerk or quick movement of the piece, without trouble or loss of time.

The movements of the sleeve may be given entirely by the left hand and the piece held at the same time, thereby leaving the right hand free to insert the cartridge in the holder, and when necessary to remove the exploded shells.

It is believed that this fire-arm is unequalled in its simplicity of construction and manipulation, as well as in its durability and freedom from disarrangement.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The spirally-grooved sleeve E, provided with a thumb-piece, H, arranged and used for the purpose of imparting the requisite movements to the cartridge-holder, substantially as set forth.

2. The combination of the sleeve E, spring-lever F, and sliding abutment D, when arranged and operating in the manner and for the purposes set forth.

JARVIS DAVIS.

Witnesses:

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B. H. MUEHLE.