2 Sheets—Sheet 1.

J. DUVAL.

Breech-Loading Fire Arm.

No. 112,565. Patented March 14, 1871.

Fig. I.

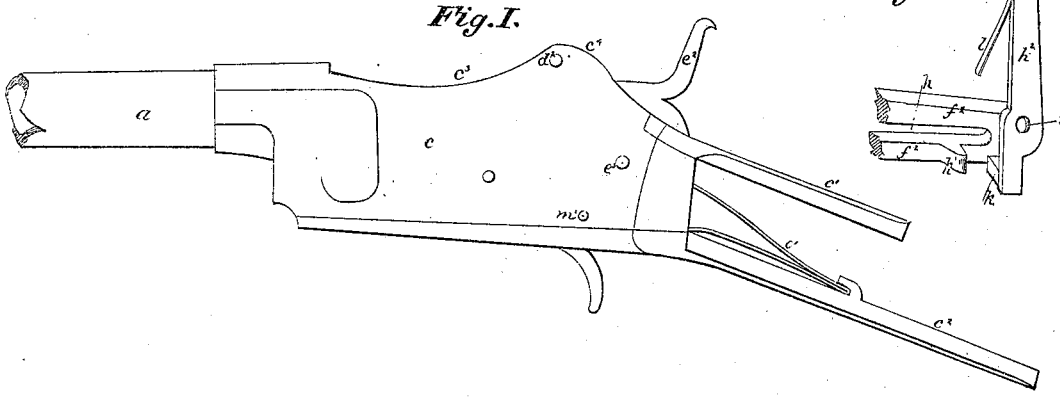


Fig. IV

Fig. II.

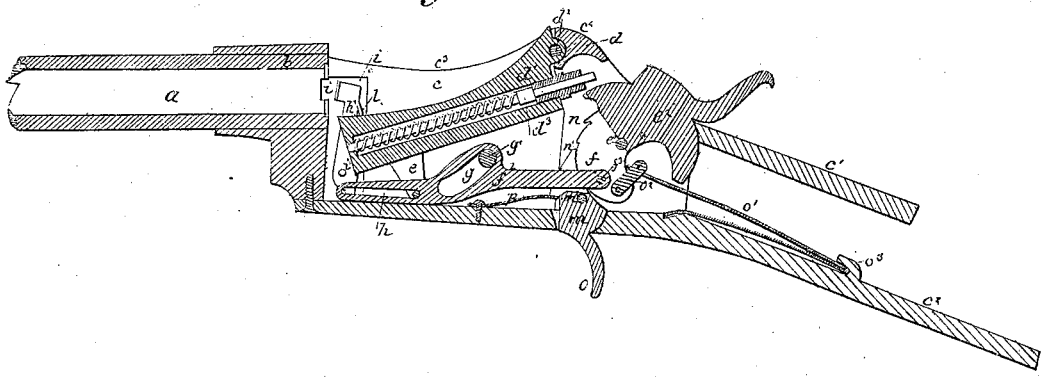
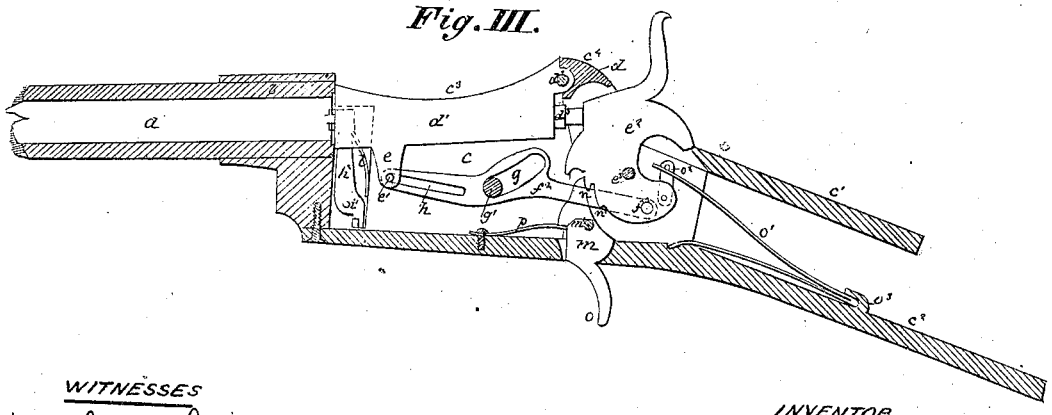


Fig. III.



WITNESSES

Charles Legge

A. Burnett

INVENTOR

J. Duval

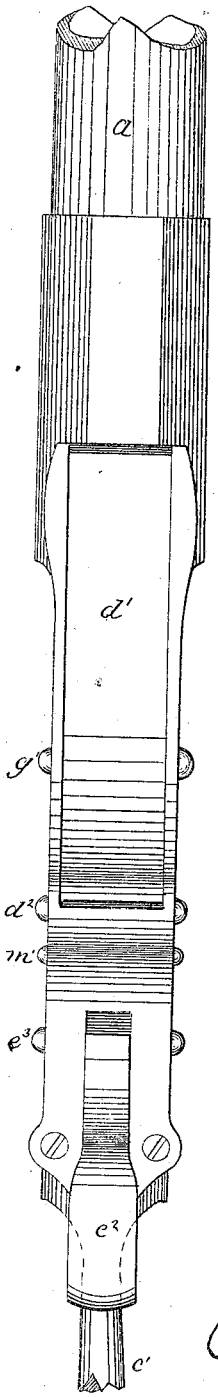
2 Sheets—Sheet 2.

J. DUVAL.

Breech Loading Fire Arm.

No. 112,565. Patented March 14, 1871.

Fig. V.



WITNESSES

Charles Legge
A. Christ

INVENTOR

J. Duval

United States Patent Office.

JOSEPH DUVAL, OF LAPRAIRIE, CANADA.

Letters Patent No. 112,565, dated March 14, 1871.

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, JOSEPH DUVAL, of the town of Laprairie, in the county of Laprairie, in the Province of Quebec, Canada, mechanic, have invented new and useful "Improvements on Breech-loading Rifles;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, where—

Figure I represents a side elevation of the rifle.

Figure II represents a section of the rifle.

Figure III represents a sectional elevation of the rifle.

Figure IV represents a detail of the rifle.

Figure V represents a plan of the rifle.

This invention has reference to improvements on breech-loading rifles, for simplifying their parts, rendering them more durable as regards wear, and capable of being loaded and discharged with greater ease and rapidity than those at present in use, and, at the same time, discharging the projectile used with greater force.

In the drawing hereunto annexed similar letters of reference indicate like parts.

Letter *a* is the rifle or other barrel, of ordinary construction, provided with a screwed end, *b*, for attaching the box *c* in the ordinary manner. This is provided with extensions, c^1 and c^2, for connecting with the stock, in the ordinary manner.

The box *c* consists of two flat sides, of the form indicated in the drawing, having a space between them, in which the trigger and other works are placed. These are constructed in the following manner:

The top edges of the sides of the box *c* are curved in the form shown at c^3, forming a projection, c^4. At this point the sides meet across, forming a resistance, *d*, for the tumbler d^1, attached by its end at this point by the pivot d^2.

The top side of the tumbler d^1 is made to conform to the curved configuration of the sides at c^3, and of sufficient length that, when it is raised to cover the end of the barrel *a*, it will do so closely, but without bearing or friction, being then in the position shown in Fig. III.

Through the body of the tumbler d^1 a hole is bored for holding the needle d^3, constructed in the ordinary manner for this class of arm.

On the bottom side of the tumbler a double projection, *e*, is formed, and through its extremities a pin, e^1, passes.

In the resistance *d*, and as shown in the drawing, an opening is formed for the reception of the hammer e^2, attached in its position to the sides *c* by a pivot, e^3, on which it freely partially rotates.

In the lower part of this hammer a slot, *f*, is formed for the end of the lever f^2 to enter into, and is attached to the hammer in the position indicated by the pivot f^3.

The lever f^2 is provided with a slotted hole, *g*, working on a pin, *g'*, forming the fulcrum for the lever to work upon.

The other extremity of the lever is provided with a slot, *h*, through which the pin e^1 passes.

In Fig. IV is shown the end of the lever f^2 and slot *h*.

On the side of the lower part of the lever a projection, h^1, is formed, for the purpose of operating the extractor h^2, situated in a recess, *i*, formed in *c* at the back of the tumbler, and held in position by a pivot, *i'*, the projection h^1 acting on the projection *k* of the extractor, causing it to come to the position shown in Fig. II, the projection *k'* at the top of the extractor being formed to come under the flanged head of the cartridge and start it out of the barrel *a* with such sudden action that it is projected over the top of d^1, and falls to the ground, a spring, *b*, being provided to cause the extractor to return to its position when not acted upon by the projection h^1.

m is the trigger, attached, by the pivot-pin *m'*, to the sides *c*, and so situated that its upper end will intermesh with the notches *n n'* in the front side of the hammer, its lower end *o* being of the ordinary form, for the finger of the operator to act upon.

The hammer e^2 is actuated by a spring, o^1, attached to the hammer by a link, o^2, and held in position by a projection, o^3.

The trigger *m* is also actuated by a spring, *p*, causing it to bear upon the front side of the hammer e^2, and intermesh with the notches *n* n^1, when the hammer is in the position for so doing.

Having now described the construction of the arm, I will proceed to explain its operation.

By pulling back the hammer e^2 so that the trigger *m* hooks in the notch *n*, the tumbler d^1 falls to the position indicated in Fig. II, caused by the pushing forward of the lever f^2, and consequent sliding of the slot *g* upon the pin *g'*. At the same time the pin e^1 is caused, by the peculiar action of the lever f^2 and slot *g* on the pin *g'*, to slide to the back end of slot *h*, giving room for the entering of the cartridge into the end *b* of the barrel *a* by the hand of the operator, after which the finger is pressed on the lower end *o* of the trigger, disengaging the upper end from the notch *n'*. The hammer e^2 now partially revolves on the pivot e^3, drawing back the lever f^2, and simultaneously raising the tumbler d^1 to the position shown in Fig. III, and, at the same time, driving the end of the needle d^3 into the cartridge and exploding it, when the hammer is again raised and drawn back to the position shown in Fig. II, causing the projection h^1 to act upon the extractor and draw the exploded cartridge.

Having now described my invention, to which I have given the name of "the Duval breech-loading rifle," and the manner in which the same is operated, I beg to state that I disclaim all other forms of breech-loading rifles now in use.

What I claim as my invention, and wish secured by Letters Patent, is the new and useful improvements on breech-loading rifles, as follows:

1. The slotted lever f^1, in combination with the tumbler d^1 and hammer e^3, the latter being adapted to operate the tumbler by means of the sliding movement of the lever, as shown and described.

2. The novel combination of the lever f^2, slotted hole g, pin g', slot h, pin e, tumbler d^1, and extractor h^2, all working together and with other parts of the gun substantially in the manner and for the purpose described.

Montreal, 12th day of September, A. D. 1870.

JOSEPH DUVAL.

Witnesses:

CHARLES LEGGE,

A. VIN MET.