

UNITED STATES PATENT OFFICE.

J. JARRE, OF PARIS, FRANCE.

IMPROVEMENT IN REPEATING FIRE-ARMS.

Specification forming part of Letters Patent No. 35,685, dated June 24, 1862.

To all whom it may concern:

Be it known that I, J. JARRE, of Paris, in the Empire of France, have invented certain new and useful Improvements in Fire-Arms; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which the several figures represent views in elevation, section, and plan of the invention, as applied in illustration to a fowling-piece.

The object of my invention is to so construct, arrange, and combine the operative parts of guns, pistols, cannon, carbines, or other fire-arms, as to enable them through one barrel to be fired successively a given number of times without any time being consumed for the loading, swabbing, cocking, &c.

My improved gun presents the advantage of being easily and economically manufactured, and its essential and characteristic feature consists in the contrivance of a piece independent from the gun or pistol, whereby the loading or charging of the gun is effected, said piece being readily adjustable to the gun and operated by a mechanism located either laterally above or below the barrel, whereby the cartridges are brought successively in apposition to the barrel, and when so brought in apposition thereto the cap is exploded and the charge forced into and out of the barrel.

In the annexed drawings, Figure 1 is a longitudinal section of a fowling-piece with my improvement applied to it. Figs. 2, 3, 4, 5, and 6 represent views of the breech-bar upon all its faces. Figs. 7 and 8 are two views of a piece of adjustment for establishing permanent contact between the rear extremity of the barrel and the orifices of the breech-bar that correspond to and with the cartridges. Fig. 9 is an end view of the guide-bar, and Figs. 10, 11, and 12 are detail views of the rack that simultaneously actuates both the hammer to be cocked and the breech-bar to slide the distance necessary to place a new cartridge in rear of the barrel.

To enable others skilled in the art to make and use my improvement, I shall now proceed to describe its construction and operation.

The trigger *a*, pivoted at *b'*, is provided with a cogged segment meshing in with a rack fixed to the under side of the slide-piece *b*, capable

of a reciprocating motion in the grooved guide *d*. The slide-piece *b* carries a hook, *e*, projecting from above its upper surface, and is held raised, as shown in Fig. 1, by means of a spring, *f*. It also carries a spring-blade, *g*, which is designed, as will be hereinafter explained, to produce the progressive advance of the breech-bar. When the slide-piece *b* advances the hook *e* falls in with and catches the tail *f'* of the hammer *c*, and causes the latter to rise until by the action of the mainspring *m* it becomes locked. The hammer is dropped and caused to strike the cap, if there be any, by the pulling of the trigger-spring still farther back, thus forcing the mainspring to resume its former position, and the hook *e* to release the tail *f*. The hammer when cocked is on a level with the sight-piece. It therefore does not interfere with the taking of aim. To facilitate the movements and operations of the hammer it may be provided with a friction-roller, as shown in the drawings.

The hammer, trigger, slide-rack, and the several springs above referred to are all inclosed in a common gun-lock case, *n*, which is screwed to the butt *o* in the usual manner.

Between the gun-lock and the rear end of the barrel *q* is located the guide-bar *p*. This guide-bar is screwed onto the barrel, and is furnished with a ring, *r*, which is interposed to secure contact between the orifices of the breech-bar and that of the barrel, and which is provided with projections *W* to allow the escape of the gases engendered by the ignition of the powder during the act of cocking. By this arrangement the advantage is gained that numerous successive discharges of the gun may be effected without heating the band. The ring *r* is shown in detail in Figs. 7 and 8, and in Fig. 9 it is represented in connection with the guide-bar. The two pieces are held together by means of the screws *s*, which also serve as the means of adjustment in case wear, in consequence of constant friction, should have rendered the fit or contact of the parts imperfect.

The guide-bar is united with the lock-case and the barrel by means of a screw. The guard *t* is fixed to the case *n* and the gun-stock *v*.

The breech-bar represented in Figs. 2, 3, 4, 5, and 6 is of a rectangular form, and is provided with cylindrical openings which are des-

tined to receive the cartridges. The openings are somewhat contracted in front, so that the projectile shall be compressed on being thrust out of the cartridge-case. One of the sides of the breech-bar is made of a movable face-plate. It is pivoted at one corner. By turning this plate on the pivot the orifices will be disclosed to receive the cartridges. When the cartridges are placed in their proper positions they are kept in place by means of a latch, *c'*, arranged upon one of the smaller sides or faces of the bar.

Cams or inclined planes *a'* are set onto or cut into the under face of the breech-bar, for the purpose of being acted upon by the spring *g* fast in the slide *b*. Projections *b'* are arranged upon the face opposite. They present concave surfaces, and are designed to support the hammer during the intervals between the successive charges, and to allow the transverse sliding of breech-bar while the hammer is at rest—*i. e.*, before its being cocked.

The cartridges used in connection with this gun may be the ordinary metallic case, or preferably a cartridge made partly of paper and partly of metal, the bottom being in the form of a cap which contains a pin that when actuated by the hammer is depressed with considerable force into a cavity, cup, or receptacle of fulminate of mercury or other explosive compound by which the powder in the paper cylinder is ignited.

Having thus fully described the construction, arrangement, and combination of the parts constituting my improved gun, the operation will be readily understood and needs no special comment—suffice to say, that the gunner may have several breech-bars for each gun. These bars may be charged and held in readiness to be used in quick succession. One gun may be worked effectively by two men, one constantly loading the breech bars, while the other is firing the gun almost without any intermission.

I do not confine myself to any given number of openings in the breech-bar, it being obvious that this may be varied according to the judgment of the manufacturer. I have found

that two sizes—viz., with four or with ten cartridges—answer all possible requirements.

In conclusion, I would observe that a gun constructed according to the principle of my invention is capable of being fired successively any given number of times without liability of heating the barrel. This will be readily understood from the fact that the gases generated by the combustion of the powder, after imparting the necessary initial velocity to the ball or projectile, will escape sidewise through the openings purposely provided in the breech-bar. The barrel therefore acts merely as the directing agent of the ball, and no deposit of any kind will settle therein. It therefore does not require cleaning or swabbing, like most of the guns. Moreover, the breech-bar is kept comparatively clean by the current of air which is permitted immediately after firing to sweep through the said opening.

Having thus described my invention, I shall state my claims as follows:

1. The combination, with the trigger *a*, of the slide-piece *b*, when the latter is arranged in relation to the hammer and the breech-bar so as to actuate them to operate by the pulling of the trigger, in the manner and for the purpose herein set forth.

2. In combination with the adjustable breech-bar constructed and operating as described, the packing-ring *r*, when located between the breech-bar and the rear part of the barrel, and when arranged substantially in the manner and for the purposes herein set forth.

3. The construction and arrangement of the breech-bar, the same consisting of a series of cartridge-chambers set in the slide-frame provided with suitable cams, in combination with the movable rear plate, latch, and other essential appurtenances, as herein described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

J. JARRE.

Witnesses:

GEO. HUTTON,
EMILE BANAUULT.