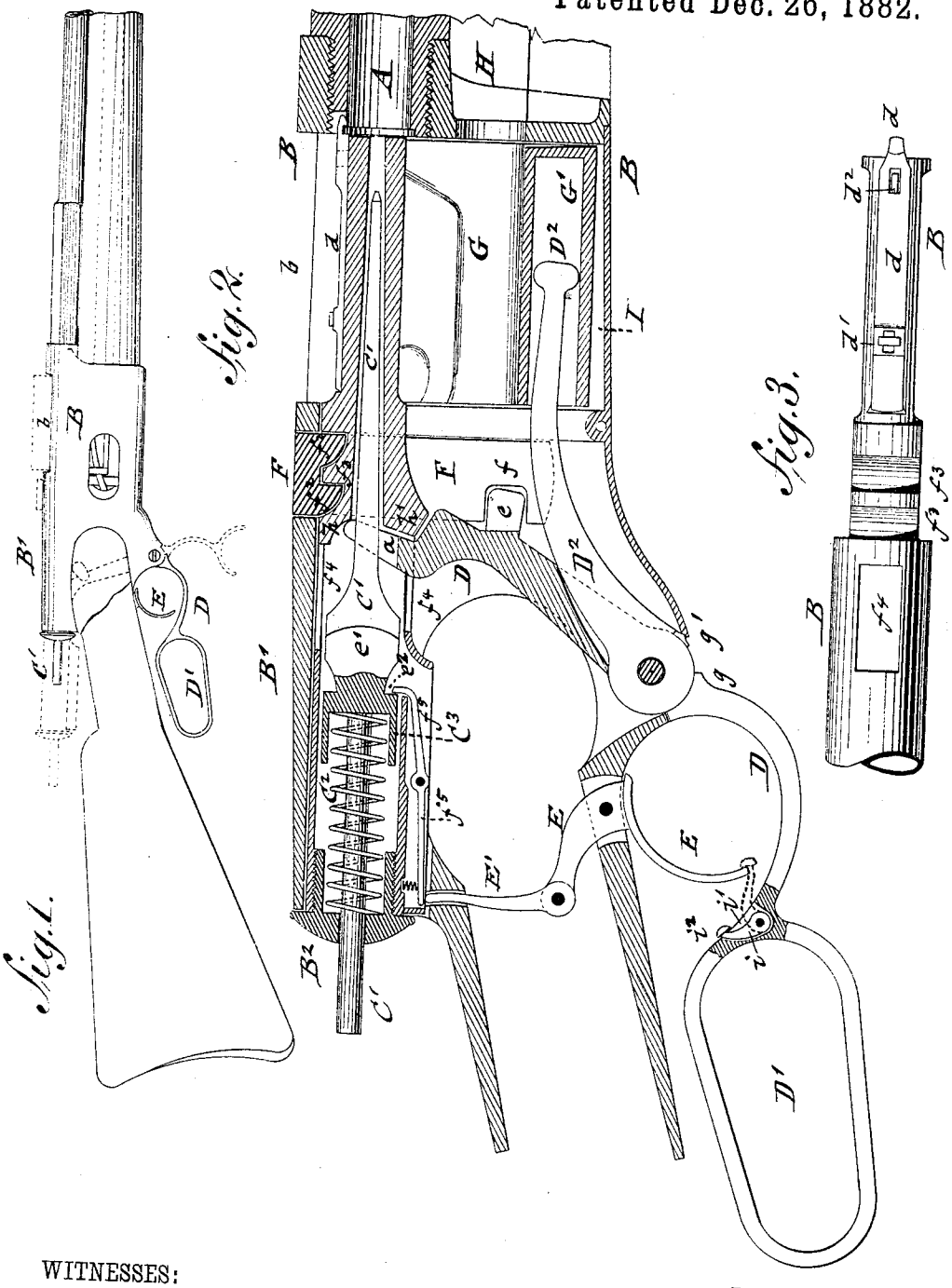
(No Model.)

2 Sheets—Sheet 1.

F. GAMMA.

MAGAZINE GUN.

No. 269,660. Patented Dec. 26, 1882.



WITNESSES:

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Otto Risch.

INVENTOR

Franz Gamma

BY Paul Goepel.

ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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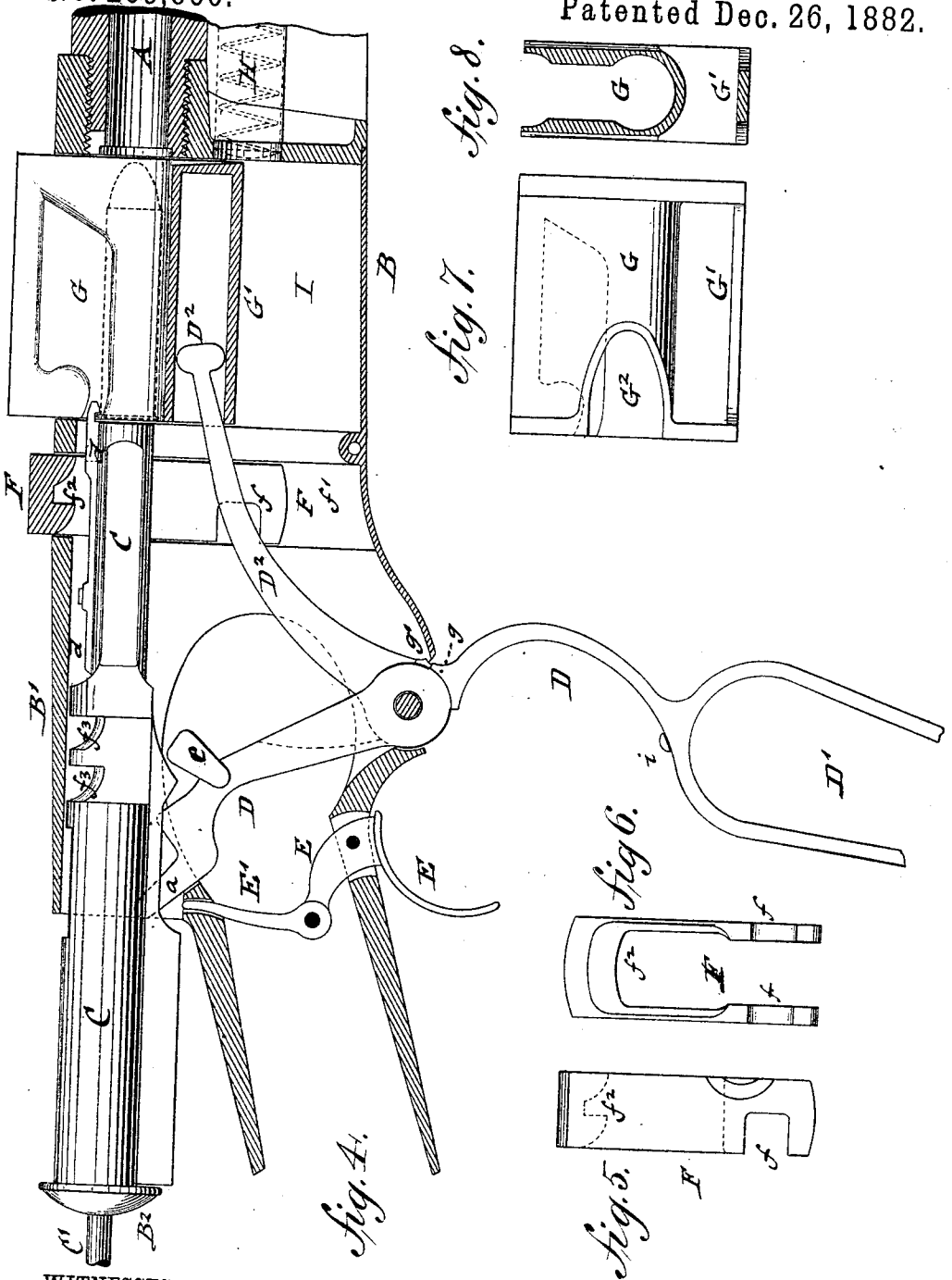

Fig. 4.

Fig. 8.

Fig. 7.

Fig. 6.

Fig. 5.

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UNITED STATES PATENT OFFICE.

FRANZ GAMMA, OF ELIZABETH, NEW JERSEY.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 269,660, dated December 26, 1832.

Application filed July 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANZ GAMMA, of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Magazine Fire-Arms, of which the following is a specification.

This invention has reference to certain improvements in that class of breech-loading magazine fire-arms in which a fulcrumed lever operates simultaneously the firing-pin, the cartridge-carrier, and the locking-key by which the breech-bolt is locked or released; and the invention consists of certain details of construction which will be fully described hereinafter and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side view of my magazine fire-arm. Fig. 2 represents a vertical longitudinal section of the operating mechanism of the same on an enlarged scale, shown ready for firing. Fig. 3 is a detail top view of the breech-bolt and the extractor applied thereto. Fig. 4 is a vertical longitudinal section of the magazine fire-arm, shown with the breech-bolt drawn back and the cartridge-carrier raised, ready for setting a cartridge into the barrel; and Figs. 5, 6, 7, and 8 are details of the locking-key, of the breech-bolt, and of the cartridge-carrier.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the barrel; B, the shoe or receiver at the breech end of the barrel; C, the sliding breech-bolt, which is accurately guided in the extended rear part, B′, of the receiver B.

The receiver B is provided with an opening, *b*, at the top part, through which the shell is thrown out after the same is drawn back from the barrel by the extractor *d*, which is attached to the breech-bolt. The extractor is held in place by a fixed transverse recessed lug, d', and a fixed longitudinal lug, d^2, which project from the breech-bolt through slots in the extractor. The breech-bolt C is provided at its interior with a firing-pin, C′, which is guided in longitudinal perforations of the tubular breech-bolt C, the rear end of the firing-pin projecting through a center perforation of the closing screw-cap B^2 of the breech-bolt, and being acted upon by an interior spiral spring, C^2, that is interposed between the cap B^2 and a collar or socket, C^3, of the firing-pin C^2. The firing-pin C′ as well as the breech-bolt C are engaged by an actuating-lever, D, which is fulcrumed to a downwardly-extending arm of the receiver B, and which is provided at its lower end with a loop-shaped handle, D′, by which the lever D is operated for setting the different parts of the fire-arm. That portion of the lever D between its fulcrum and the loop-shaped handle D′ is curved so as to form, when in closed position, a guard for the trigger E, as shown clearly in Fig. 2.

The upper end of the fulcrumed lever D is provided with a central recess, forming a rectangular fork, the arms *a* of which engage the convex cheeks *e′* of the firing-pin C′, whereby said pin is pushed back against the spiral spring C^2 when the handle D′ of the lever D is swung away from the stock. The upper part of the fulcrumed lever D is furthermore provided intermediately between its fulcrum and the forked-shaped upper end with sidewise and forwardly projecting curved or rounded-off cheeks *e*, which cheeks engage recesses *f* of a U-shaped key, F, which is guided in vertical recesses *f′* at the interior of the receiver B, the U-shaped locking-key being provided at its upper or bridge part with downwardly-projecting teeth f^2, said teeth being curved at the rear side and straight at the front side, as shown clearly in Figs. 2, 4, 5, and 6. The teeth of the locking-key F engage corresponding recesses, f^3, at the upper middle part of the breech-bolt C, so that when the breech-bolt is in position at the breech of the barrel, and the key is lowered to its full extent, said key locks the breech-bolt rigidly and reliably into position for firing.

The breech-bolt C is provided with longitudinal recesses f^4, through which the forked end of the lever D extends to the inside of the breech-bolt. When the upper part of the lever is swung back the fork engages first the concave side cheeks, *e′*, of the firing-pin and forces said pin back until the shoulder e^2 passes behind the fulcrumed and spring-actuated lever f^5, arranged in the open lower part of the breech-bolt C, which lever grasps and holds the pin until released by the trigger. Simultaneously with the backward movement of the firing-pin C′ against the pressure of the spiral

spring C^2, the cheeks *e* of the lever D lift the locking-key F in its guide-recesses vertically out of engagement with the breech-bolt C, so that the forked end of the fulcrumed lever D, which then engages the breech-bolt, can move the same in backward direction as far as the recessed portion or tail end B′ of the receiver will permit, which backward movement or throw has to be of such length that the breech-bolt clears entirely the movable cartridge-carrier G, as shown in Fig. 4. The side cheeks, *e*, are withdrawn from the recesses *f* of the locking-key after the same has been raised sufficiently to clear the breech-bolt, so as not to interfere with the backward motion of the lever D.

The cartridge-carrier is U-shaped in cross-section, and is provided at one side with an opening, G^2, for inserting the cartridge through the side opening of the receiver B, also with an end opening through which it is supplied from the usual magazine or supplementary barrel H below the main barrel A. The cartridge-carrier G is vertically guided in a well, I, of the receiver B, and actuated by an oscillating lever-arm, D^2, which is pivoted to the fulcrum of the lever D and extended forward to a point below the bottom of the cartridge-carrier G, said cartridge-carrier being provided with a backward-extending guide-arm, G′, between which and the bottom of the carrier the rounded-off end of the oscillating lever D^2 plays when the carrier is raised or lowered by the movement of the lever D. When the breech-bolt has been thrown back sufficiently to clear the cartridge-carrier a shoulder, *g*, of the lever D engages a shoulder of the lever D^2, causing said lever to swing upward, whereby the cartridge-carrier is raised so that the cartridge-table thereof is in line with the barrel and breech-bolt, as shown in Fig. 4. When the cartridge in the carrier G is thus placed into line with the breech-bolt and the barrel the forward motion of the breech-bolt by the return motion of the lever D forces the cartridge forward into the breech end of the barrel, the breech-bolt being returned to its normal closed position and locked again by the key F, which is forced down by the cheeks *e*. The cartridge-carrier G is open at its upper edge front and rear ends, and somewhat narrower in its middle portion than at its upper and lower portions, so as to return the cartridge fed from the outside or from the magazine, and also guide the flattened front end of the breech-bolt, while its upper part is curved so as not to be in the way of the breech-bolt when the same is thrown forward into its normal position. The forward motion of the breech-bolt is caused by the forked end of the lever D, which engages the interior contact-cheeks, *h h′*, of said bolt, as shown in Fig. 2.

The firing-pin C′ is held by the spring-acted catch-lever f^5, its rear end projecting to some distance through the screw-cap of the breech-bolt, until all the parts are returned into normal closed position, when the fire-arm is ready for firing. The firing is effected by means of a fulcrumed trigger, E, and a pivoted arm, E′, which latter passes through a guide-opening of the rear part of the receiver so as to engage the rear end of the catch-lever f^5. By pulling the trigger the pivoted arm E′ is raised, and thereby the catch-lever f^5 lowered at its front end so as to release the firing-pin. The latter is then thrown forward by its spring C^2 so as to strike with its pointed front end the center of the cartridge and thereby discharge the same.

The loop-shaped lower part, D′, of the lever D is provided with a small pivoted catch, *i*, the head of which is set into a recess, *i′*, of the lever D, and provided with an enlarged head, i^2, said catch being adapted to be thrown forward so as to engage the trigger whenever the actuating-lever D is returned to its normal position. By means of this catch the fire-arm may be discharged the moment the parts are in normally-closed position, which is of special advantage for quick firing, without taking aim, especially at close quarters. Whenever the fire-arm is to be fired by taking aim the catch is returned into the recess, as shown in Fig. 2, in which position it does not engage the trigger, admitting thereby the fire-arm to be discharged by the pulling back of the trigger in the usual manner.

The advantages of my improved magazine fire-arm are that it may be used for a magazine fire-arm or for single firing. In the latter case the cartridge is introduced into the cartridge-carrier through the opening G^2 in the side wall of the receiver at the rear end of said carrier, after which the parts are actuated by the lever in the manner described. All the parts are operated by the forward and backward movements of the handle D′ of the lever D—to wit, the forward movement of said handle causes the moving back and locking of the firing-pin, the raising of the locking-key, the backward motion of the breech-bolt, and the raising of the cartridge-carrier into line with the breech-bolt and barrel, and the backward movement of said handle returns the breech-bolt, locking-key, and cartridge-carrier into their normally-closed positions. Thus it will be seen that but two motions of the handle D′ are necessary to charge the fire-arm with a new cartridge and place the same in condition ready for firing. A very efficient fire-arm for military or sporting purposes is thus obtained, which, being composed of but few and strong parts, is very simple and durable.

I do not claim broadly the combination of the fulcrumed handle-lever with the breech-bolt, firing-pin, locking-key, and the cartridge-carrier, as the combination of these parts has heretofore been patented by me in different European countries, which patents have been granted for a definite term and have expired; but I do claim the specific arrangement of the parts, as hereinafter pointed out in the claims.

I am aware that a spring-pressed lever for

retaining the firing-pin has been used in connection with an ordinary trigger in a breech-loading gun, and I do not claim the same broadly.

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

1. In a magazine fire-arm, the combination of a shoe or receiver, B, having a tail end, B′, a longitudinally sliding and guided breech-bolt, C, an interior spring-pressed firing-pin, C′, having convex side cheeks, e', a fulcrumed lever, D, having a forked upper end for engaging the firing-pin, and a fulcrumed and spring-pressed lever, f^5, which engages the shoulder of the firing-pin C′ when the same is thrown back by the actuating-lever, substantially as set forth.

2. In a magazine fire-arm, the combination of a shoe or receiver, B, having a tail end, B′, a longitudinally sliding and guided breech-bolt, C, an interior spring-pressed firing-pin, C′, having convex side cheeks, e', a fulcrumed handle-lever, D, having a forked upper end, a, a fulcrumed and spring-pressed catch-lever, f^5, at the tail end of the receiver, and a trigger, E, and pivoted connecting trigger-arm E′ for releasing the catch-lever f^5, substantially as specified.

3. In a magazine fire-arm, the combination of a shoe or receiver, B, having a tail end, B′, a longitudinally sliding and guided breech-bolt, C, an interior spring-pressed firing-pin, C′, a fulcrumed and spring-acted catch-lever, f^5, fulcrumed actuating handle-lever D, having a forked upper end, a, and a pivoted catch, i near its loop-shaped-handle end for engaging the trigger, a trigger, E, and pivoted connecting-arm E′, all substantially as and for the purpose set forth.

4. The combination of a tubular breech or receiver, a longitudinally-sliding breech-bolt therein, provided with top recesses the rear sides of which are upwardly curved, while the front sides are vertical, a vertically-movable inverted-U-shaped key for locking said breech-bolt, provided at its top part or bridge with downwardly-projecting teeth adapted to fit said recesses and in its sides with recesses or slots, and an actuating-lever having a forked upper end for retracting and replacing said bolt, and lateral cheeks adapted to enter the side slots of said locking-key for raising and lowering the latter, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRANZ GAMMA.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.