(No Model.)

2 Sheets—Sheet 1

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 324,297. Patented Aug. 11, 1885.

Fig. 4.

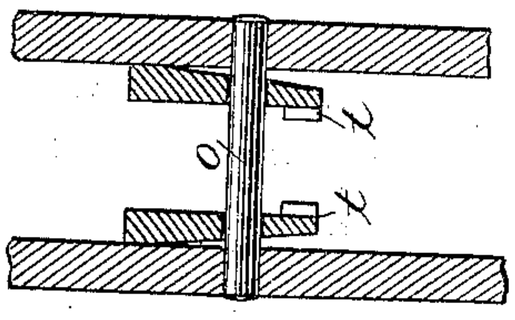

Fig. 1.

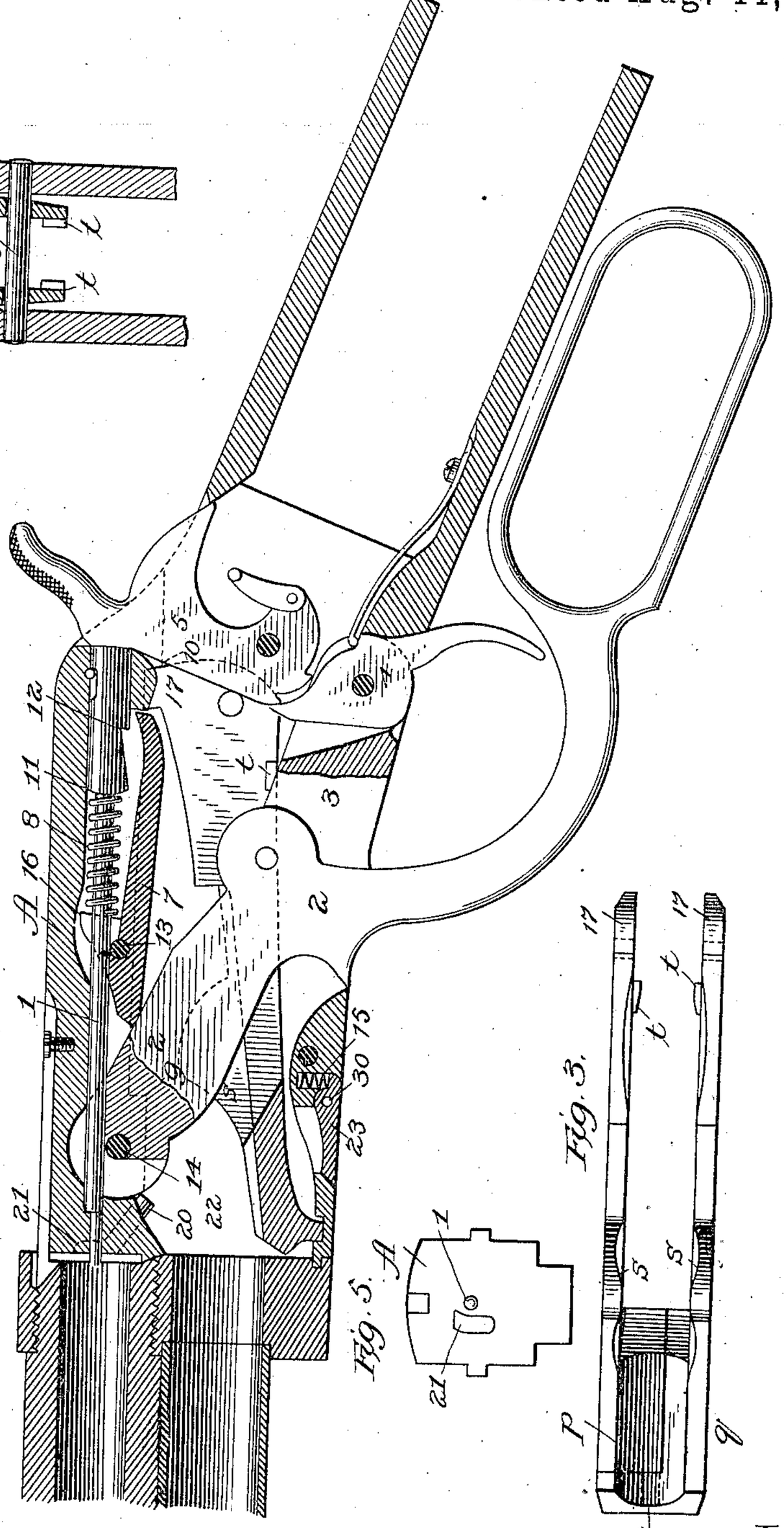

Fig. 5.

Fig. 3.

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No Model.)

2 Sheets—Sheet 2.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

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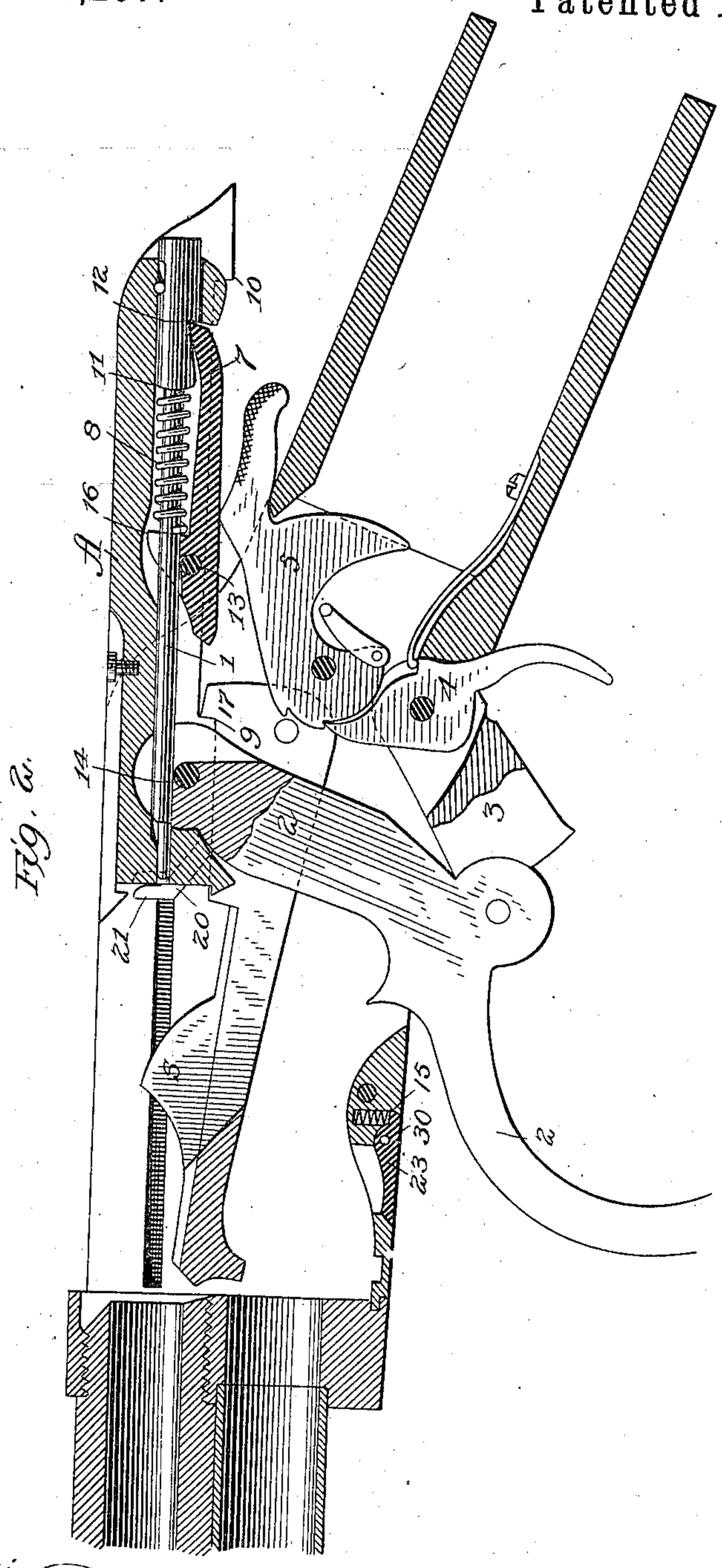

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN M. BROWNING AND MATTHEW S. BROWNING, OF OGDEN CITY, UTAH TERRITORY, ASSIGNORS TO THE WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 324,297, dated August 11, 1885.

Application filed May 26, 1885. (No model.)

To all whom it may concern:

Be it known that we, JOHN M. BROWNING and MATTHEW S. BROWNING, of Ogden City, in the county of Weber and Territory of Utah, have invented a new and useful Improvement in Magazine-Guns; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to breech-loading and magazine fire-arms, a part thereof being adapted to be used without the magazine.

The first part of the invention relates to the firing pin, and has for its object to provide a simple mechanism impossible to explode the cartridge until the breech is closed.

The object of the second part is to provide an improved ejector mechanism, and of the third part to improve the carrier mechanism.

In the accompanying drawings, Figure 1 is a central longitudinal section through the chamber of the piece and the breech-bolt, the breech being closed. Fig. 2 is a similar view, showing the parts in the position when the breech is open. Fig. 3 is a top view of the carrier. Fig. 4 is a transverse section through the carrier and the walls of the receiver. Fig. 5 represents the face of the bolt.

We first proceed to describe the improved firing-pin and its connections.

In these drawings, A represents the breech-bolt in line with the bore of the gun. It is operated by means of a lever, 2, pivoted to a swivel, 3, and to the bolt by a pivot, 14. The end of the lever bearing upon the bolt is rounded and bears against the seat in the bolt in which it turns. It abuts with a like seat against the swivel, and the swivel is pivoted upon an abutment in the rear part of the chamber. The firing-pin 1 is placed within the bolt, which is bored out to receive it. The pin is made small from its forward end back to the shoulder 11, and the enlarged part in rear of this shoulder is provided with a notch, 12, on its under side. The small portion of the firing-pin is flattened on its sides and passes through the upper part of the lever 2 and also through the upper part of the safety-lever 7, hereinafter explained, both of which are slotted to receive the pin. The safety locking-lever 7 is pivoted at its forward end to the bolt by a pivot, 13, its rear end being slightly upturned and fitted to the notch 12 in the enlarged part of the firing-pin. It has also an upward extension, 16, forming a shoulder a little in rear of the pivot 13. A spring, 8, is placed upon the firing-pin, its rear end bearing upon the shoulder 11 and its front end upon the projection 16. The front end of the safety-lever 7 is struck by the lever 2 in the latter part of the movement of said lever to close the breech, and the latter part of said movement moves the safety-lever sufficiently to throw the lower end out of the notch 12.

From the above description it will be clear that when the lower end of the lever 2 is pressed down to open the breech it will drop away from the forward end of the safety-lever 7, and the spring 8, pressing a little above the path of the safety-lever, will tend to throw the rear end upward against the firing-pin. Now, when the hammer is drawn back the spiral spring 8, by pressing upon the shoulder 11 of the firing-pin, will press the firing-pin back, and as soon as the notch 12 passes the rear end of the safety-lever this end will snap up into the notch 12. This movement is sufficient to draw the front end of the firing-pin into the bolt, away from the cartridge, and it will be apparent that the gun could not be fired in the position shown and described until the breech is again closed and the lever 2 brought up into position in contact with the forward end of the safety-lever.

Our improved ejector is shown at 20. It is located in the forward end of the bolt on one side of the center thereof, sufficiently to avoid the firing-pin. Its rear end extends downward and backward diagonally to the bottom of the bolt. Its upper end, 21, is bent upward past the center of the bolt, and lies in a recess in the face of the bolt. The lower end projects slightly, so as to be in proper position to be struck by shoulder 22 on the forward end of the lever when the said lever is moved and the breech-bolt is forced to its rearward limit, and thus the rear end of the ejector is pressed upward and forward. The head of the cartridge being held by the upper

edge, this pushing forward of the ejector throws the shell out.

The hammer is of ordinary construction. (Indicated at 5.)

The trigger 4 is located in the slotted rear end of the swivel, and is pivoted upon the same pin.

The carrier is composed of two parts, as shown more clearly in Figs. 3 and 4. These two parts, except at the forward end, have comparatively thin sides, chamfered on the outside from near the upper to the lower edge, as shown in Fig. 4. The front part of the side pieces are thicker, as shown at *p q*, the former being shorter, and the latter extends across the front of the former the entire width of the carrier. These parts are connected by a pin, *r*, formed upon or set into one of the pieces and projecting loosely into the other. The parts are fitted to each other so as to allow them to rock slightly upon the pin *r*, to cause the forward edges to advance toward and recede from each other. The carrier is pivoted in the receiver by a pin, *o*, passing loosely through the sides of the carrier, so as not to interfere with the above-described movement of the sides, the pin being set in the walls of the receiver. Thus the carrier swings upon this pin vertically, and the sides rock slightly also. Upon the lower rear part of the carrier sides are small inclined projections *t t*, of such position and of such shape, as shown in Figs. 1, 3, and 4, that when the lever is in the position shown in Fig. 2, between the sides of the carrier, it will bear against the projections *t t*, and thus throw out the lower sides of the carrier. This tips in the upper forward sides and causes the carrier to grip the cartridge. The forward end of the carrier is adapted to receive the cartridge, being hollow, as shown in Fig. 3, and provided with beveled ears *s s*, which clamp the cartridge. The upper end of the lever 2 in its forward position passes between these ears and separates the upper sides and ears, ready to receive another cartridge. The sides of the carrier at their rear ends are provided with upward projections 17 17, and adapted to be struck by the shoulders 9 and 10 on the under side of the sliding bolt A. The position of the shoulder 9 is such that they strike the projection 17 as the breech-block approaches its rearmost limit, and the projections 10 are adapted to throw down the carrier as the bolt closes the breech.

The novelty of this construction consists in the lateral rocking of the sides of the carrier.

In the operation of the arm the magazine is loaded at the side through an ordinary spring-trap. A cartridge or shell being in the chamber, suppose the lower end of the lever to be thrown forward. The first effect of this movement will be to slide the bolt backward and begin to force the hammer to the full-cock notch. At the same time the forward portion of the lever drops away from the safety-lever 7, and the spring 8 then begins to exert its force. The first action of the spring is to press the firing-pin to its rearward limit of movement, thereby drawing the forward end of said pin even with or slightly within the face of the bolt, and by this movement, also, the notch 12 passes the rear end of the safety-lever, which, through the spring acting upon the shoulder 16, is forced into the notch, as shown in Fig. 2. A further movement of the lever forces the hammer to the full-cock notch and carries the breech-bolt back until the cartridge or shell is drawn from the barrel. The ejector is then struck by the shoulder 22 on the lever as the upper end of the latter turns, and is forced quickly outward, which has the effect of ejecting the shell or cartridge from the chamber. The same movement of the lever has also spread the lower edges of the carrier sides and caused the ears *s* to grip the cartridge, which has been forced back by the magazine-spring onto the carrier. The last part of the backward movement of the bolt also, by means of the shoulders 9 and 17 on the bolt and carrier, respectively, forces up the forward end of the carrier and presents the cartridge to the bore of the barrel. The return movement of the lever slides the bolt forward and at the same time relieves the pressure from the ejector-pin, which is then free to drop back into its place flush with the face of the bolt. The face of the bolt then strikes the head of the cartridge (the firing-pin being still held within the bolt by the safety-lever) and pushes it into the bore of the barrel, while the lever spreads the sides of the carrier. The last part of this return movement throws down the carrier by the means before described and brings the forward portion of the lever 2 to bear upon the safety-lever 7, thereby forcing its rear end from the notch 12 and leaving the firing-pin free to be acted upon by the hammer.

In the bottom plate of Fig. 1 we show a device which we term a "safety-valve." It can be arranged in different ways and in any part or piece of the gun best suited for it. Sometimes the head of a cartridge blows off in firing, and if the end of the bolt does not fit exactly against the barrel there is a great escape of gas into the breech, which is liable to swell or burst the receiver and disable the gun. By this arrangement, no matter how much gas escapes into the breech, this valve opens and allows it to escape without injury to the arm.

The following is a description: In Fig. 1 is shown a valve, 23, swinging on the pin 30. It is arranged to swing outward. At 15 is represented a spiral spring arranged to hold the valve closed. The bottom plate is cut through into the interior. It is evident that when there is any gas-pressure on the inside the valve will be blown open, and when the pressure is gone the spring will close it again.

We claim as our invention—

1. The combination, in a breech-loading firearm, of the sliding bolt, a firing-pin having an enlarged rear end and shoulder, 11, said pin be-

ing fitted to the longitudinal bore of the breech-bolt, a lever, 7, pivoted to the bolt and having an upward extension, the rear end being adapted to a notch in the firing-pin and the forward end being in the line of movement of and operated by the lever 2, and a spring in the firing-pin having one end bearing upon the shoulder of the pin and the other end bearing on the upward projection of the lever 7, whereby the rear end of the lever is elevated, all substantially as described.

2. The combination, in a breech-loading fire-arm, of the breech-bolt having a longitudinal bore, the firing-pin borne therein, having an enlarged rear end and flattened front end, the safety-lever pivoted to the bolt and fitted to a notch in the firing-pin, the spring in the firing-pin, the slotted upward extension of the lever, through which the firing-pin passes and upon which the spring bears, and the slotted upper end of the lever 2, all substantially as described.

3. In a magazine fire-arm, a carrier composed of two side pieces loosely pivoted at their rear ends upon a pin and pivoted to each other at their front ends to permit lateral rocking motion, in combination with inclined projections on the inner lower surfaces of said side pieces, at the rear thereof, and the operating-lever, the said lever spreading the upper part of the sides in advancing and closing the same in retracting the bolt, substantially as described.

4. In a magazine fire-arm of substantially the form described, a carrier composed of two parts having the rear projections, *t t*, the ears *s s*, at the forward upper part, adapted to the lever, whereby the parts may be spread, the front thicker portions formed to grip the cartridge, one overlapping the other, and the longitudinal pivot *r*, connecting the two parts and permitting a rocking motion, all substantially as described.

5. In a breech-loading fire-arm, a safety spring-valve in the bottom of the receiver, consisting of a valve, 23, pivoted upon a pin, 30, and having a rear projection adapted to receive the pressure of the spring 15, fitted in a cavity in the receiver, whereby the said valve is kept normally closed, but is adapted to open outward when the pressure from within exceeds the pressure of the spring.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN M. BROWNING.
MATTHEW S. BROWNING.

Witnesses:
GEO. B. DOUGLASS,
D. W. FELSHAW.