

No. 673,641.

Patented May 7, 1901.

C. A. KING & J. P. HAYES.

EJECTOR MECHANISM FOR BREECH LOADING FIREARMS.

(Application filed Dec. 31, 1900.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

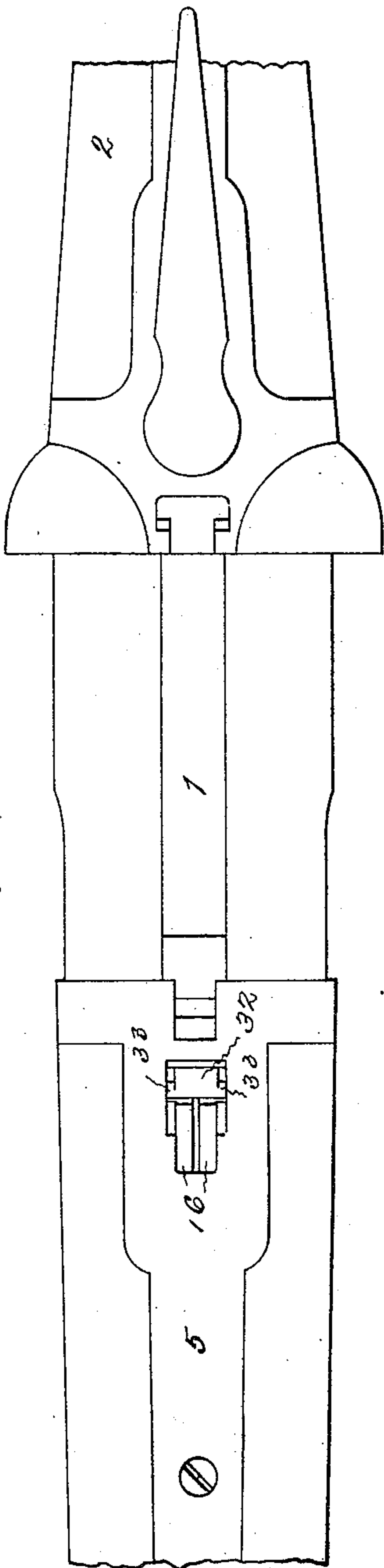
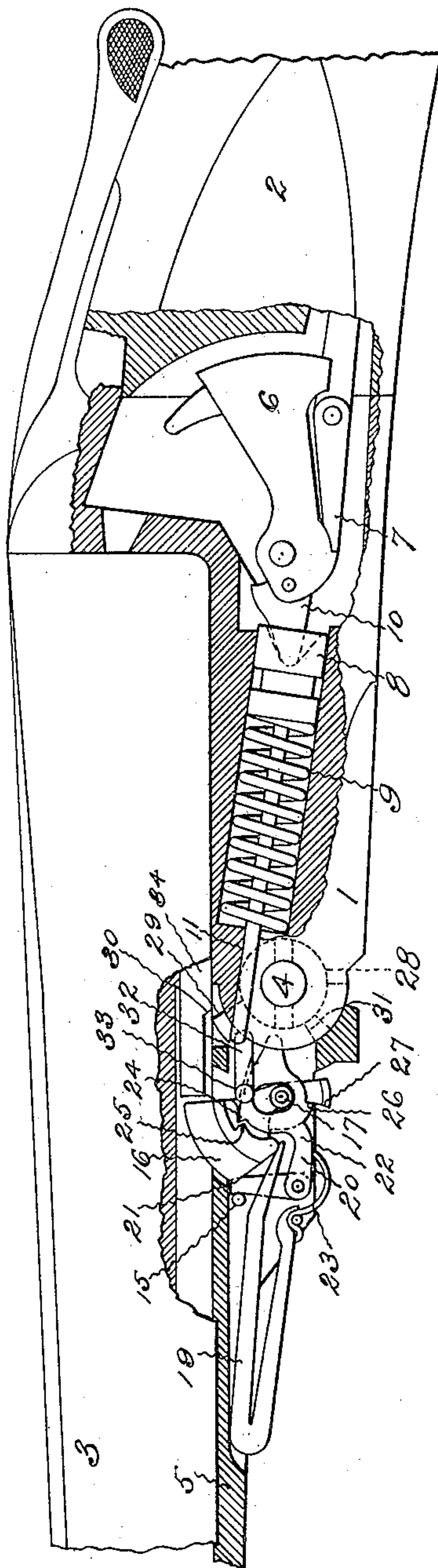


Fig. 2.



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Fig. 3.

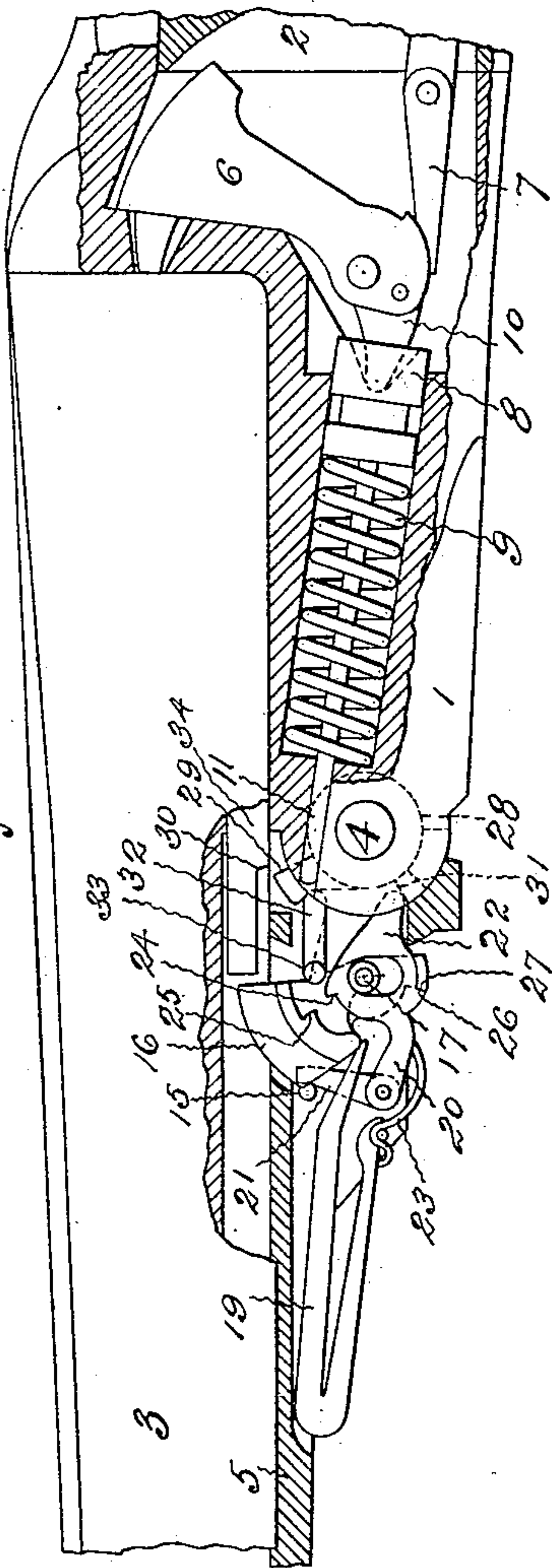
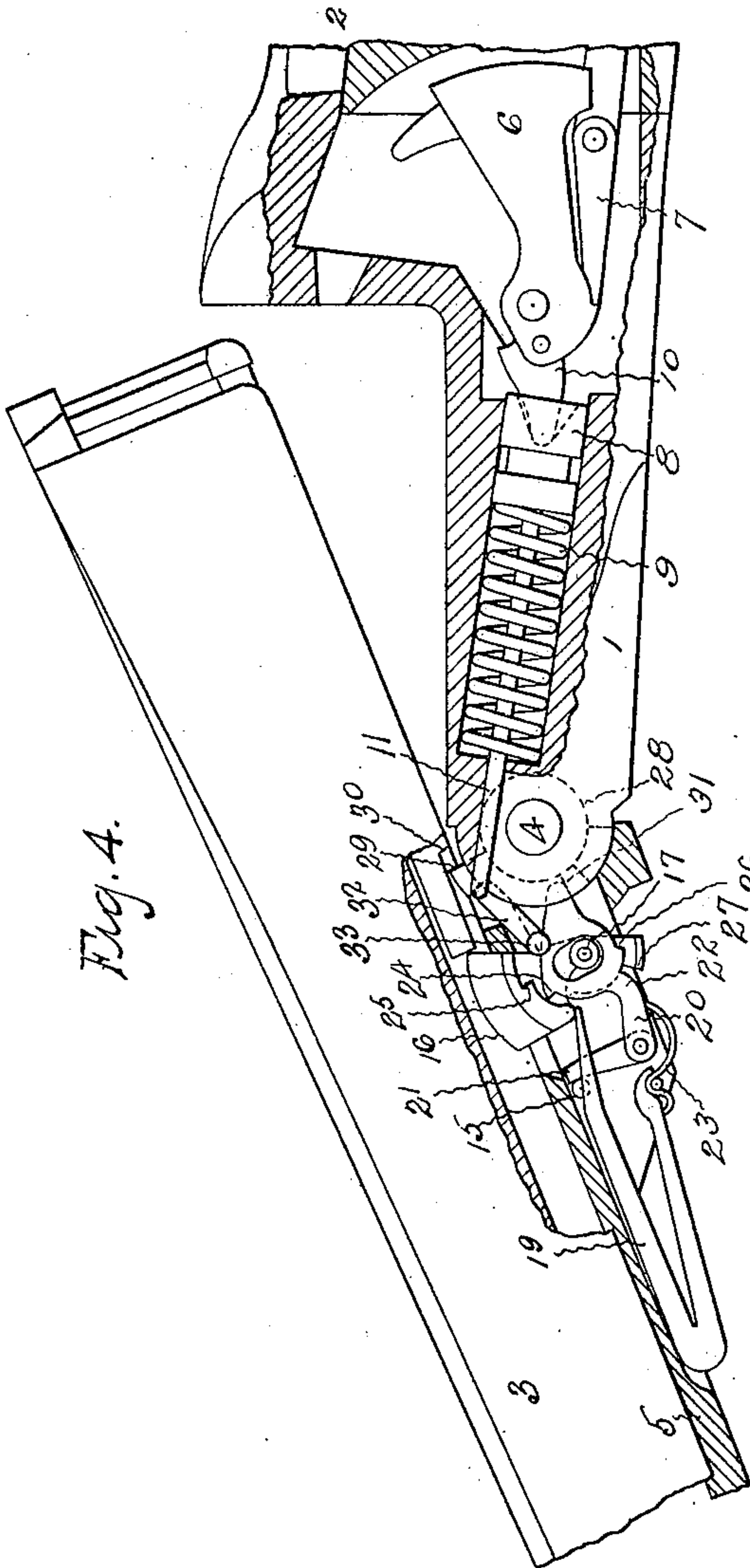


Fig. 4.



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3 Sheets—Sheet 3.

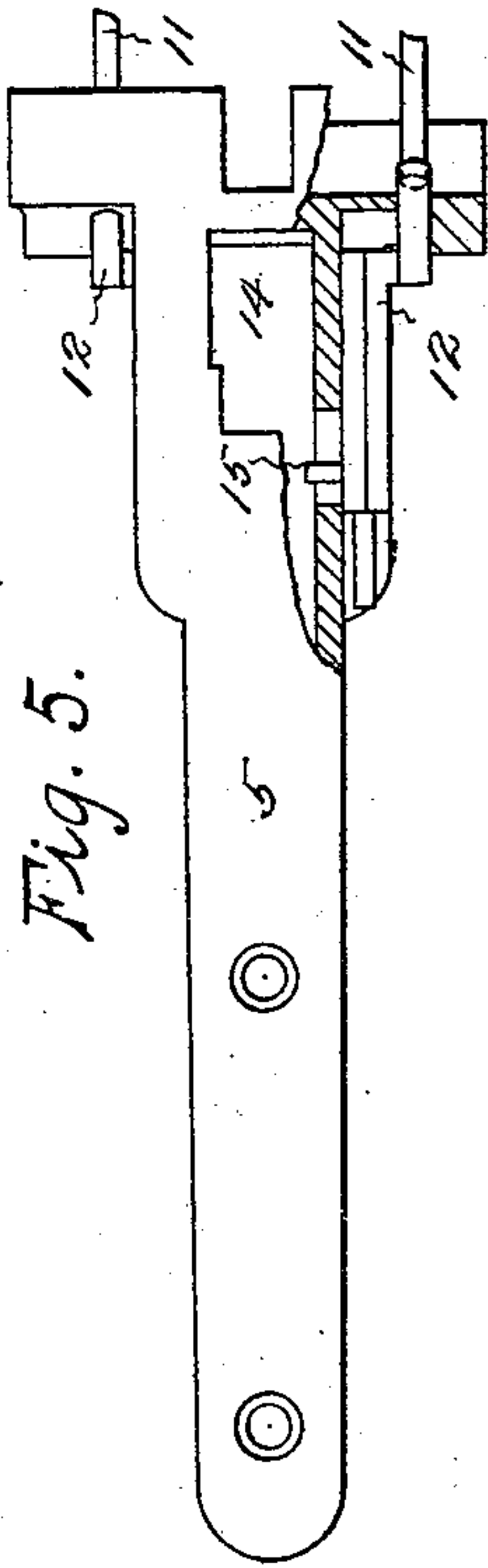


Fig. 5.

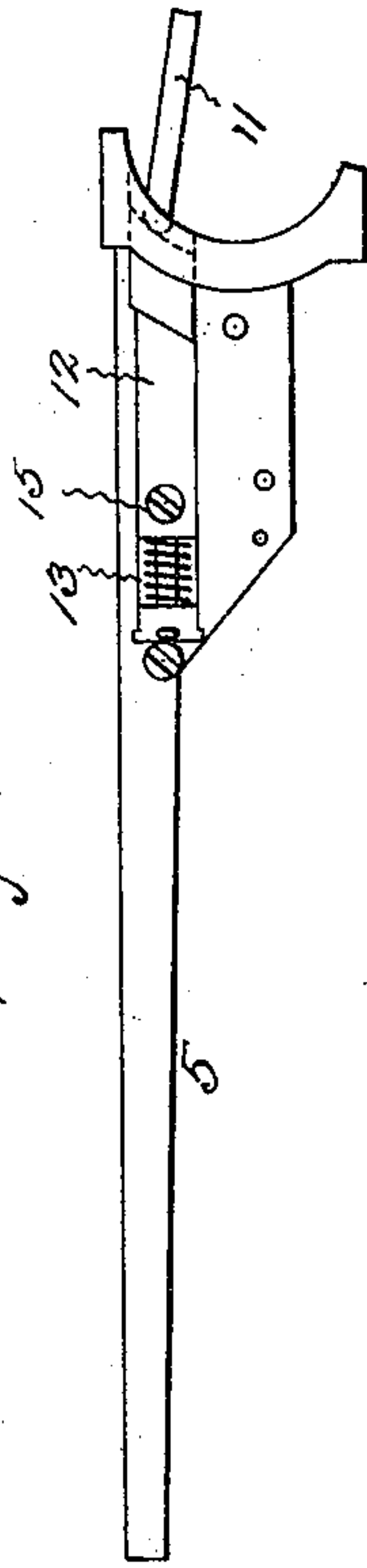


Fig. 6.

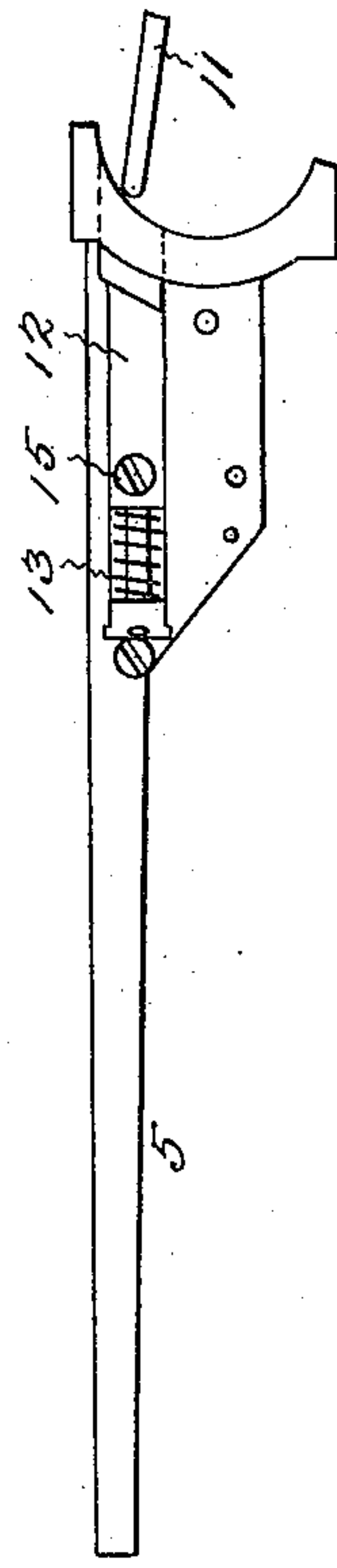


Fig. 7.

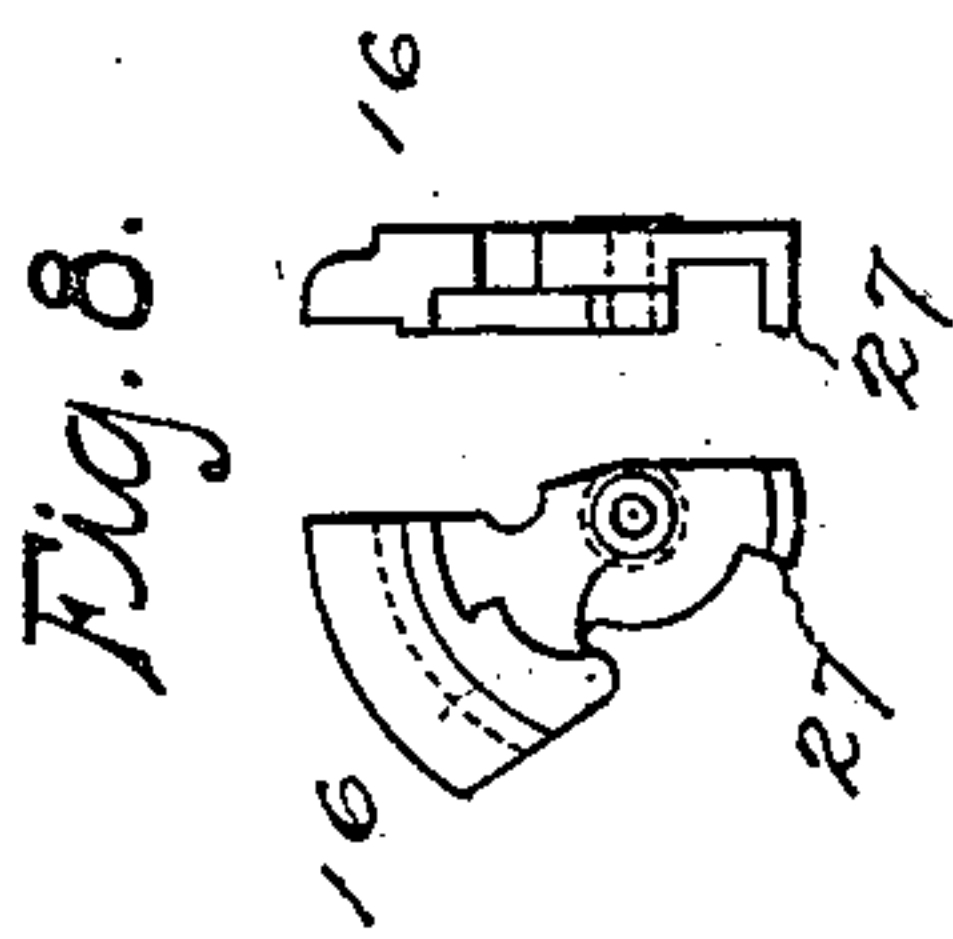


Fig. 8.

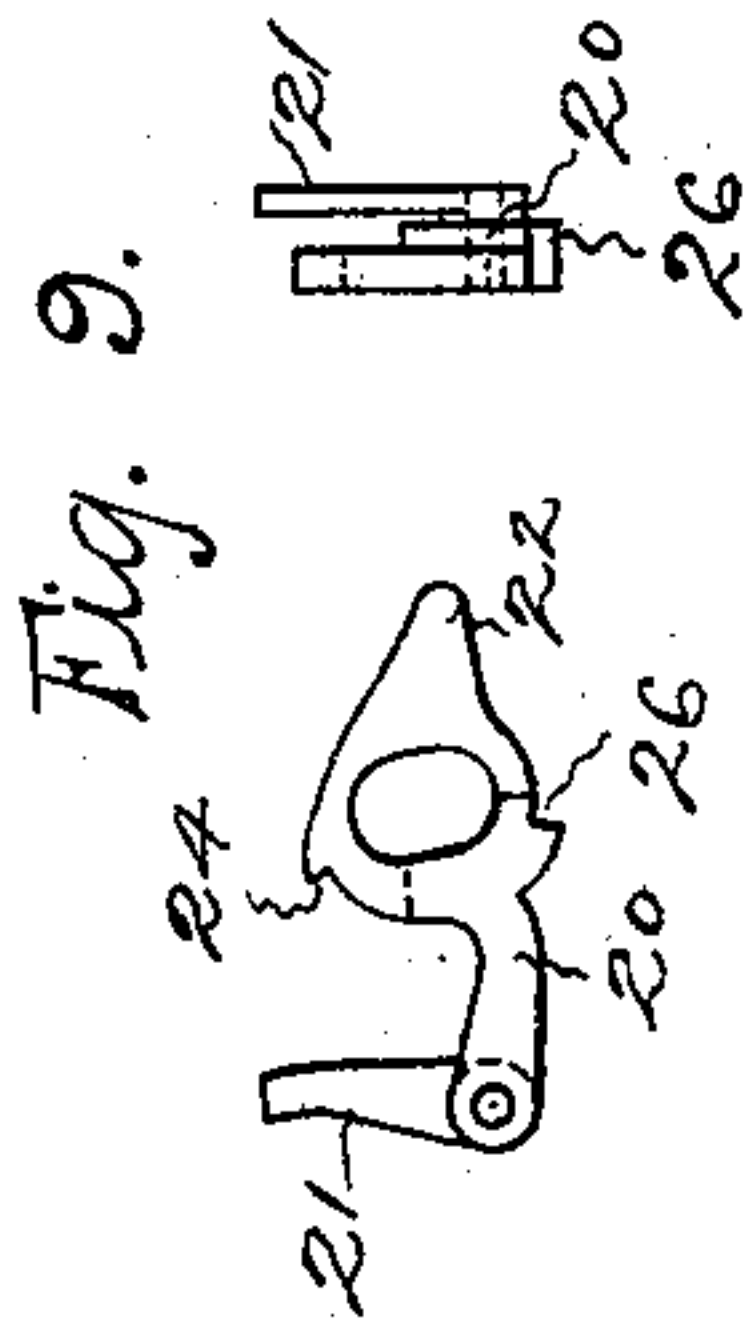


Fig. 9.

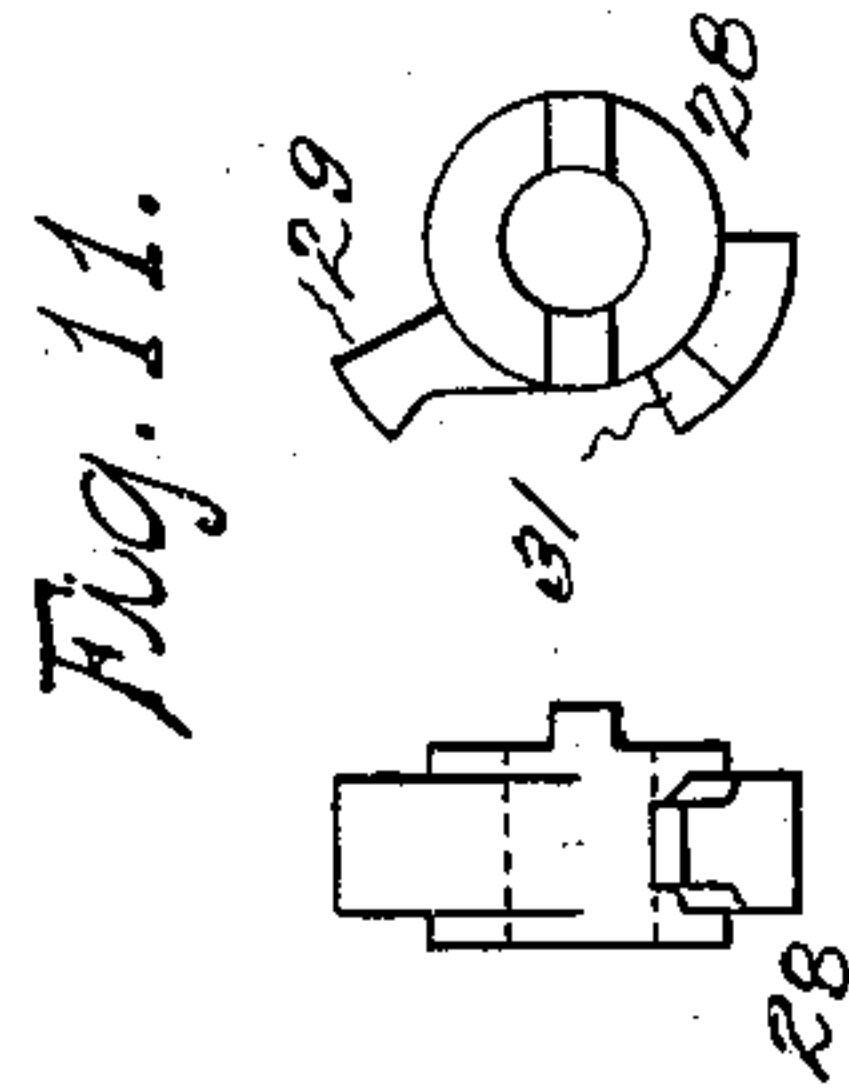


Fig. 11.

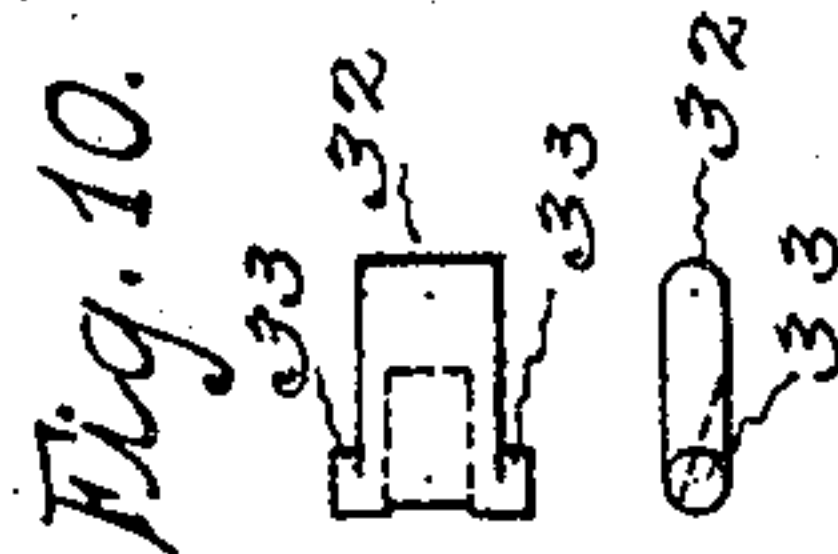


Fig. 10.

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# UNITED STATES PATENT OFFICE.

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## EJECTOR MECHANISM FOR BREECH-LOADING FIREARMS.

SPECIFICATION forming part of Letters Patent No. 673,641, dated May 7, 1901.

Application filed December 31, 1900. Serial No. 41,553. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES A. KING and JAMES P. HAYES, citizens of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Ejector Mechanism for Breech-Loading Firearms, of which the following is a specification.

This invention relates to those ejector mechanisms for breech-loading firearms which are so constructed that they do not eject a cartridge-shell when the breeches are opened unless it has been fired.

The object of the invention is to devise an ejector mechanism of this nature having parts so constructed and arranged that they will be simple and cheap to make and assemble and also sure and easy in action and durable in service.

In the accompanying drawings the invention is illustrated in connection with a double-barrel hammerless breakdown shotgun of the type known as the "Parker" gun, and the ejector mechanism that is shown has a rod fastened to each firing-hammer mainspring-plunger and projecting beyond the hinge-joint at the front end of the frame into the path of the rear end of a rearwardly-spring-pressed slide. Each slide has an inwardly-projecting stud that extends in front of an arm of a lever that is provided with a retaining-shoulder and a sear-shoulder. Each of the levers has its rear end lifted upwardly by the pressure of a spring for causing its retaining-shoulder to move into position to engage with a retaining-shoulder on an ejector-hammer when the barrels are tipped to open the breeches and the firing-hammer is cocked, and each of the levers has its rear end forced downwardly by the push of a slide-stud for causing the engagement of its sear-shoulder with a sear-shoulder on an ejector-hammer when the firing-hammer is snapped forward. Each of the ejector-hammers when its sear-shoulder is free from the sear-shoulder of its lever and its retaining-shoulder is not obstructed by the retaining-shoulder of its lever is thrown rearwardly by the tension of an arm of a leaf-spring and caused to forcibly engage the front end of an ejector-stem. Each ejector-stem when the barrels are tipped and the breeches

are opened is by the engagement of a shoulder with a projection from a part of the frame given a slight rearward movement for starting the shells from the breeches of the barrels, each lever being moved for disengaging its sear-shoulder from the sear-shoulder of its ejector-hammer by the engagement of its rear end with a portion of the frame when the barrels have been tipped for opening the breeches sufficiently to allow a shell to be ejected rearwardly past the top of the frame. The ejector-hammers when the barrels are tipped for closing the breeches are forced forwardly, so as to be in position to be engaged by the retaining-shoulders when the barrels are again tipped for opening the breeches by a toggle-block that extends between the back edges of the ejector-hammers and the front edge of a part of the frame.

Figure 1 of the views shows a plan of a portion of a double-barrel breech-loading hammerless shotgun provided with the improved ejector mechanism. Fig. 2 is a side elevation with portions broken away of the ejector mechanism for one barrel, showing the mechanism in the position occupied when the firing-hammer is cocked and a loaded shell is in the barrel. Fig. 3 is a similar view showing the same parts when the firing-hammer is forward and the shell has been fired. Fig. 4 is a side elevation showing the parts in the positions occupied with the firing-hammer cocked and the barrel tipped so as to open the breech and allow the mechanism to eject a fired shell. Fig. 5 is a plan of the fore-end iron of the gun. Fig. 6 is a side elevation of the fore-end iron with the slides which it carries in their forward positions. Fig. 7 is a similar view of these parts with the slides pressed rearwardly. Fig. 8 shows side and edge views of an ejector-hammer. Fig. 9 shows similar views of a lever with its retaining and sear shoulders. Fig. 10 shows views of the toggle-block for cocking the ejector-hammers, and Fig. 11 shows views of the hinge-joint block.

The frame 1 is fastened to the stock 2, the barrels 3 are hinged to the frame by the pivot 4, and the fore-end iron 5 is attached to the barrels in the ordinary manner. The firing-hammers 6 are concealed in the frame and by



sears 7 are held cocked against the push of the plungers 8, that are forced rearwardly by spiral springs 9, located in chambers in the front part of the frame, the plungers and the firing-hammers being connected by means of the links 10, that are pivoted to the hammers and enter recesses in the back ends of the plungers, as set forth in the patent to Charles A. King of March 1, 1892.

Each rod 11, that is fastened to and projects forwardly from the mainspring-plunger, is of such length that when its firing-hammer is cocked and the plunger is forced forward its front end extends beyond the front end of the frame; but when its firing-hammer is thrown forwardly and the plunger is forced back its front end is withdrawn into the front end of the frame.

The front end of each plunger-rod when forward engages the end of a slide 12, movable in the side of the fore-end iron. Each slide is normally forced backwardly by a spiral spring 13, and projecting from each slide into the ejector-hammer recess 14 in the fore-end iron is a stud 15.

The ejector-hammers 16 are pivotally held in the center of the recess in the fore-end iron by a pin 17. The back edges of these hammers engage with the front ends of the ejector-stems 34, and they are held in such engagement and are normally thrust rearwardly by the upper arms of leaf-springs 19.

Two levers 20 are pivoted in the recess in the fore-end iron between the ejector-hammers. One end 21 of each lever extends upwardly toward the top of the fore-end iron just in the rear of a slide-stud 15, and the other end 22, which is normally forced upwardly by a spring 23, extends rearwardly to the front end of the frame. These levers have retaining-shoulders 24, that when the ejector-hammers are pushed forward and the levers are lifted by their springs occupy positions just in the rear of and out of contact with retaining-shoulders 25, formed on the inside faces of the ejector-hammers, so that the lever-retaining shoulders will engage with the injector-hammer-retaining shoulders and retain the ejector-hammers when the barrels are tipped for opening the breeches if the firing-hammers are cocked. On the opposite edges of these levers are the sear-shoulders 26, that are arranged to engage with sear-shoulders 27 on the inside faces of the ejector-hammers when the firing-hammers are thrown forwardly and the slides are permitted by the plunger-rods to be forced rearwardly and through the engagement of the slide-studs with the upper ends of the levers cause the levers to be oscillated, so that their rear ends move downwardly against the push of their spring.

A joint-block 28 is located about the pivot that connects the frame and the fore-end iron. This block, which is secured in position so that it will not rotate, has a shoulder 29, arranged to engage shoulders 30 on the under

side of the ejector-stems 34 when the barrels are tipped, so as to positively commence the ejection of the fired shells. This block also has on the front edge a shoulder 31, which shoulder is arranged to be engaged by the rear ends of the levers when the firing-hammers are forward and the barrels are tipped, so that further tipping of the barrels will cause the sear-shoulders on the levers to be disengaged from the sear-shoulders on the ejector-hammers and allow the ejector-hammers to be thrown rearwardly and complete the ejection of the fired shells.

Between the fixed front edge of the joint-block and the back edges of the ejector-hammers a block 32 is placed. The front end of this block has lugs 33, that project outwardly a little wider than the width of the opening to the rear from the recess in the fore-end iron, so that the link, although loose, cannot drop from position. When the barrels are tipped for closing the breeches, this block, acting as a toggle, forces forwardly the ejector-hammers, so that the levers may be lifted by their springs and their retaining-shoulders placed in the path of the retaining-shoulders of the ejector-hammers.

The ejector-hammers are prevented from snapping back by the retaining-shoulders as long as the firing-hammers are cocked, and when the parts are in such relation the barrels may be tipped for opening and closing the breeches indefinitely without releasing the ejector-hammers and allowing them to eject the shells. When the firing-hammers are snapped forward and the plunger-rods are withdrawn, the slide-springs force the slides rearwardly, so that their inwardly-projecting studs by engagement with the upright parts of the levers cause the levers to be oscillated against the push of their springs and the retaining-shoulders to be moved out of the path of the ejector-hammers and the sear-shoulders to become engaged. Then the next time the barrels are tipped for opening the breeches the ends of the levers will engage with the projections from the joint-block in such manner as to cause the disengagement of the sear-shoulders and allow the snapping of the ejector-hammers.

The levers, with their retaining-shoulders, sear-shoulders, and tripping ends, the lever-moving slides, the ejector-hammers, and the cocking toggle-block, are very simple to make and assemble. The action of these parts is easy and powerful and the movements so caused that there is little wear, and what wear does occur will not affect the sure, accurate, and safe operation of the mechanisms.

Cocking the ejector-hammers by means of a toggle-block eliminates all the friction that is incident to the rubbing of the ejector parts against other parts for the purpose of forcing the ejector-hammers forwardly against the thrust of their springs, and this, besides reducing the wear, insures a smooth and easy action when the parts are operated.



We claim as our invention—

1. An ejector mechanism for a breech-loading firearm consisting of a slide, a spring for thrusting the slide in one direction, means  
5 operated by the movement of the firing-hammer for forcing the slide against the thrust of the spring, a lever provided with a retaining-shoulder and a sear-shoulder, a spring for thrusting the lever in one direction, means  
10 operated by the movement of the slide for forcing the lever against the thrust of the spring, an ejector-hammer provided with a retaining-shoulder and a sear-shoulder, a spring for throwing the ejector-hammer, an  
15 ejector-stem adapted to be forcibly moved by the ejector-hammer, and means for cocking the ejector-hammer, substantially as specified.

2. An ejector mechanism for a breech-loading firearm consisting of an ejector-stem, an ejector-hammer adapted to engage with the ejector-stem, a spring for throwing the ejector-hammer, a toggle-block loosely held by the  
20 fore-end iron with one end engaging the ejector-hammer and the other end butting against the frame, for cocking the ejector-hammer when the barrel is closed, devices for holding the ejector-hammer cocked, and  
25 means for releasing the ejector-hammer, substantially as specified.

3. An ejector mechanism for a breech-loading firearm consisting of a slide, a spring for thrusting the slide in one direction, means  
30 operated by the movement of the firing-hammer for forcing the slide against the thrust of the spring, a lever provided with a retaining-shoulder and a sear-shoulder, a spring for thrusting the lever in one direction, means  
35 operated by the movement of the slide for forcing the lever against the thrust of the spring, an ejector-hammer provided with a retaining-shoulder and a sear-shoulder, a spring for throwing the ejector-hammer, an  
40 ejector-stem adapted to be forcibly moved by the ejector-hammer, and a block extending between the front end of a part of the frame and the ejector-hammer, substantially as specified.

4. An ejector mechanism for a breech-loading firearm consisting of a slide, a spring for thrusting the slide in one direction, means  
50 operated by the movement of the firing-hammer for forcing the slide against the thrust of the spring, a lever provided with a retaining-shoulder and a sear-shoulder, a spring for thrusting the lever in one direction, means  
55 operated by the movement of the slide for forcing the lever against the thrust of the spring, an ejector-hammer provided with a retaining-shoulder and a sear-shoulder, a spring for throwing the ejector-hammer, an  
60 ejector-stem adapted to be forcibly moved by the ejector-hammer, means for cocking the

ejector-hammer, and a joint-block located in the front part of the frame and provided with  
65 a projection adapted to engage the ejector-stem and a shoulder adapted to engage the end of the lever, substantially as specified.

5. An ejector mechanism for a breech-loading firearm consisting of a slide, a spring for  
70 thrusting the slide in one direction, means operated by the movement of the firing-hammer for forcing the slide against the thrust of the spring, a lever provided with a retaining-shoulder and a sear-shoulder, a spring for  
75 thrusting the lever in one direction, means operated by the movement of the slide for forcing the lever against the thrust of the spring, an ejector-hammer provided with a retaining-shoulder and a sear-shoulder, a spring  
80 for throwing the ejector-hammer, an ejector-stem adapted to be forcibly moved by the ejector-hammer, a joint-block located in the forward end of the frame and provided with  
85 a projection adapted to engage the ejector-stem and a shoulder adapted to engage the lever, and a block loosely extending between the joint-block and the ejector-hammer, substantially as specified.

6. An ejector mechanism for a breech-loading firearm consisting of a slide, a spring for  
90 thrusting the slide in one direction, means operated by the movement of the firing-hammer for forcing the slide against the thrust of the spring, a lever provided with a retaining-shoulder and a sear-shoulder, a spring for  
95 thrusting the lever in one direction, means operated by the movement of the slide for forcing the lever against the thrust of the spring, an ejector-hammer provided with a retaining-shoulder and a sear-shoulder, a spring  
100 for throwing the ejector-hammer, an ejector-stem adapted to be forcibly moved by the ejector-hammer, a block extending between the front end of a part of the frame and the  
105 ejector-hammer, and lugs projecting from the ears and loosely retaining the block in place, substantially as specified.

7. An ejector mechanism for a breech-loading firearm consisting of an ejector-stem, an  
110 ejector-hammer adapted to engage with the ejector-stem, a spring for throwing the ejector-hammer, means for cocking the ejector-hammer, said ejector-hammer being provided with a retaining-shoulder and a sear-shoulder,  
115 a lever provided with a retaining-shoulder and a sear-shoulder, a spring for moving the lever in one direction, and means operated by the movement of the firing-hammer for moving the lever in the other direction,  
120 substantially as specified.

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