

T. C. JOHNSON.
REPEATING FIREARM.
APPLICATION FILED JAN. 29, 1910.

960,646.

Patented June 7, 1910.

3 SHEETS—SHEET 1.

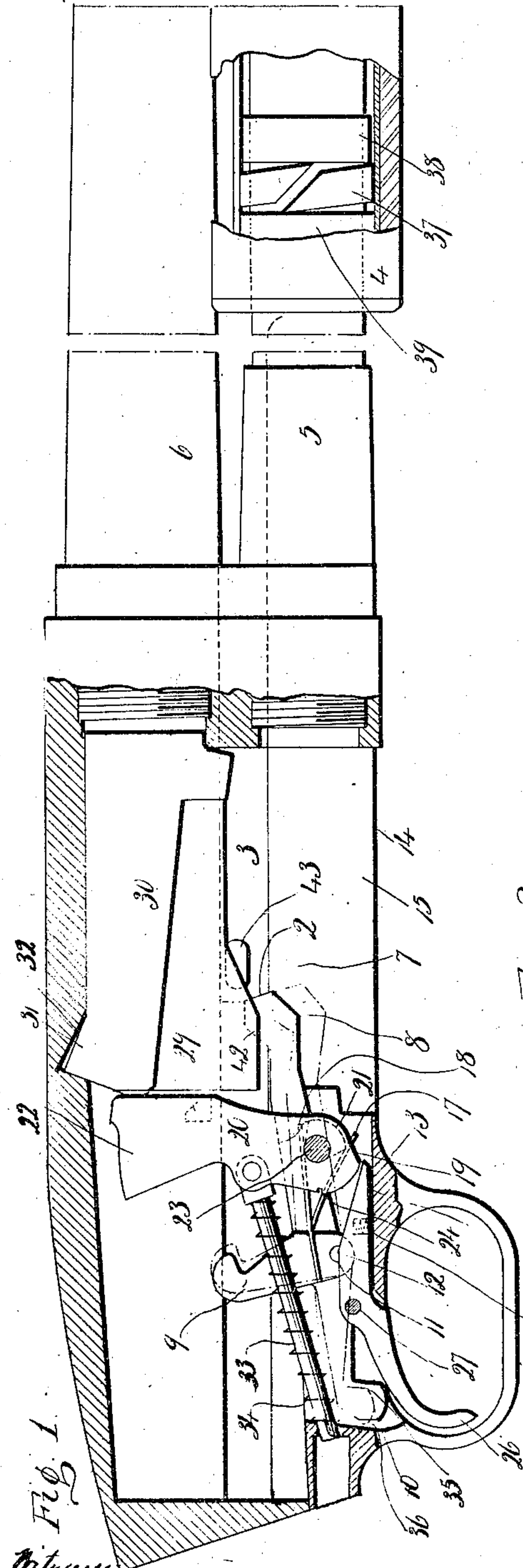


Fig. 1.

Witness
C. J. Reed.
C. L. Weed

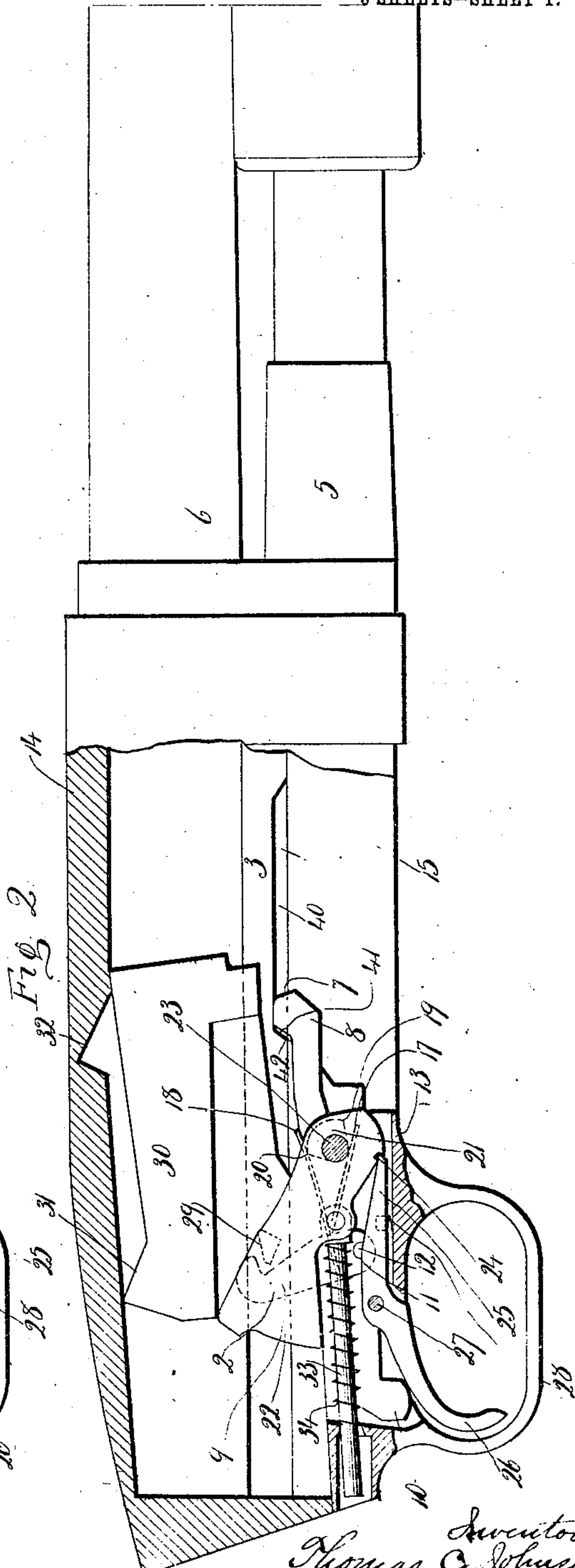


Fig. 2.

Inventor
Thomas C. Johnson
by Seymour & Egan
Attys

960,646.

Patented June 7, 1910.

3 SHEETS—SHEET 2.

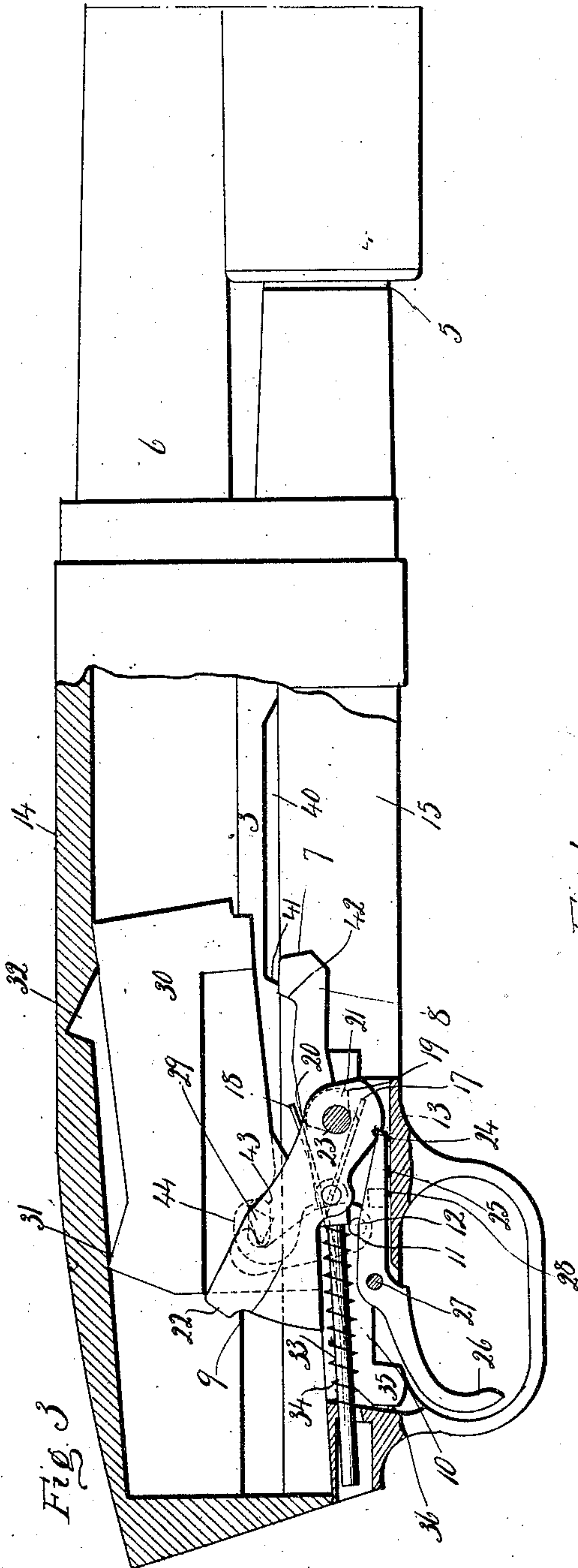


Fig. 3

Witness
 C. J. Reed
 C. L. Weed

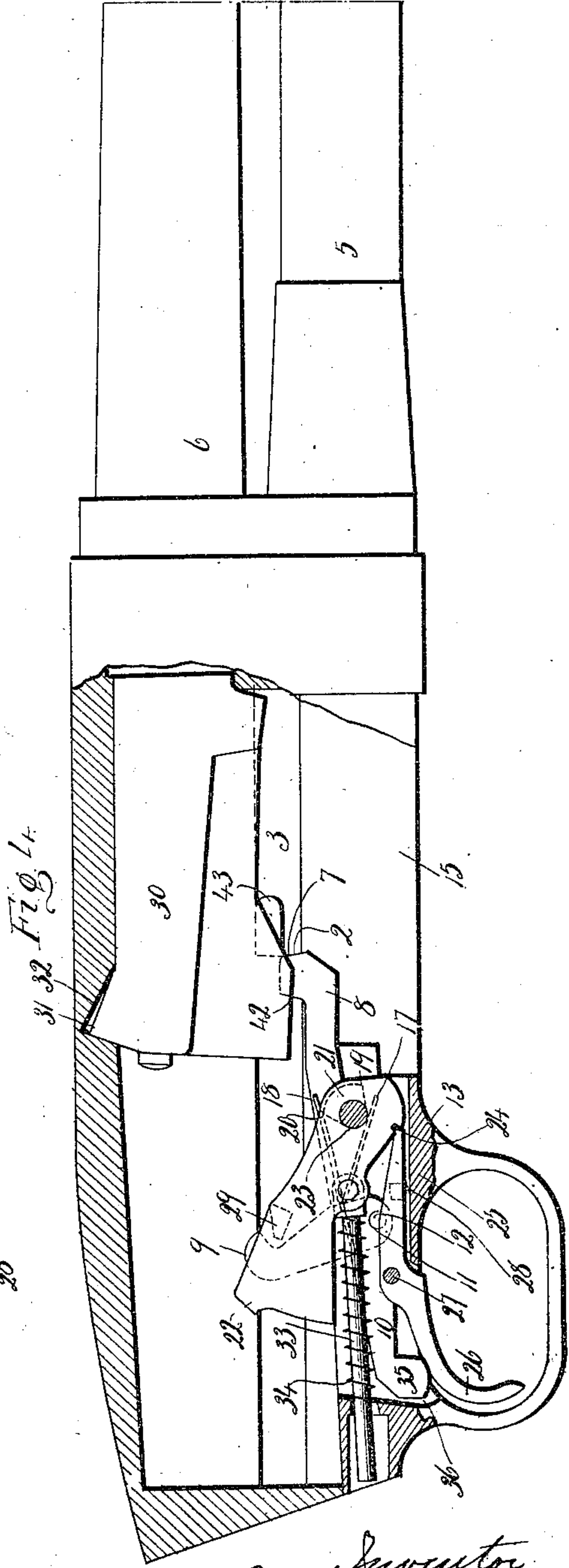


Fig. 4

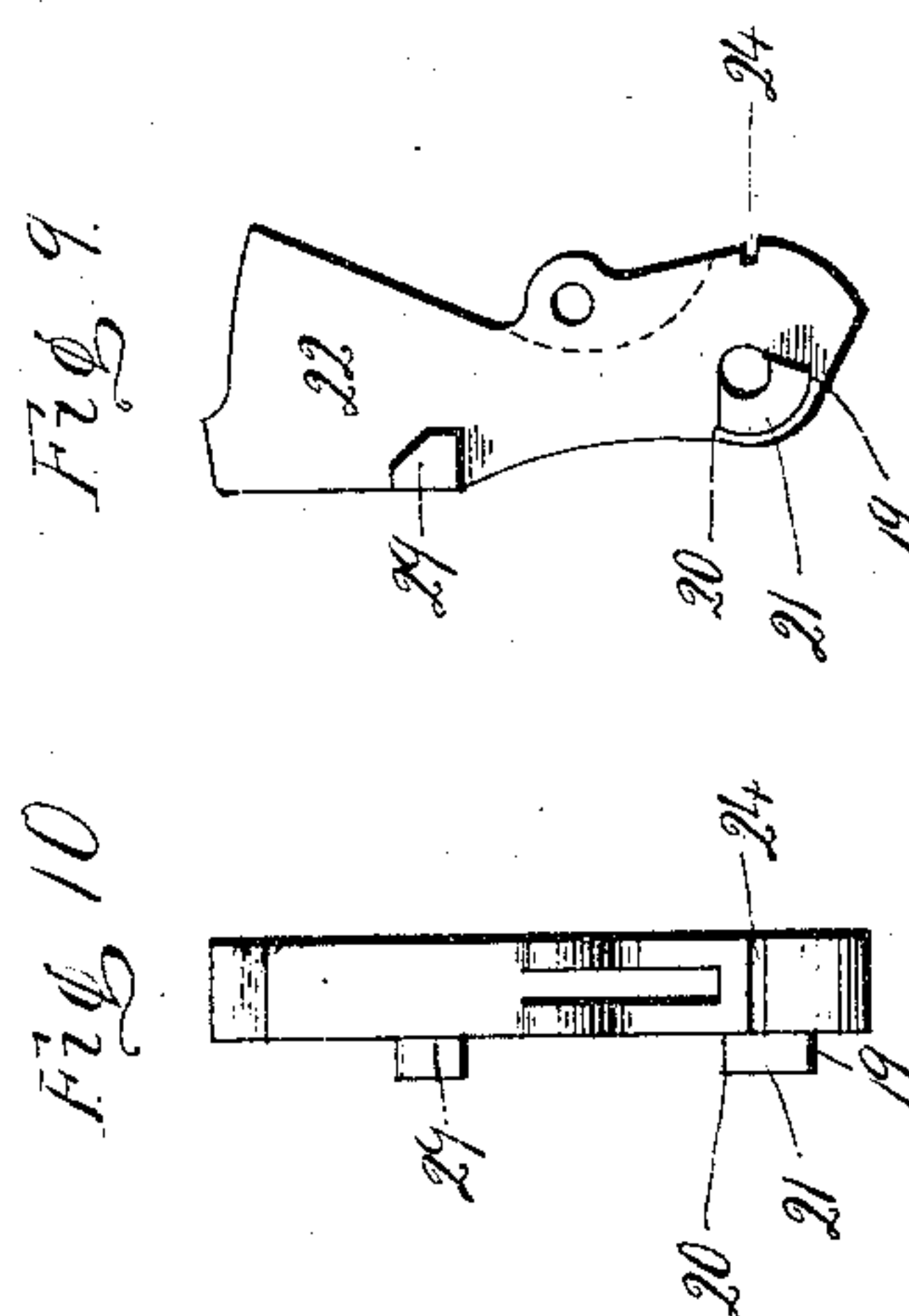
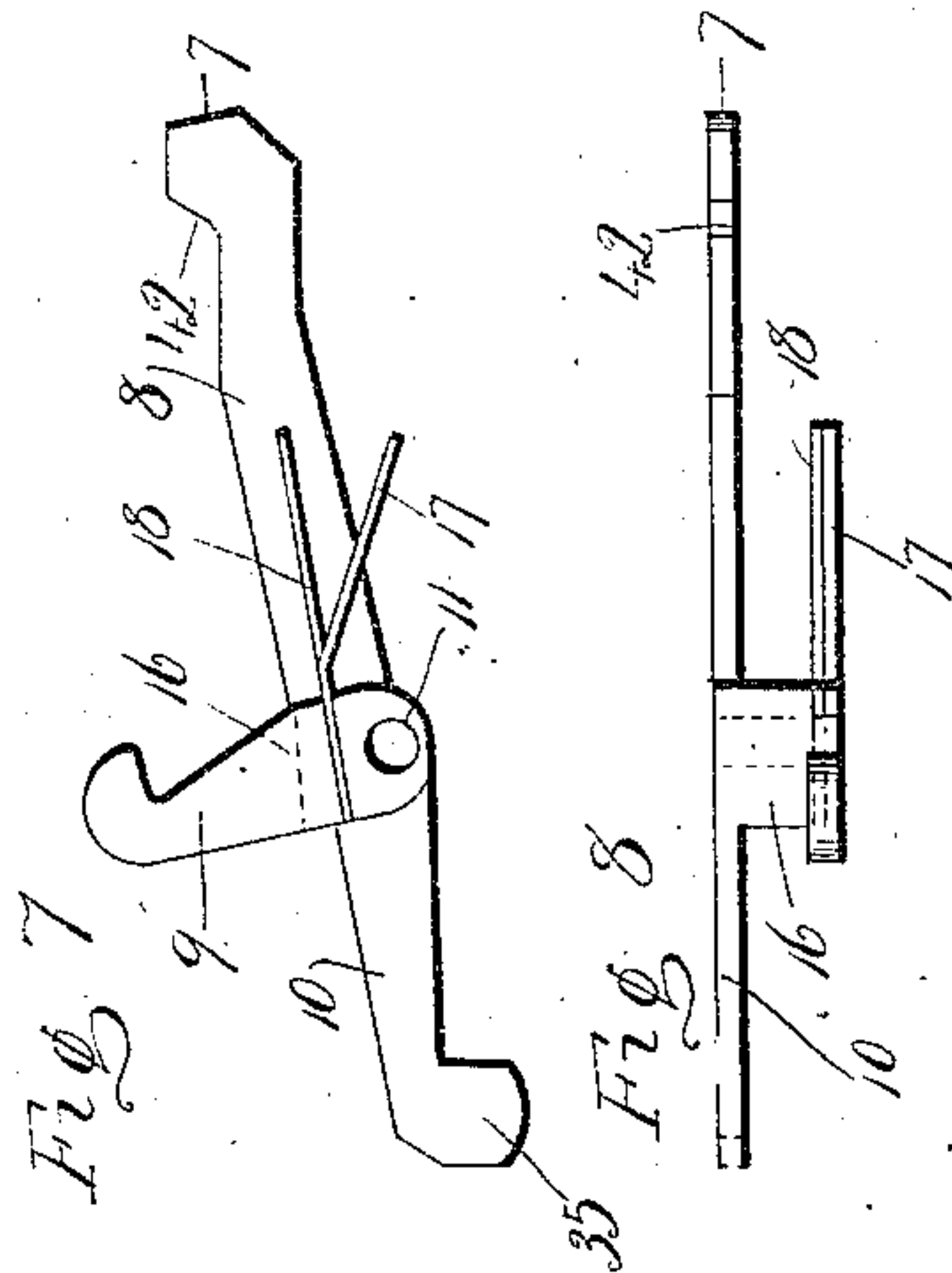
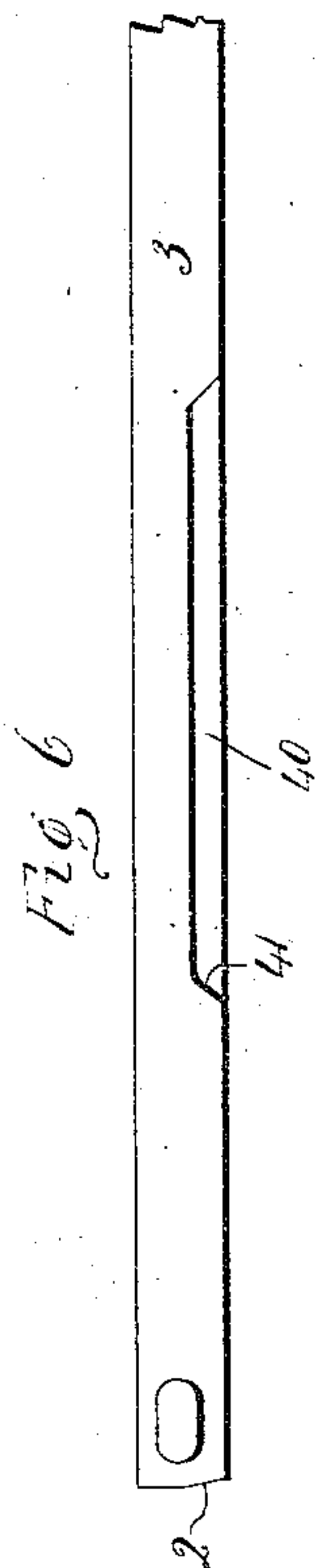
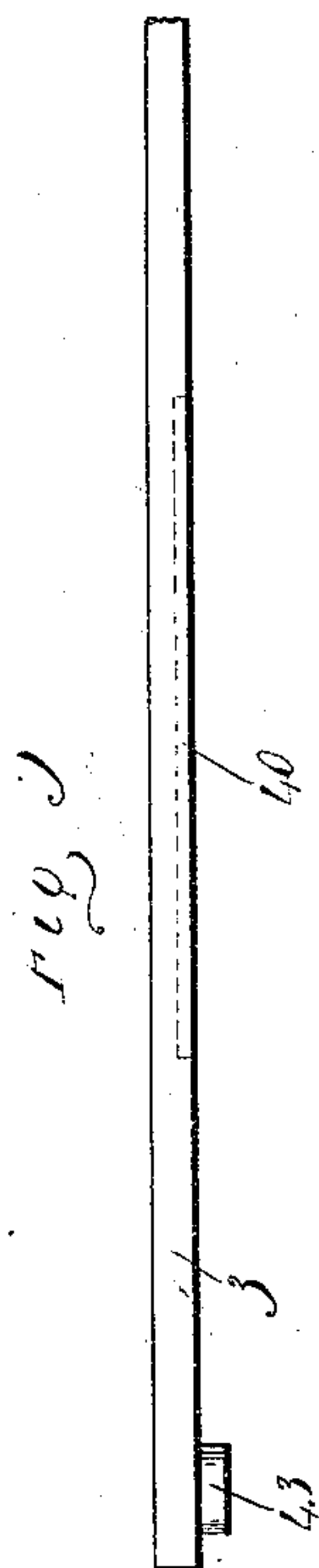
Inventor
 Thomas C. Johnson
 by Seymour T. Carr
 Atty

960,646.

T. C. JOHNSON.
REPEATING FIREARM.
APPLICATION FILED JAN. 29, 1910.

Patented June 7, 1910.

3 SHEETS—SHEET 3.



Witnesses
C. J. Reed.
C. L. Weed

Inventor
Thomas C. Johnson
by Seymour H. Carle
Attys

UNITED STATES PATENT OFFICE.

THOMAS C. JOHNSON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO WINCHESTER REPEATING ARMS CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

REPEATING FIREARM.

960,646

Specification of Letters Patent.

Patented June 7, 1910.

Application filed January 29, 1910. Serial No. 540,931.

To all whom it may concern:

Be it known that I, THOMAS C. JOHNSON, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Repeating Firearms; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a broken view in vertical longitudinal section of a gun constructed in accordance with my invention and shown as closed and locked, and with the hammer in its fired position, my new combined part being, however, shown by full lines in the position it has just before firing the gun, and in broken lines in the position it has just after firing the gun. Fig. 2 a corresponding view of the gun showing the breech-closure at the point in its rearward excursion where it has thrown the hammer back into its cocked position in which its cock-notch is entered by the sear, my improved combined part being shown in the temporary clearance position which it takes during the rearward movement of the closure for the purpose of permitting the locking lug of the hammer to pass by the beak of the locking-hook of the said part. Fig. 3 a corresponding view showing the position of the breech-closure at that point during its forward excursion at which it is disengaged from the hammer and closes to control the same which takes place just after the beveled rear wall of the clearance cut in the action-bar has acted upon the forward end of the blocking-arm of the combined part to depress the same and force the locking-hook of the said part over the locking-lug of the hammer which is thus prevented from falling even though the trigger should be pulled at this time. Fig. 4 a corresponding view with the parts of the gun in readiness for firing the same. Fig. 5 a detached plan view of the action-bar with the forward end thereof broken away. Fig. 6 a view of the rear end of the action-bar in inside elevation with its forward end broken away. Fig. 7 a detached view in side elevation of my improved combined part together with its two-legged spring. Fig. 8 a plan view thereof. Fig. 9 a detached view in in-

side elevation of the hammer. Fig. 10 a view thereof in rear elevation.

My invention relates to an improvement in that class of repeating firearms, the mechanism of which is operated by a sliding handle located forward of the gun-frame or receiver and connected with the mechanism of the gun by means of an action-bar, the object of my invention being to guard against the premature opening or firing of the gun, by mechanism of simple, positive and reliable character.

With these ends in view my invention consists in a repeating gun having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown, I form a bevel 2 upon the extreme rear end of the action-bar 3 which is connected at its forward end in any approved manner with the rear end of the sliding operating-handle or forearm 4 which is mounted to slide upon the tubular magazine 5 located beneath the gun-barrel 6.

The said bevel 2 at the rear end of the bar 3 coacts with a corresponding bevel 7 located upon the upturned forward end of the blocking-arm 8 of a combined part which also comprises a hammer-locking hook 9 and a manually operated arm 10, and is formed at the base of the hook 9 with a pivot-hole 11 receiving a pivot 12 passing through the upper portion of the guard 13 which is secured to the lower portion of the gun-frame or receiver 14 which is formed with a solid top and in its right-hand side wall with an ejection-opening which is not shown, and in its bottom with a feeding-opening 15. The said combined part functions as an action-bar lock and provides for opening the gun manually without firing it. For convenience I shall speak of this part as the combined part, since it acts as one piece and is preferably so made. The said combined part which swings in a vertical plane on the pivot 12, is formed with a hub 16 extending from left to right and carrying a two-legged spring having a lower leg 17 and an upper leg 18 extending forward and respectively coacting with the lower point 19 and the upper point 20 of a lug 21 located upon the inner or left hand face of the hammer 22 which is mounted upon a pivot 23 and formed with a cock-notch 24 receiving a sear 25 made integral

with a trigger 26 hung upon a pivot 27 in the guard 13. A small helical spring 28 entering the lower face of the sear 25 provides for entering the nose thereof into the cock-
5 notch 24 of the hammer 22.

For coaction with the hammer-locking-hook 9 of the said combined part, the hammer is formed upon its inner or left hand face with a locking-lug 29 which coacts with
10 the beak of the said hook to prevent the hammer from following—so to speak, the breech-closure 30 in the forward or closing movement thereof and from being fired in case the user of the arm should pull the trig-
15 ger at this time after the closure in its forward movement has left the hammer in its cocked position. The said breech-closure 30 is of the compound movement type and formed at the upper corner of its rear end
20 with a locking or recoil-taking lug 31 entering a notch 32 in the lower face of the rounded top of the frame 14. The said hammer 22 is provided, as usual, with a rearwardly extending rod 33 forming a
25 guide-rod for the helical hammer spring 34 which encircles it.

At its rear end the manual arm 10 of the combined part is formed with a finger-piece 35 which projects downward through a cut
30 36 in the guard 13. I thus provide for manually opening the gun without firing it, as will be explained later on.

For maintaining the engagement, under normal conditions, of the bevel 2 of the ac-
35 tion-bar and the bevel 7 of the combined part, I employ a spring 37 consisting of a flat broken ring forming one coil of a helical spring. This spring encircles the tubular magazine 5 and is interposed between
40 a fixed collar 38 on the same, and a collar 39 located within the rear end of the sliding handle 4 and exerts a constant effort to press the bevel 2 of the rod 3 against the bevel 7 of the combined part, being enough more
45 powerful than the upper leg 18 of the two-legged spring before referred to, to overcome the tendency of the said leg 18 to move the blocking-arm 8 of the combined part
50 downward out of the path of the action-bar 3.

For the purpose of momentarily permitting the hammer-locking hook 9 to incline rearward as the hammer 22 is swung rear-
ward by the breech-closure 30 during the
55 rearward excursion thereof, the lower inner face of the action-bar 3 is formed with a long clearance cut 40 terminating at its rear end in a depressing cam 41 which in the forward movement of the action-bar 3 engages
60 with the beveled rear edge 42 of the upturned end of the blocking-arm 8 of the combined part, whereby the same is rocked on its pivot 12 and its hook 9 swung forward over the lug 29 of the hammer 22 which is
65 thereafter held against following the breech-

closure 30 forward even though the trigger should be pulled so as to disengage the sear 25 from the cock-notch 24 of the hammer which will thus be held by the said arm 8 and therefore independent of the trigger 70 and sear, in its cocked position while the breech-closure 30 is being moved into its fully closed and locked position by the ac-
tion-bar 3. After the breech-closure has been moved into its closed and locked posi-
75 tion, the action-bar is moved still farther forward so as to clear its rear end from the front end of the blocking-arm 8 and permit the spring 18 to rock the said combined part on its pivot 12 and so lift the arm 8 in
80 position to block the rearward movement of the action-bar which is set back so to speak, to keep its bevel 2 engaged with the bevel 7 of the arm 8 by the spring 37 which was placed under tension for this very purpose
85 at the end of the forward excursion of the said bar. Now when the spring 18 rocked the combined part on its pivot 12 as described, the hammer-locking hook 9 was swung back clear of the lug 29 of the ham-
90 mer, releasing the same to the action of the sear 25 and trigger 26. But as will be observed, the hammer was held by the hook 9 against being so released until after the gun was fully closed and locked.

At its rear end the action-bar 3 is pro-
95 vided with an inwardly projecting operating lug 43 which travels in a cam-path 44 in the left hand side wall of the breech-closure 30, this cam-path being suitably conformed for
100 raising and lowering the closure at its rear end as required. It will be observed by reference to Fig. 3, that the enlarged rear end of the cam-path 44 is longer in the direction
105 of the axis of the closure than the lug 43 which permits the action-bar to travel a short distance at the very beginning of its forward and rearward excursion before it begins to take effect upon the closure. Of
110 these two excess or independent movements of the action-bar only the forward movement is utilized, that being used as a timing movement to change the relative position of
the action-bar 3 with respect to the combined part for causing the depressing cam 41 at
115 the rear end of the clearance cut 40 of the said bar to gain, so to speak, upon the bevel 42 upon the rear edge of the upturned forward end of the blocking-arm 8 of the com-
120 bined part so that in closing the gun just before the rear end of the breech-closure 30 is disengaged from the hammer 22, the depressing-cam 41 will catch up with the bevel
125 42 and rock the combined part on its pivot 12 against the tension of the leg 18 of the two-legged spring, whereby the hook 9 of the combined part will swing over the lug 29 of the hammer 22 and hold the hammer in its cocked position by the hook 9 irre-
spective of the sear and trigger.

Having now described in detail the construction of my improved gun, I will briefly set forth the method of its operation. When the gun is fully closed, the spring 37 holds the bevel 2 of the action-bar 3 against the bevel 7 of the blocking-arm 8 of the combined part, whereby the gun is locked against being opened by any rearward pull upon the operating handle which experience has shown the user tends almost unconsciously to pull back upon rather than to push forward. When the gun is fired, the shock of recoil causes a momentary separation between the rear end of the action-bar 3 and the forward end of the arm 8 which latter is then thrown down out of the path of the action-bar by the tension of the leg 17 of the two-legged spring, this leg of the spring having been placed under tension by the lower corner 19 of the lug 21 upon the hammer in the following movement thereof. Even if the user of the gun is pulling rearward upon the handle at the time the gun is fired, the gun will be unlocked as the force of his rearward draft upon the handle will be inferior in power to the shock of recoil; but no matter how hard he pulls rearward upon the handle, the gun will always remain locked until the cartridge explodes, whereby all cases of delayed ignition or "hang-fires" are taken care of.

During the rearward movement of the action-bar in opening the gun, its clearance cut 40 is brought into registration with the upturned end of the blocking-arm 8 of the combined part, which is thus allowed to swing in a vertical plane on its pivot 12 so as to bring the hook of the hammer-locking arm 9 into position for clearing the lug 29 of the hammer 22, so that when the gun is again closed the said hook will be in position to be swung forward over the said lug and thus hold the hammer in its cocked position irrespective of the trigger, from the time the control of the hammer by the breech-closure 30 is removed by the forward movement thereof. Just before the gun is fully closed, the spring 37 is placed under sufficient pressure to set the action-bar 3 back upon the arm 8 of the combined part so as to lock the gun in its closed position against being prematurely opened by an unconscious rearward draft upon the handle at the time of firing. In case it is desired to open the gun without firing it, it is only necessary for the user to push forward on the finger-piece 35 at the rear end of the manually operated arm 10 of the combined part, the blocking-arm 8 of which will then be moved down so as to clear the rear end of the action-bar 3. The other features of the operation of the mechanism were so fully set forth in connection with the description of the mechanism that it is thought unnecessary to rehearse them again.

I claim:—

1. In a repeating firearm, the combination with the breech-closure and hammer thereof, of an operating handle and action-bar, a two-legged spring the legs of which are alternately placed under tension by the hammer, a blocking-arm adapted to be directly engaged with the rear end of the action-bar and raised and lowered by the respective legs of the said two-legged spring, and a spring combined with a handle for normally holding the rear end of the action-bar in engagement with the blocking-lever and superior in power to one leg of the two-legged spring aforesaid.

2. In a repeating firearm, the combination with the breech-closure, hammer and trigger thereof, of an operating-handle and its action-bar, and a combined part hung to swing in a vertical plane, the said part coacting directly with the rear end of the action-bar for locking the gun against rearward draft upon the handle, with the hammer to hold the same in its cocked position irrespective of the trigger, and the said part also being adapted to be manually operated from the outside of the gun-frame.

3. In a repeating firearm, the combination with the breech-closure, hammer and trigger thereof, of an operating handle and its action-bar, and a combined part operating as one piece and comprising a blocking-arm coacting directly with the rear end of the action-bar, a hammer-locking hook coacting with the hammer, and a manually operable arm projecting through the frame of the gun.

4. In a repeating firearm, the combination with the breech-closure, hammer and trigger thereof, of an operating handle and its action-bar, the latter being furnished with a clearance cut, and a combined part comprising a blocking-arm coacting with the rear end of the action-bar, a hammer-locking hook coacting with the hammer, and a manually operable arm, the said blocking-arm entering the said clearance cut in the action-bar and being forced out of the same for the coaction of the said hook with the hammer.

5. In a repeating firearm, the combination with the breech-closure thereof, of a hammer provided with a locking-lug upon one of its faces, a trigger, an operating handle, an action-bar carried thereby, and a combined part adapted to be manually operated and provided with a blocking-arm coacting with the action-bar and with a hammer-locking hook coacting with the said lug on the hammer, the said combined part being swung upon its pivot by the action-bar to effect the coaction of its hook with the lug on the hammer.

6. In a repeating firearm, the combination with a compound movement breech-closure having a cam-path, of a hammer, an operat-

ing handle, an action-bar provided at its rear end with an operating-lug extending into the said cam-path the rear end of which is enlarged to permit the bar to gain upon the breech-closure in the closing of the gun, and a combined part adapted to be manually operated, provided with a blocking-arm coacting with the rear end of the action-bar, and with a hammer-locking hook coacting with the hammer, the said hook being controlled in its coaction with the hammer, by the said action-bar and blocking-arm which are brought into operative relations in closing the gun by the gain of the action-bar in movement at the beginning of the closing of the gun.

7. In a repeating firearm, the combination with a compound movement breech-closure, of a hammer provided with a locking-lug upon one of its faces, an operating-handle, an action-bar carried thereby, a combined pivotal part adapted to be manually operated and comprising a blocking-arm coacting directly with the rear end of the action-bar, and a two-legged spring coacting with the said blocking-arm and having one leg placed under tension by the said lug of the hammer when the hammer is in its cocked position, and the other leg placed under tension by the said lug of the hammer when the hammer is in its fired position.

8. In a repeating firearm, the combination with the breech-closure and hammer thereof, of an operating-handle and its action-bar, and a combined pivotal part comprising a blocking-arm coacting with the rear end of the action-bar, and a locking-hook coacting with the hammer for holding the same in its cocked position, the operation of the said locking-hook in holding the hammer being directly controlled by the action-bar through the blocking-arm.

9. In a repeating firearm, the combination with the frame, breech-closure and hammer thereof, of an operating-handle having a rearwardly extending action-bar, and a combined pivotal part operating as one piece, and comprising a member coacting with the rear end of the said action-bar for blocking the rearward movement of the operating-handle, a member coacting with the hammer for holding the same in its cocked position, and a member extending through the frame of the gun for the manual operation of the said part to permit the opening of the gun.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

THOMAS C. JOHNSON.

Witnesses:

GEORGE DUDLEY SEYMOUR,
CLARA L. WEED.