

W. H. GATES.
SAFETY MECHANISM FOR FIREARMS.
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934,065.

Patented Sept. 14, 1909.

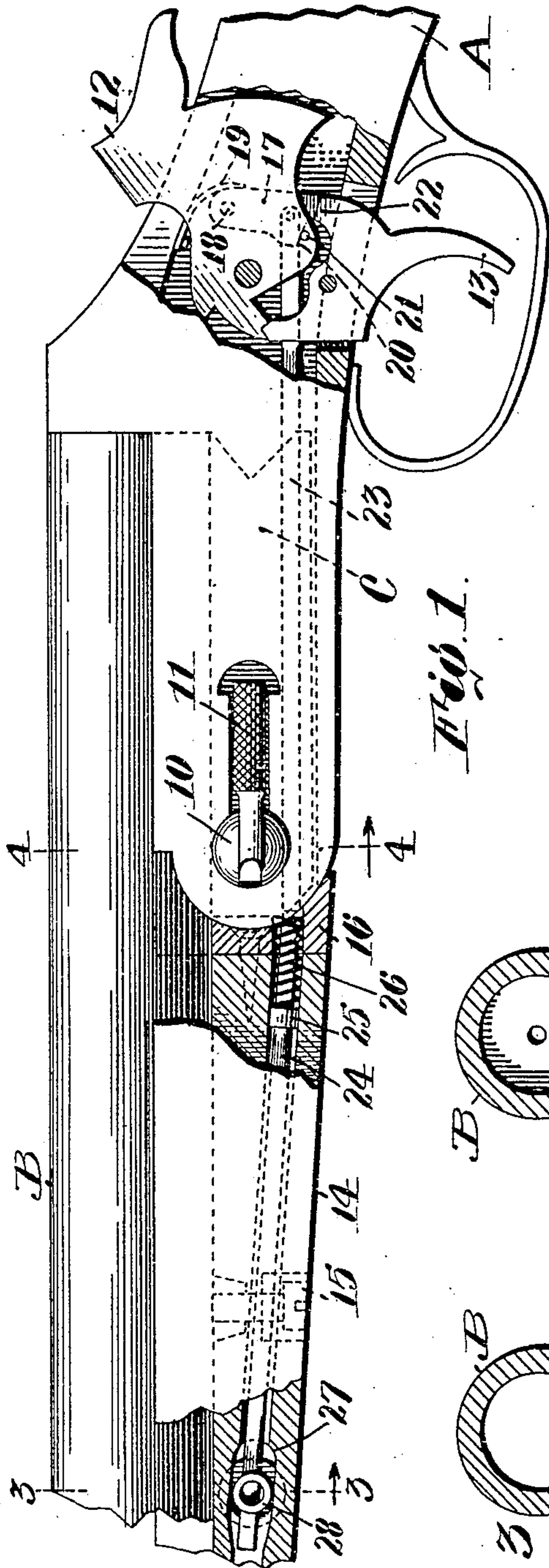


Fig. 1.

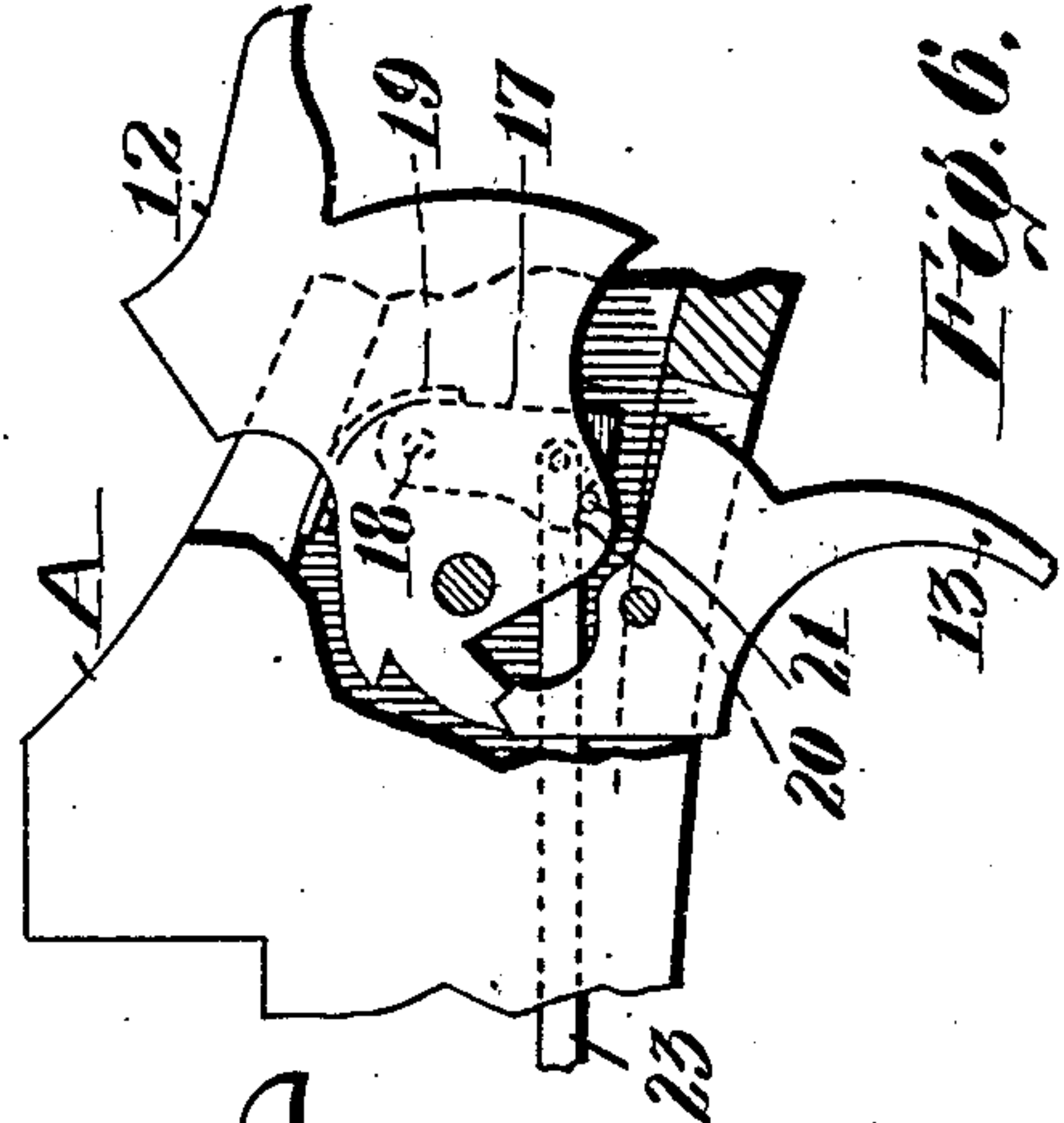


Fig. 6.

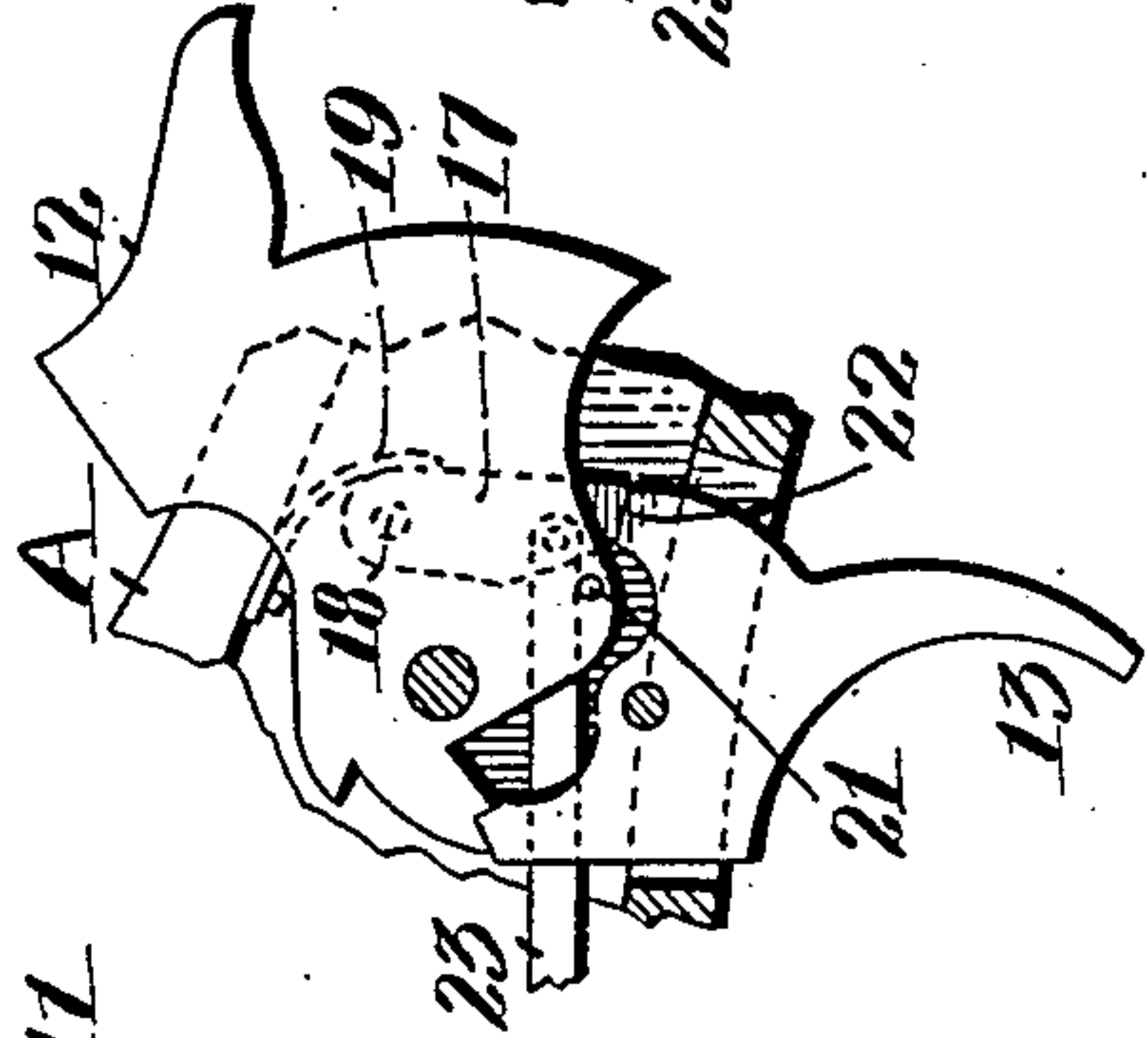


Fig. 5.

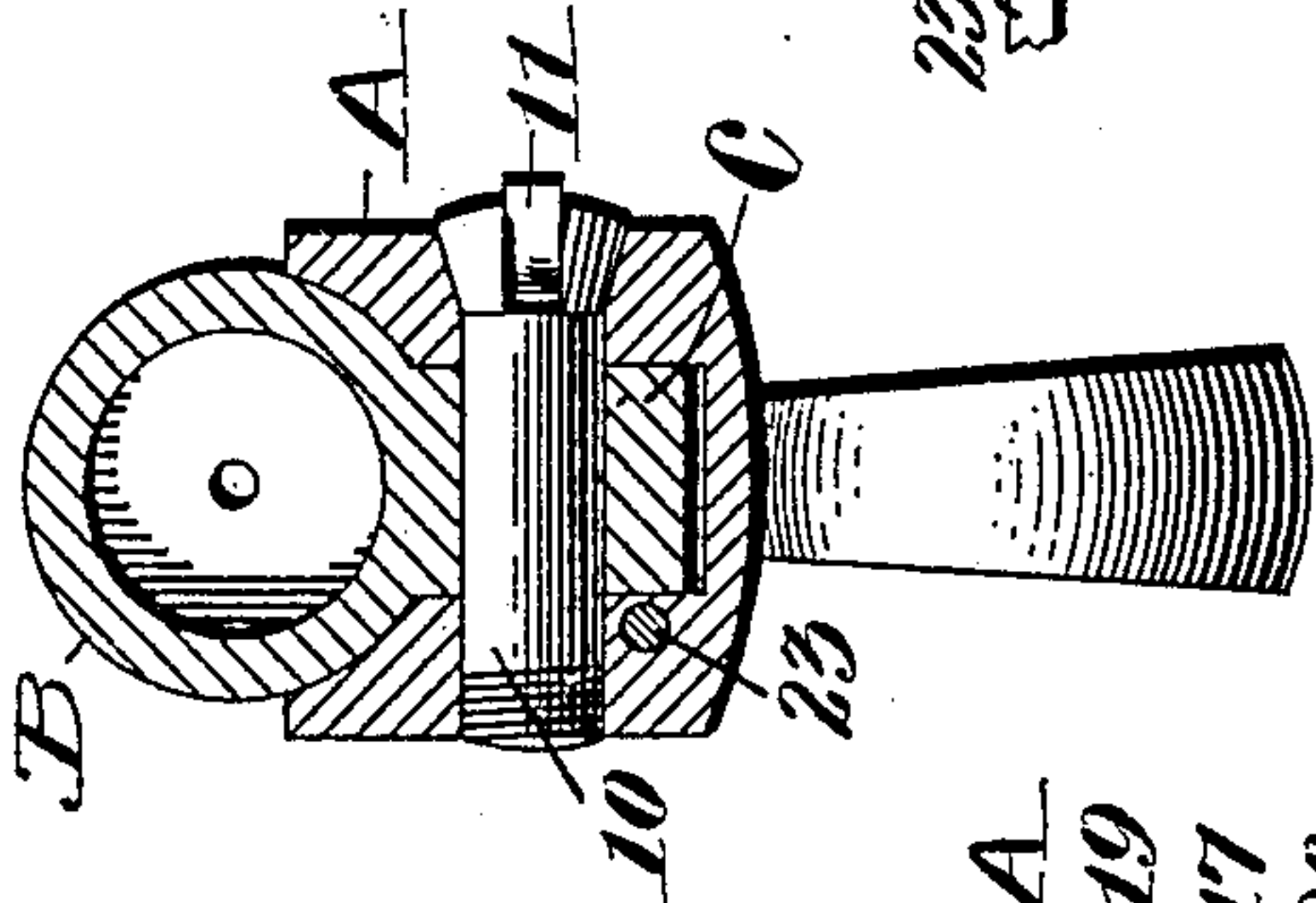


Fig. 4.

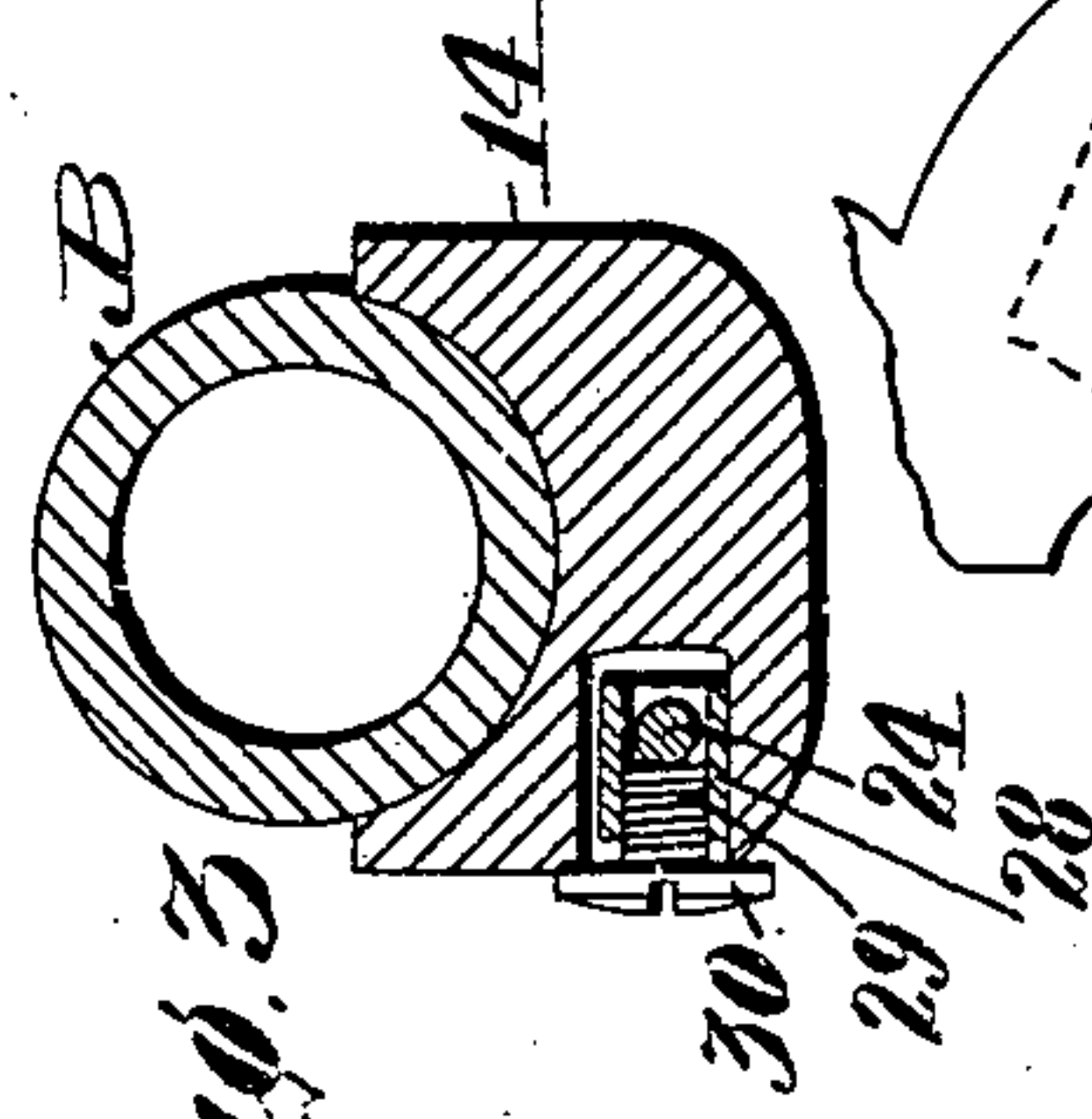


Fig. 3.

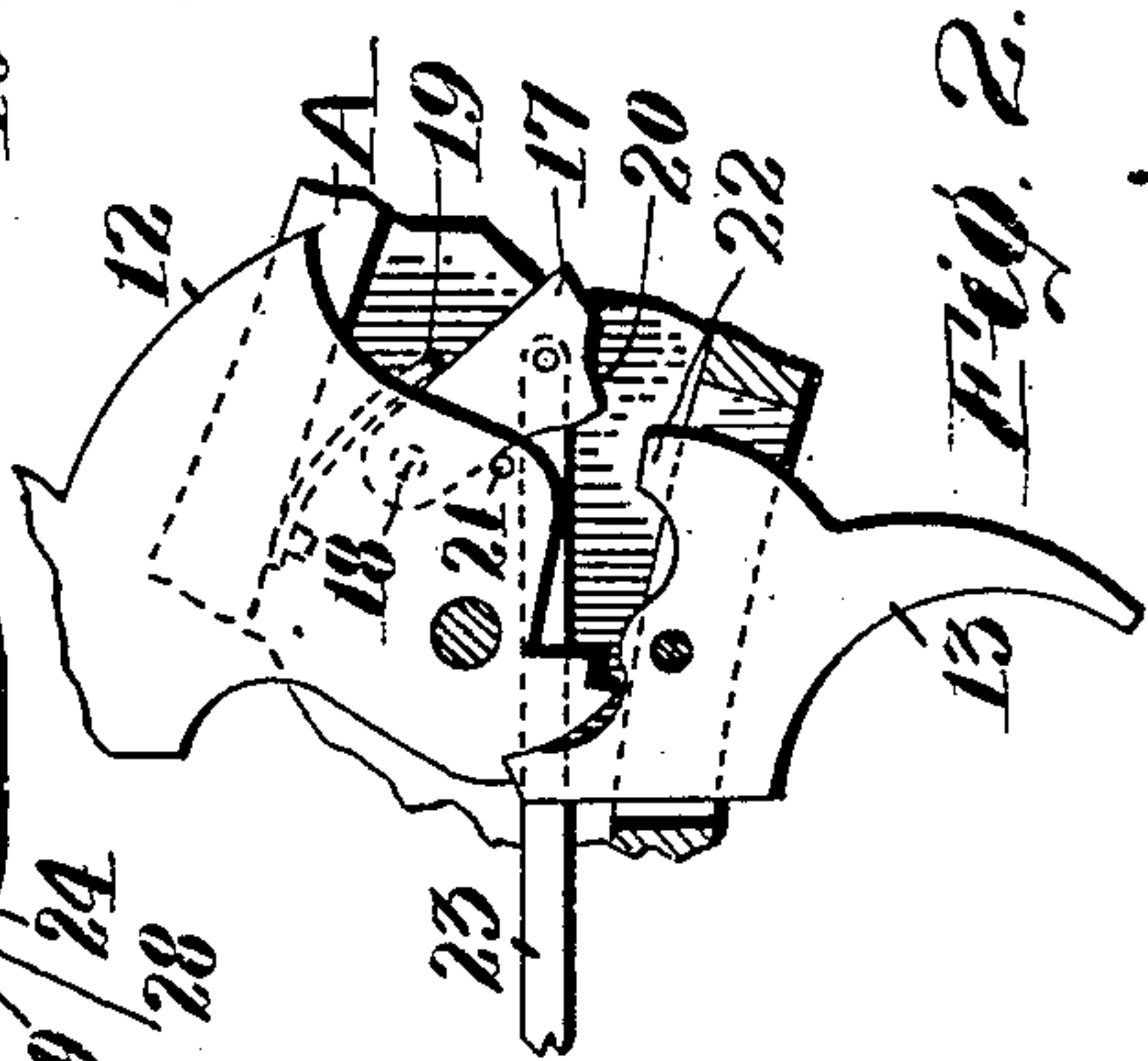


Fig. 2.

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UNITED STATES PATENT OFFICE.

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SAFETY MECHANISM FOR FIREARMS.

934,065.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed June 26, 1908. Serial No. 440,435.

To all whom it may concern:

Be it known that I, WILLIAM H. GATES, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented a new and useful Safety Mechanism for Firearms, of which the following is a specification.

The object of this invention is to provide a new and improved safety mechanism for locking fire-arms against accidental discharge.

To this end the invention consists of the device described and claimed in this specification and illustrated in the accompanying drawing, referring to which,

Figure 1 is a side elevation partly in section illustrating the application of my invention to a single barreled shot-gun. Fig. 2 is a partial view similar to Fig. 1 showing the parts in another position. Fig. 3 is a section taken on the line 3—3 of Fig. 1. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1. Fig. 5 is a partial side elevation illustrating a modification, and Fig. 6 is a similar view illustrating a still further modification.

Referring to the drawing and in detail, A designates the stock and B the barrel of a gun. The barrel has the usual depending lug C which fits into the stock and which is pivoted thereto by a pin 10 which is screw-threaded into one of the arms of the stock, which pin can be turned by an arm 11 pivoted thereto.

The hammer 12 and the trigger 13 are pivoted in the stock in the usual way and are actuated by the usual spring not necessary here to show.

14 designates the usual fore-arm which may be attached to the barrel by means of a screw 15. This fore-arm may be made of wood and may have a metallic plate or base 16 held thereto by suitable screws. These parts may be made of any ordinary or approved construction and need no further description. The hammer may bear directly on the cartridge or shell or any of the usual firing pins.

In the first modification, a locking mechanism is employed which locks both the hammer and trigger. This locking mechanism consists of an arm 17 which is hung on a pivot 18 in the stock so that said arm hangs freely at one side of the hammer as shown.

A spring 19 is secured to the stock and is arranged to bear on the locking arm 17 so as to throw the lower end of the same normally forward.

In the form under discussion, the locking arm has a forwardly extending projection 20. A pin 21 is secured in the hammer to cooperate with the projection 20. The trigger is provided with an upwardly extending ear or projection 22 to engage under the end of the locking arm. When the parts are in normal position and the hammer locked, as shown in Fig. 1, it is impossible to pull the trigger backward as the projection 22 of the trigger engages with the end of the locking arm 17 and it is also impossible for the hammer to drop or descend toward the barrel as the hammer pin 21 engages under the projection 20 of the locking arm.

To release the locking arm the following mechanism is provided. A rod 23 is pivoted to the locking arm 17. This rod extends forward through a hole bored in one of the side arms of the stock, as indicated in Fig. 4. A hole is bored through the fore-arm on an incline, as shown in Fig. 1 and fitted in this hole is a bar 24. The hole in the fore-arm is arranged so that the end of the bar 24 will engage the end of the rod 23. The bar 24 has a collar 25 thereon and engaging said collar is a spring 26 which tends normally to force the bar 24 forward. The fore-arm is also provided with a slot 27 in one of its sides. Working in this slotted portion 27 of the fore-arm is a cylinder 28. A hole is bored through this cylinder so that the bar 24 can pass through the same. A screw 29 is tapped or threaded in the end of the cylinder 28 so as to engage the bar 24. The screw 29 has a large head 30 fitting on the side of the fore-arm, as shown in Fig. 3, so as to form an operating piece. By this construction an adjustable connection is provided between the screw 29 and the bar 24.

The operation is as follows:—When the gun is cocked the parts assume the position shown in Fig. 1 and the locking arm 17 engages the trigger projection 22 to prevent the trigger being pulled backward to release the hammer and the hammer pin 21 engages under the projection 20 of the locking arm so that the hammer cannot be pulled forward. This locks both hammer and trigger as previously described. When it is

desired to fire the gun, the head 30 of the screw 29 or the operating piece is pushed to the rear which can be conveniently and easily done by the hand which grasps the fore-arm. This swings the locking arm 17 backward and releases the same from the trigger projection 22 and moves the projection 20 away from engagement with the hammer pin 21. This allows the trigger to be pulled to fire the gun.

The gun shown has the usual rebounding hammer and when the hammer is in its uncocked position the parts assume the position shown in Fig. 2. In this position of parts the hammer pin 21 engages the locking arm 17 above the projection 20 and pushes said locking arm to the rear so that the end of the same is clear of the trigger projection 22. This allows the hammer to be cocked in the usual way and when this action takes place the locking arm will swing forward to engage the trigger projection 22 and the hammer pin 21 moving forward will allow the swinging forward of the locking arm so that the projection 20 thereof will pass over the hammer pin 21 and lock the hammer in its raised position.

It will be noticed that when the gun is broken or when the barrel is turned around the pin 10 for loading, that the operating connections are not interfered with as the rod 23 is contained entirely within the stock and the bar 24 is contained entirely within the fore-arm.

The lines between the pivot 18 and the points at which the arm 17 engages the pin 21 or the end 22 of the trigger are substantially tangent to the line of motion of said pin 21 and end 22, consequently the pressure on the point and end are exerted directly toward the pivot 18 and the trigger and hammer are both positively and independently locked against motion in the direction for firing the arm.

In Fig. 5 a modification is shown wherein the projection 20 of the locking arm 17 is omitted and the locking arm 17 is used simply to lock the trigger from being pulled backward until the operating piece 30 is pushed to the rear. In this modification the hammer pin 21 serves the same functions as above, except that there is no lock provided for holding the hammer in cocked position until the safety is operated.

In Fig. 6 a modification is shown wherein the trigger projection 22 is omitted and the parts are arranged so that only the hammer is locked in cocked position until the safety is released. By the arrangements described, a very simple apparatus for the purposes mentioned is provided.

It will be noticed that the locking arm 17 normally tends to lock either or both firing members; that is, either or both the hammer or trigger, and that the gun can only be fired

by moving the locking arm backward through the connections described. Thus, no matter which modification shown in the drawings is employed, the hammer is locked in cocked position and the gun can only be fired when the locking arm is swung to the rear by means of the operating connections above described which extend out through the fore-arm.

Other constructions than those described may be made for practicing this principle of the invention. The details and constructions herein shown and described are thus subject to modification without departing from the scope of the invention as expressed in the claims.

Having thus fully described my invention, what I claim and desire to secure by Letters-Patent is:—

1. In a fire-arm, the combination of a trigger and hammer, a locking arm having means for engaging the hammer independently of the trigger and provided with a pivot, the line between the pivot and the point at which the locking arm engages the hammer being substantially tangent to the direction of motion of said point at which the arm engages the hammer, said arm also engaging the trigger at a point, the line between which and the pivot is substantially tangent to the direction of motion of said point on the trigger.

2. In a fire-arm, the combination of the trigger and hammer, a locking arm pivoted beside the hammer, a pin on the hammer in position to engage said arm, and operating connections for the locking arm extending out through the fore-arm.

3. In a fire-arm, the combination with the trigger and hammer, of a locking member located beside the hammer and having a projection thereon, a pin on the hammer adapted to engage said projection when said member is moved forward to lock the hammer in cocked position and adapted to engage the member when it is pushed backward to keep said member out of the way, and operating connections for said locking member.

4. In a fire-arm, the combination of the trigger and hammer, a locking arm pivoted beside the hammer and having a projection, a pin on the hammer coöperating with said projection, a projection on the trigger coöperating with said locking arm, and operating connections for said locking arm extending out through the fore-arm.

5. In a fire-arm, the combination of the trigger and hammer, a locking arm pivoted beside the hammer, said locking arm having a projection, a pin on the hammer coöperating with said projection, said trigger having a projection coöperating with said locking arm, a rod connected to said locking arm and extending forward through the stock, a bar fitted to slide in the fore-arm and to

engage said rod, and an operating piece or screw on the side of the fore-arm connected to said bar.

6. In a fire-arm, the combination of the
5 trigger and hammer, a locking arm pivoted beside the hammer, a spring tending normally to throw said locking arm forward, a projection on said locking arm, a pin on said hammer coöperating with the locking arm,
10 a projection on the trigger also arranged to coöperate with said locking arm, a rod connected to said locking arm and extending forward through the stock, a bar fitted to slide in the fore-arm and to engage said rod,
15 and an operating piece adjustably connected to said bar.

7. In a fire-arm, the combination of the trigger and hammer, a locking arm pivoted beside the hammer, a spring tending nor-
20 mally to throw said locking arm forward, a projection on said locking arm, a pin on said hammer coöperating with the locking arm, a projection on the trigger also arranged to coöperate with said locking arm, a
25 rod connected to said locking arm and extending forward through the stock, a bar fitted to slide in the fore-arm, an operating piece or screw adjustably connected to said

bar, and a spring normally tending to push said bar forward.

8. In a fire-arm, the combination with the trigger and hammer, of a locking member, a rod connected with said locking member and extending forward through the stock, a bar fitted to slide in the fore-arm, and to engage
35 the end of said rod, and an operating piece connected with said bar in the fore-arm, whereby when the gun is broken the position of the rod and locking member will not be disturbed by the motion of the bar.

9. In a fire-arm, the combination with the trigger and hammer, of a locking member, a rod connected with said locking member and contained entirely within the stock, a separate bar fitted to slide in the fore-arm
45 and contained entirely therein and adapted to engage said rod, an operating piece adjustably connected with said bar, and a spring normally tending to push said bar forward.

In testimony whereof I have hereunto set
50 my hand, in the presence of two subscribing witnesses.

WILLIAM H. GATES.

Witnesses:

L. P. CHURCH,
GEORGE FREDERICK NOYES.