

No. 835,112.

PATENTED NOV. 6, 1906.

J. D. PENDER & R. S. TROTT.
REAR SIGHT FOR FIREARMS.

APPLICATION FILED DEC. 26, 1905.

2 SHEETS—SHEET 1.

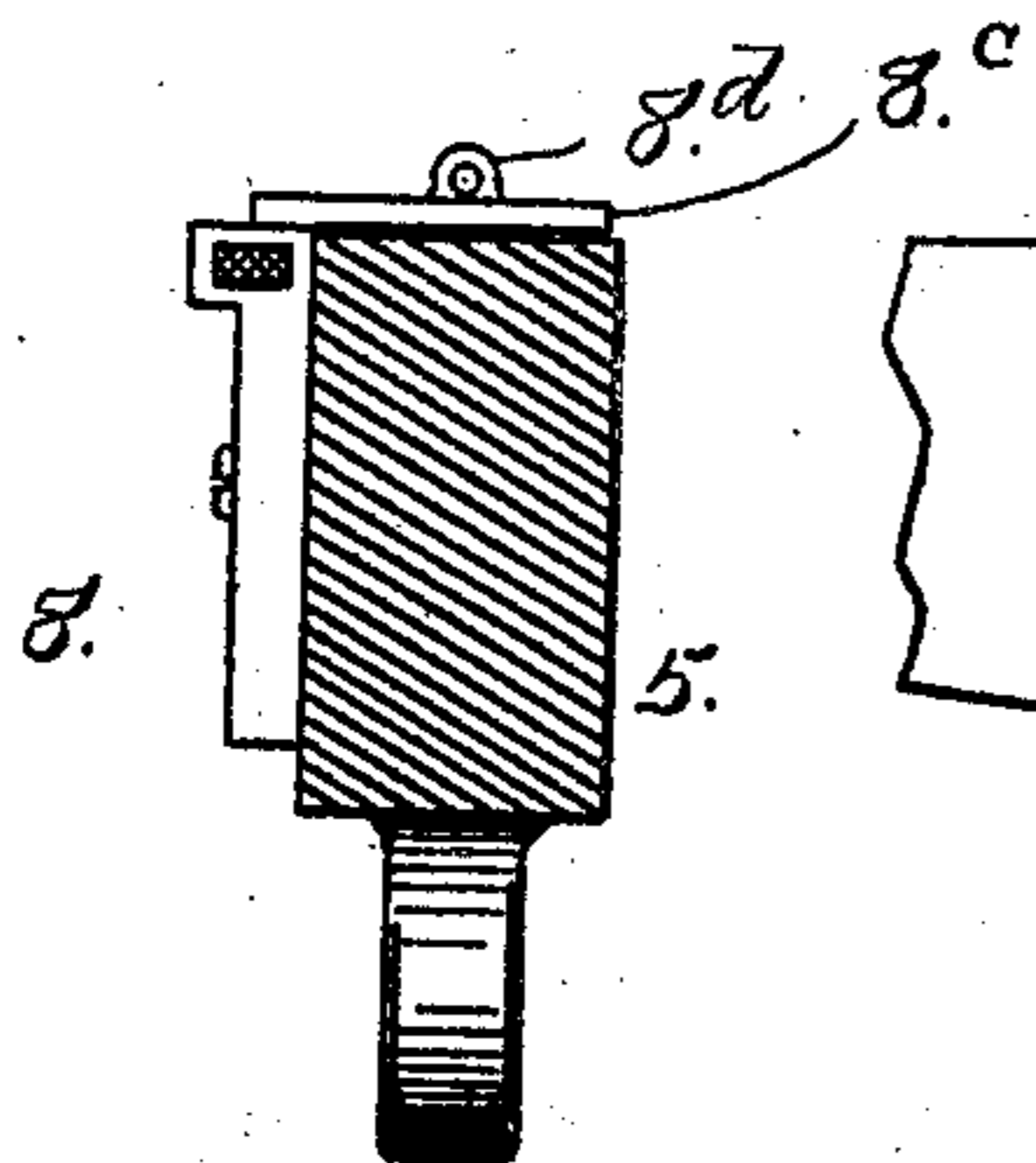


Fig. 1.

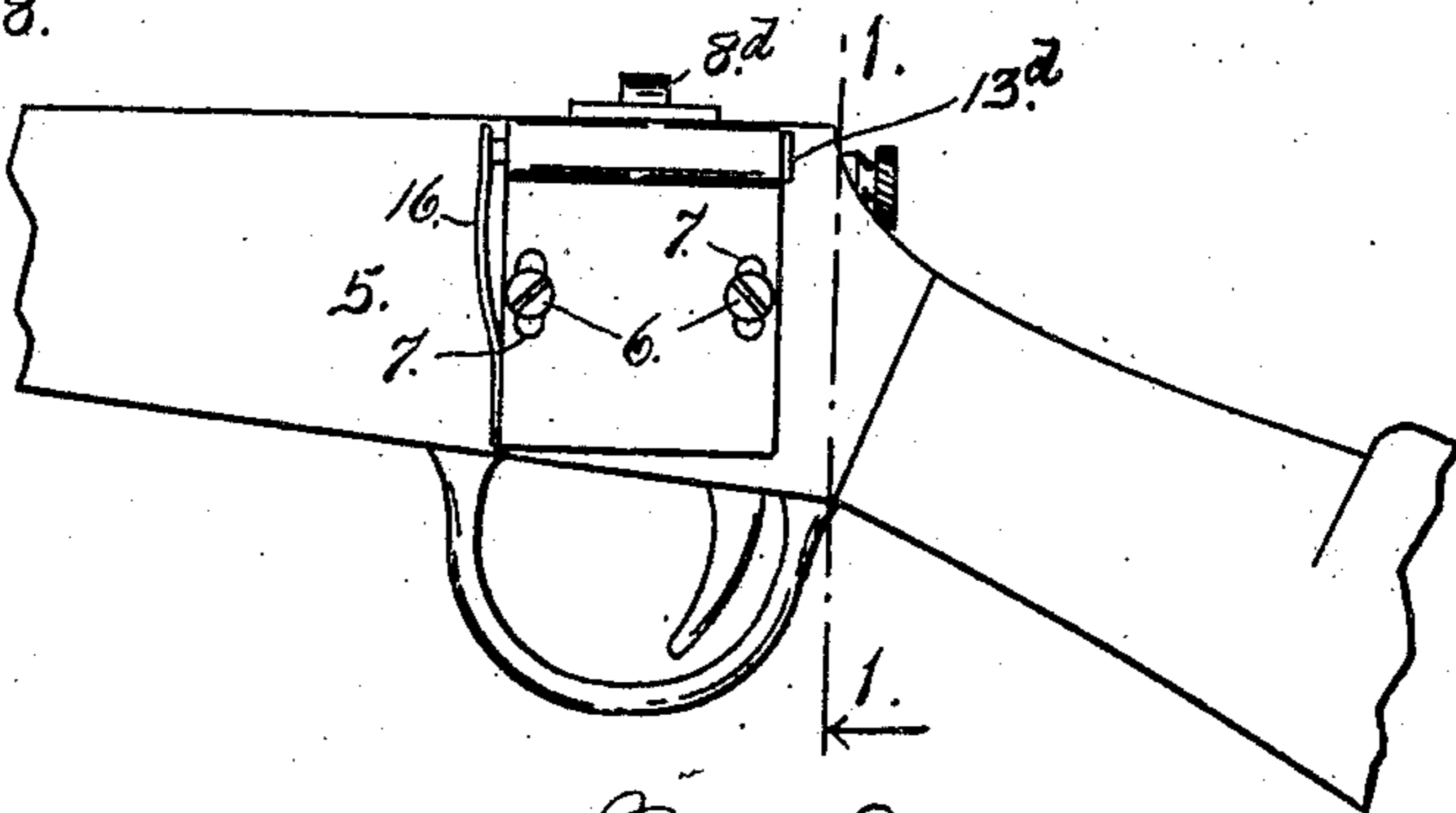


Fig. 2.

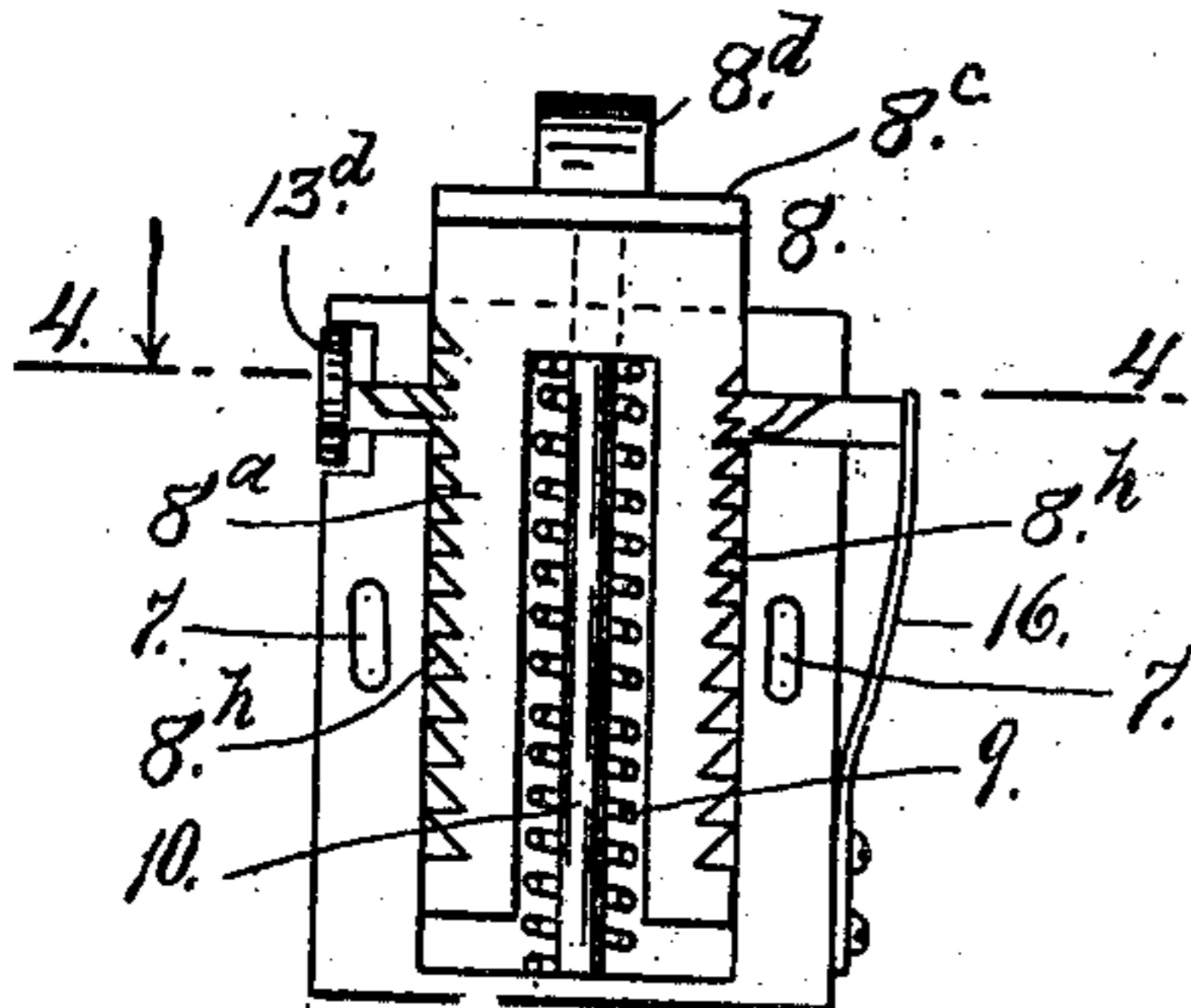


Fig. 3.

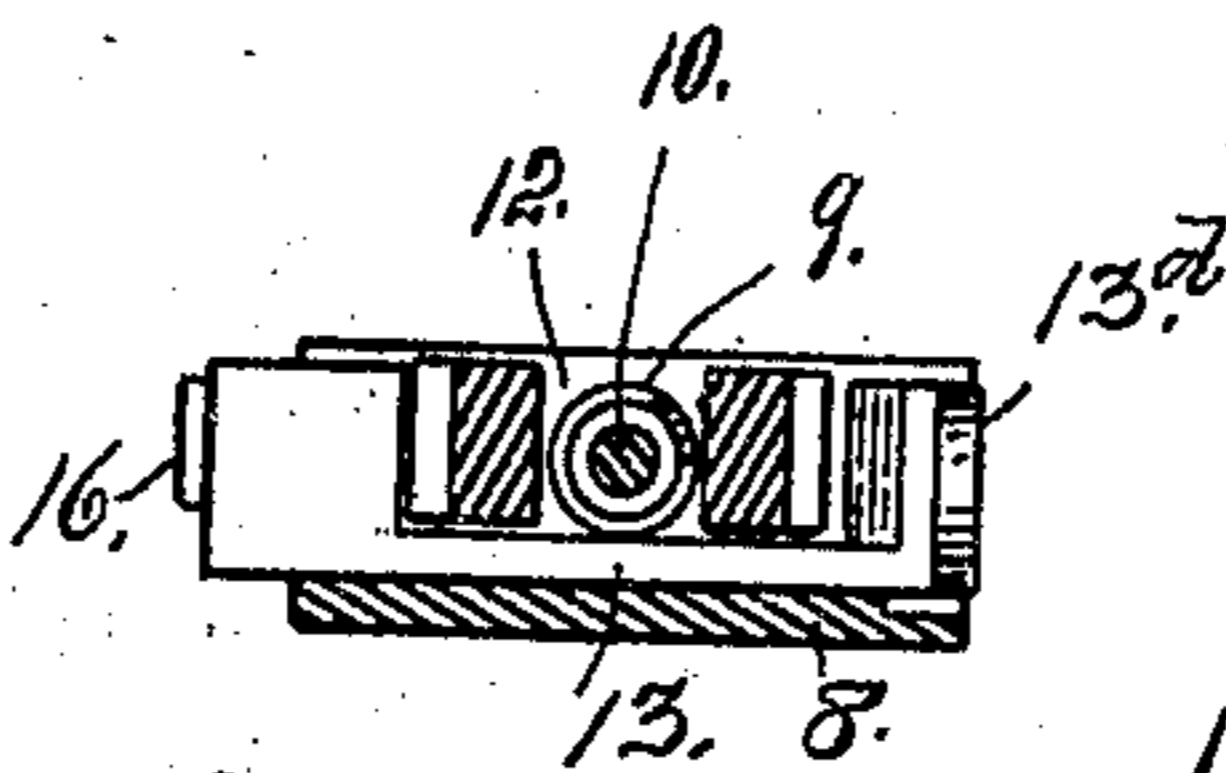


Fig. 4.

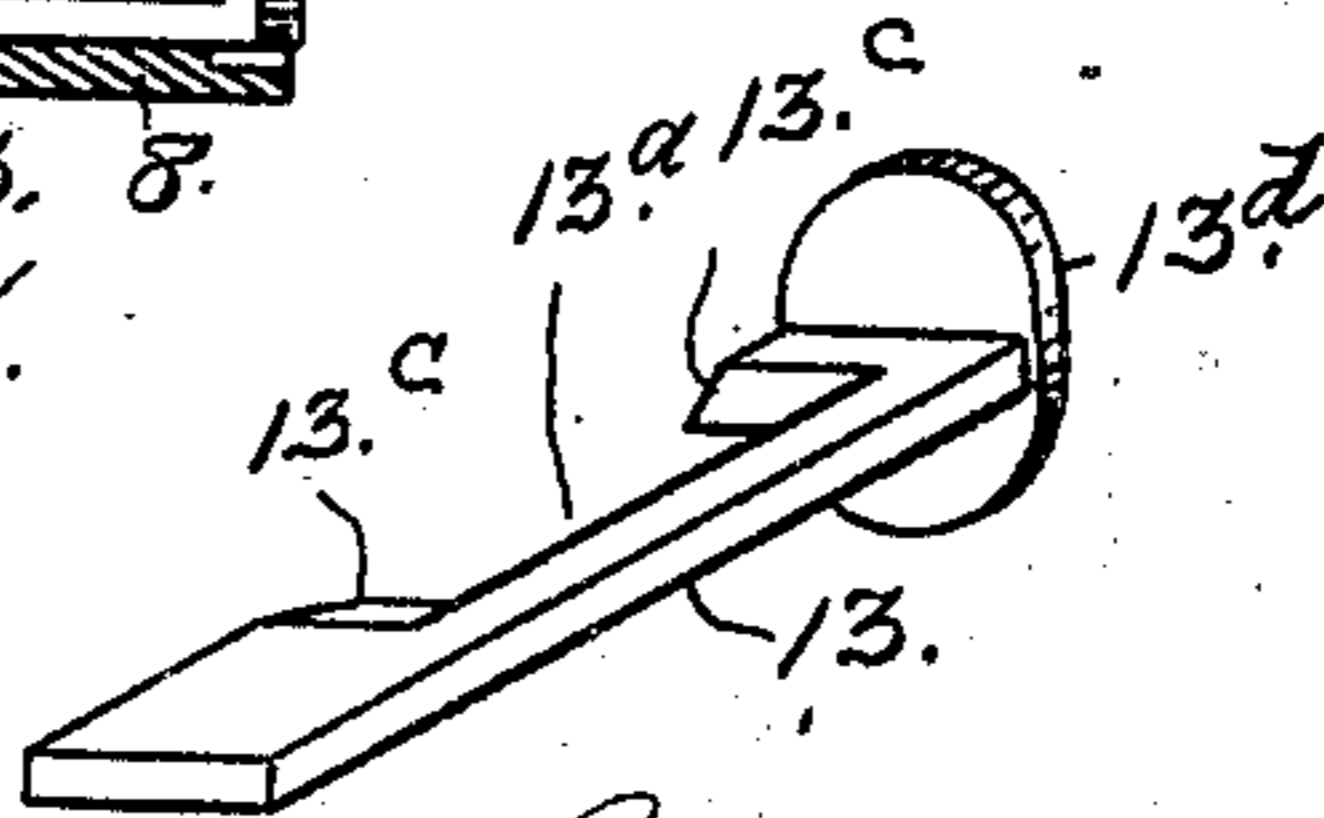


Fig. 5.

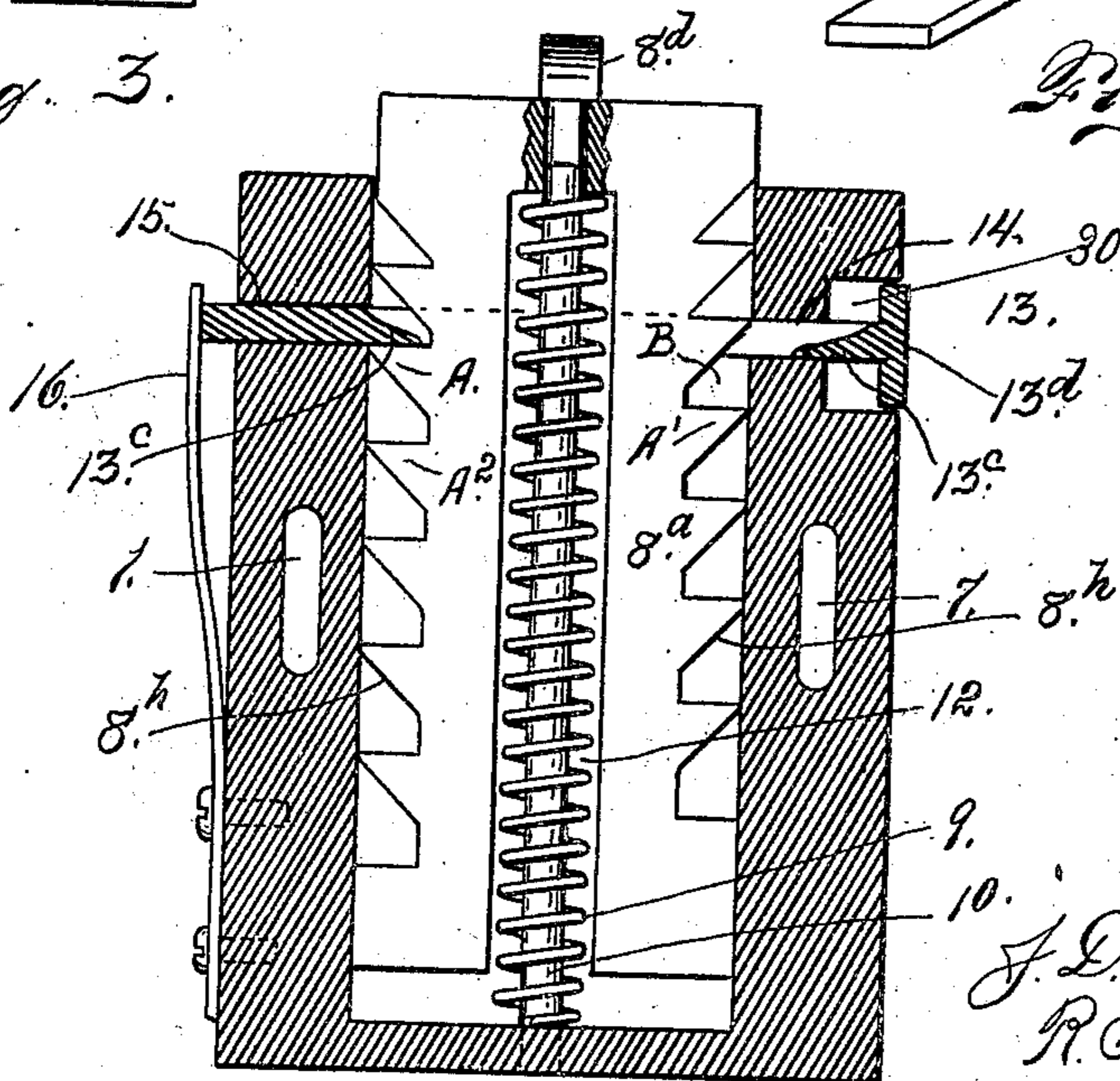


Fig. 6.

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2 SHEETS—SHEET 2.

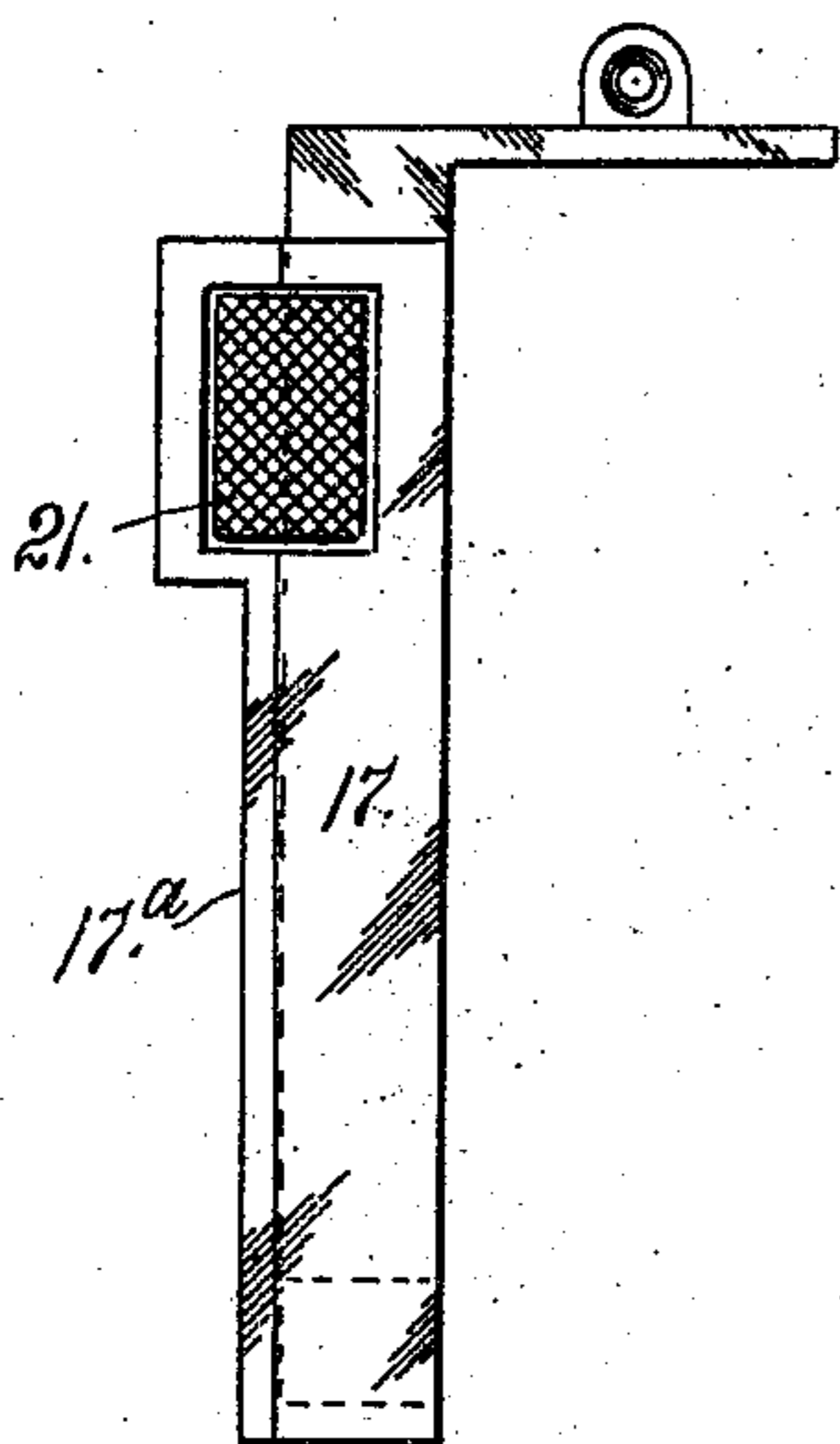


Fig. 7.

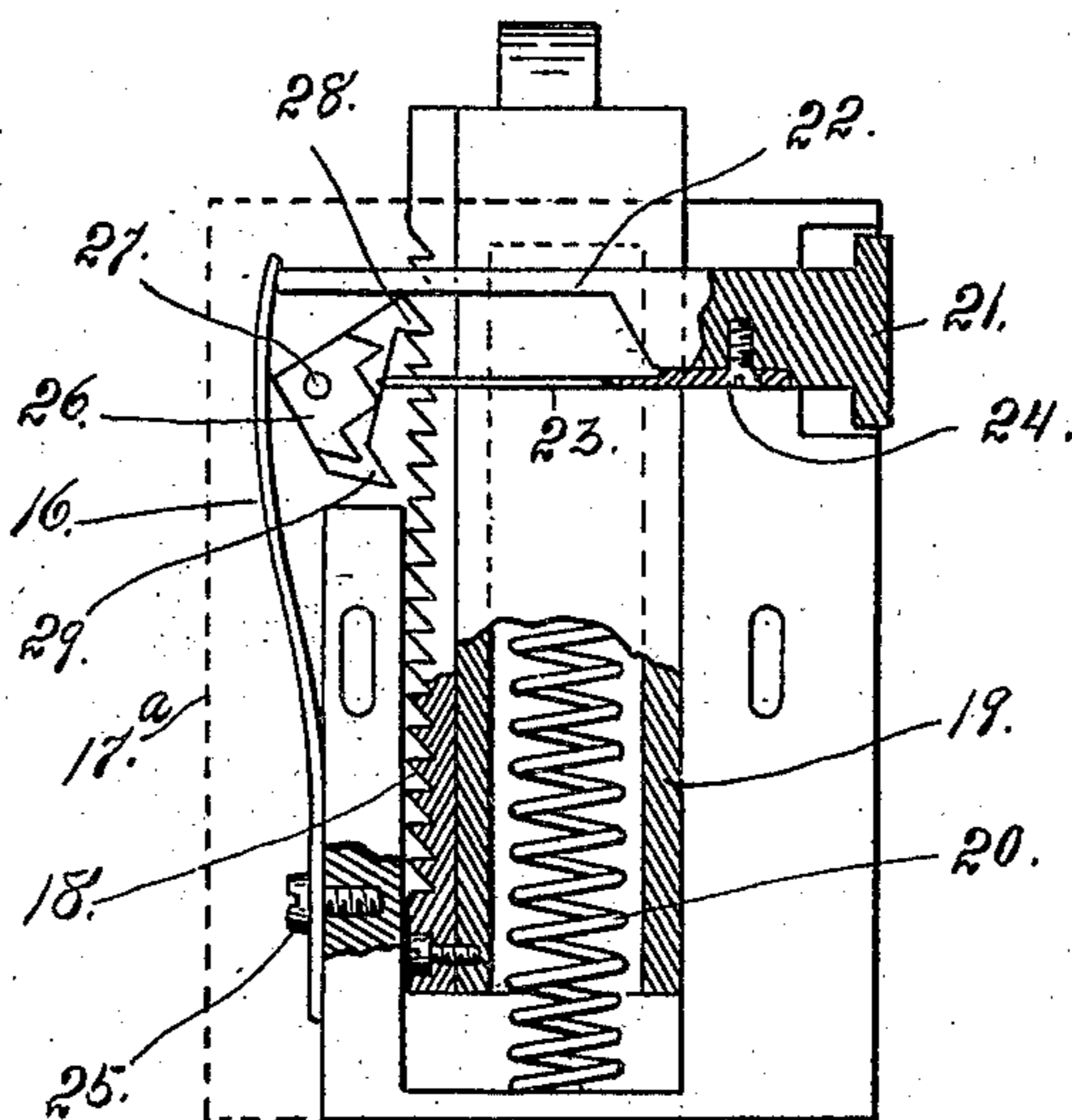


Fig. 8.

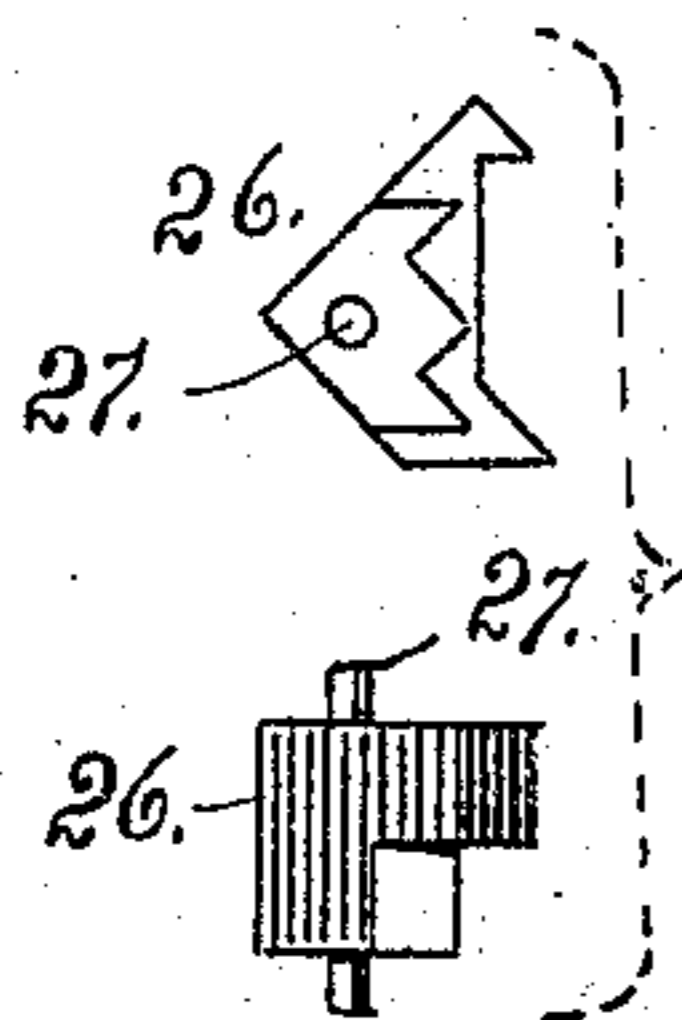


Fig. 9.

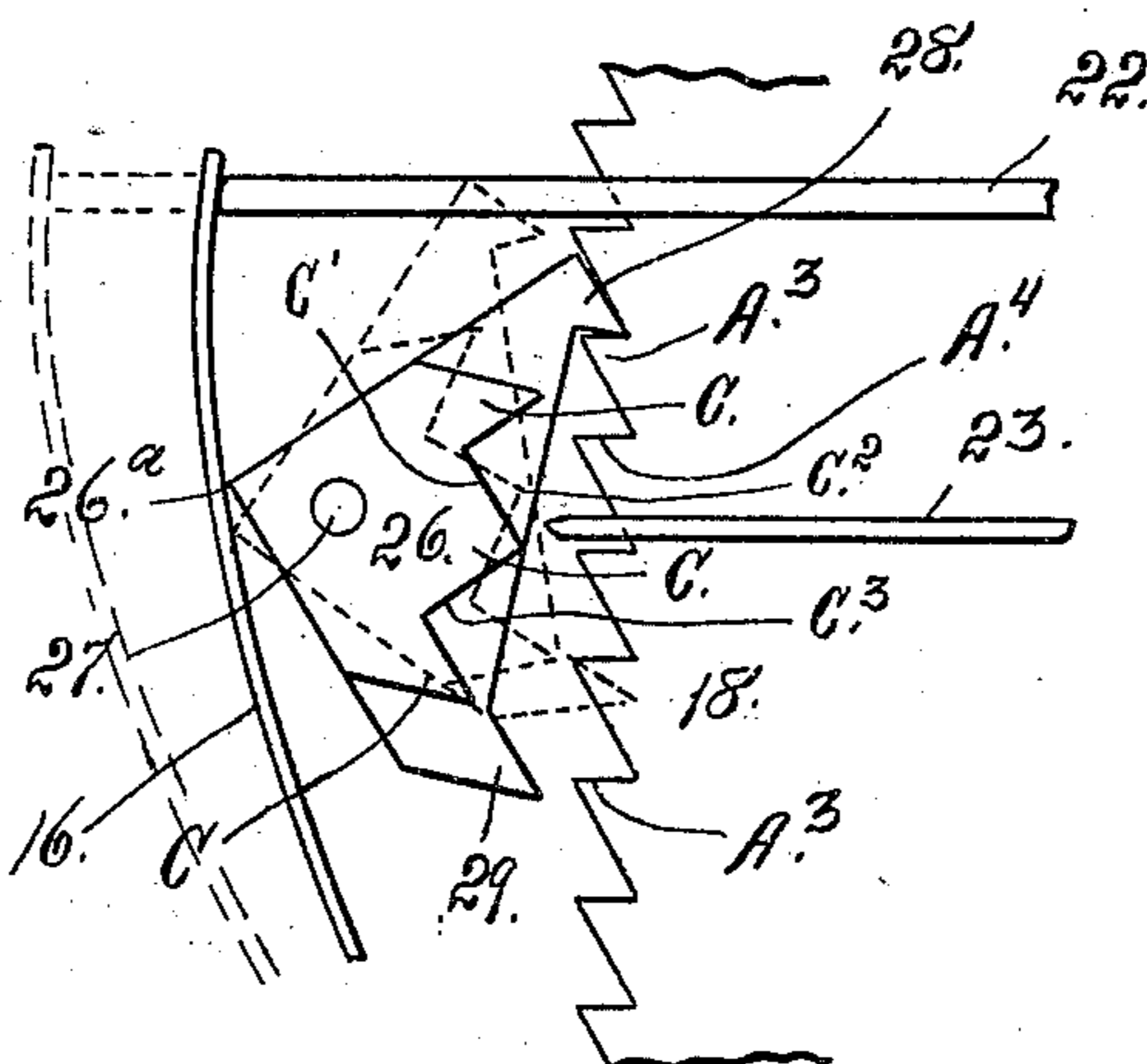


Fig. 10.

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UNITED STATES PATENT OFFICE.

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REAR SIGHT FOR FIREARMS.

No. 835,112.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed December 26, 1905. Serial No. 293,153.

To all whom it may concern:

Be it known that we, JOSEPH D. PENDER, residing in the city and county of Denver, and ROLLAND S. TROTT, residing at Golden, in the county of Jefferson, State of Colorado, citizens of the United States, have invented certain new and useful Improvements in Rear Sight for Firearms; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in sights for firearms.

This invention belongs to the class generally known as "rear sights" to distinguish it from the sight at the forward end of the barrel. The rear sight of course coöperates with the usual forward sight, the latter not being illustrated in the drawings, as nothing is claimed thereon.

The object of our improvement is to provide a device of this class which may be quickly adjusted, and therefore adapted for use under circumstances making it impracticable to expend any appreciable amount of time in the work of adjustment. For instance, if the object at which the gun is aimed is moving, as is often the case, our improved sight is adapted for instantaneous and accurate adjustment to harmonize with the range or distance of the object at the instant the trigger is pulled.

Our improved sight is spring-actuated, whereby the sight is raised a predetermined distance by the spring every time the sight is released. In our improvement the sight is provided with ratchet-teeth, and the controlling device includes a reciprocating part occupying a position at right angles to the movement of the sight under the influence of the spring. Assuming that the sight has been raised, it may be restored to its normal or lowered position by simply pressing down thereon, whereby the teeth of the ratchet are made to engage the controlling device, producing a clicking sound.

Having briefly outlined our improved construction, as well as the function it is intended to perform, we will proceed to describe the

same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a sectional view of a gun equipped with our improved sight. This is a section on the line 1 1 of Fig. 2 looking in the direction of the arrow. Fig. 2 is a fragmentary side elevation of a gun equipped with our improvement. Fig. 3 is a detail view of the gun-sight mechanism viewed from the interior or from the side which is next to the receiver of the gun when the sight is applied. In this view the mechanism is shown on a larger scale than in Figs. 1 and 2. Fig. 4 is a section taken on the line 4 4, Fig. 3, looking downwardly or in the direction of the arrow. Fig. 5 is a perspective view in detail of the reciprocating device shown on a larger scale. Fig. 6 is a sectional view taken through the casing and the reciprocating device of the sight, the sight proper being shown in elevation. This view is shown on a still larger scale and is seen from a position directly opposite the view in Fig. 3. Fig. 7 is a detail view, in rear elevation, showing a modified form of construction. Fig. 8 is a side view, in detail and partly broken away, of the construction shown in Fig. 7. Fig. 9 shows two views of a pivoted pawl forming a part of the construction shown in Figs. 7 and 8. Fig. 10 is an enlarged fragmentary detail view illustrating the operation of this form of construction.

The same reference characters indicate the same parts in all the views.

Referring first to Figs. 1 to 6, inclusive, let the numeral 5 designate the receiver of a gun, as a small firearm of ordinary construction. To one side of this receiver is attached our improved sight by means of screws 6 inserted in slots 7, formed in the casing 8. The screws are threaded into the receiver, and by virtue of the slots in the casing the latter is capable of the necessary vertical adjustment to adapt the sight for use with firearms of different makes and sizes.

As shown in the drawings, the casing is closed on the side remote from the receiver, while the flat side of the receiver itself closes the casing on the inside. The casing is open at the top to allow the ratchet-bar (designated by the numeral 8^a) to protrude. This sight consists of a vertically-disposed and

vertically-movable member 8^a and a laterally or transversely projecting member 8^c, the latter member extending across the receiver at the top and being provided with an apertured lug or projection 8^d, which is in alignment with the gun sight or bead (not shown) at the forward extremity of the barrel. The part 8^a is provided with ratchet-teeth 8^h on two opposite edges, the said teeth being arranged in staggered relation. This feature is best illustrated in Fig. 6. The member 8^a, which may be termed the "ratchet-bar," is centrally recessed to receive an actuating-spring 9, which surrounds the pin 10, secured to the casing at its lower extremity. The recess 12 of the bar is of sufficient size to allow the spring 9 freedom of movement, whereby it is adapted to lift the bar 8^a as soon as the latter is released by the reciprocating locking or controlling device 13. This controlling device consists of a bar horizontally disposed or disposed at right angles to the movement of the ratchet-bar 8^a. This bar is cut away or recessed on one side, as shown at 13^a, to make room for the ratchet-bar. It is also provided with oppositely-disposed teeth or beveled parts 13^c, adapted to engage the ratchet-teeth of the bar 8^a, formed on opposite sides of the latter, as aforesaid. The rear extremity of this reciprocating controller is provided with a head 13^d, adapted to be conveniently pressed by the user of the gun, using the thumb of the same hand used to pull the trigger. The outer surface of this button or push-head of the controlling device is preferably milled or roughened, as shown in Fig. 1, to prevent the thumb from slipping therefrom. The forward and rear edges of the casing are respectively provided with openings 14 and 15, whereby the toothed or beveled portions 13^c of the reciprocating device are given access to the ratchet-teeth of the bar 8^a during the reciprocating movement of the latter. The rear extremity of the reciprocating device 13 bears against a leaf-spring 16 under such tension as to normally hold the device 13 at its rearward limit of movement, or that illustrated in Fig. 6 of the drawings. Now if it is desired to elevate the sight the user of the gun simply presses on the head of the device 13, whereby the latter is given a rearward movement against the spring 16. Assuming that the device 13 is in the position shown in Fig. 6, as this device is pushed rearwardly the rear tooth 13^c will disengage the ratchet-tooth A just as the forward tooth 13^c enters the recess B above the tooth A' on the opposite side of the ratchet. The bar 8^a will thus be released and allowed to move upwardly until the rear tooth 13^c of the controlling device engages the upper face of the tooth A'. This will stop the upward movement of the ratchet-bar until the operator ceases to press upon the reciprocating device, in which event

the spring 16 will throw the device 13 rearwardly, whereby the tooth A' of the ratchet-bar is released, in which event the bar 8^a will move upwardly until the rear tooth of the reciprocating device engages the upper surface of the ratchet-tooth A², thus allowing the sight to move upwardly the length of one ratchet-tooth during each operation of the controlling device 13.

From this description it will be understood that the vertical adjustment of the sight may be very quickly and easily obtained by the user of the gun, whereby it becomes practicable to accurately arrange the sight for all ranges or distances, thus making the same exceedingly valuable where a rapid adjustment is necessary, as where the distance of the object is constantly varying, as when an animal at which the gun is aimed is on the run.

After the sight has been raised to the desired limit and has answered its purpose it may be returned to its normal or lowered position, whereby the part 8^c is made to engage the top of the receiver by downward pressure on its upper extremity, which causes the bar 8^a to slip past the teeth of the reciprocating device in a manner well understood.

In the form of construction shown in Figs. 7 to 10, inclusive, the body of the casing may be designated by the reference character 17. This casing is open on the inside adjacent the outer wall of the receiver. The outer part of the casing is closed by a plate 17^a of a size indicated by dotted lines in Fig. 8, whereby the leaf-spring 16, as well as the other mechanism, is entirely inclosed. In this case the plate 18, provided with the ratchet-teeth, is applied to the front side of the vertically-movable sight-bar 19. This bar is recessed vertically to receive an actuating coil-spring 20, whose lower extremity engages the bottom of the casing, while the upper extremity engages the top of the longitudinal recess, whereby as the sight-bar is released the tension of the spring carries it upwardly. In this case we employ a reciprocating controller 21, having forwardly-projecting upper and lower arms or fingers 22 and 23, respectively. As shown in the drawings, the part 23 is secured to the body of the reciprocating device by a screw 24. The arm 22 engages the upper portion of the leaf-spring 16, whose lower extremity is secured to the casing by a screw 25. The spring 16 also normally engages one corner of a pawl 26, pivoted to the casing, as shown at 27, and having upper and lower teeth 28 and 29, adapted to alternately engage the teeth of the ratchet-plate 18. In this form of construction the pivoted pawl 26 is so arranged with reference to the spring 16 that the latter locks the pawl in either of two positions of adjustment, one being the position shown in full lines and the other in dotted lines in Fig. 10. This pawl 26 is provided

with a number of teeth C, cut therein and lying in a different plane from the ratchet-engaging teeth 28 and 29. One of these teeth C is always in front of the arm or finger 23 of the reciprocating device. When the pawl occupies the position shown in full lines in Fig. 10, the actuating-finger 23 engages the upper inclined wall C' of the tooth C, whereby the forward thrust of the finger 23 serves to rock the pawl or throw it to the dotted-line position, whereby the apex C² of the tooth C is above the point 23 of the finger. When in this dotted-line position, the spring 16 acts on the pawl to hold it in the said position. The full forward position of the finger 22 and the spring 16 is indicated by dotted lines in Fig. 10 at the extreme left thereof. The rearward movement of the spring before it engages the pawl in the dotted-line position is sufficient to return the reciprocating device to its rearward limit of movement ready for the next forward thrust. During the movement of the pawl from the full-line to the dotted-line position in Fig. 10 the sight-bar 19 moves upwardly half the length of a ratchet-tooth and is locked in that position by the lower tooth 29 of the pawl. The next forward movement of the reciprocating device 21 will cause the finger 23 to engage the lower wall C³ of the middle tooth C and throw the pawl from the dotted-line position to the full-line position, during which time the sight-bar will move upwardly another half-tooth, the spring will return the reciprocating device to its normal position and engage the pawl and hold it in the full-line position until the next forward thrust. It will thus be seen that two reciprocations of the device 21 are necessary in order to allow the sight-bar to move upward the length of one ratchet-tooth. This construction and arrangement gives a very close and accurate adjustment of the sight.

From the foregoing description the use and operation of our improved device will be readily understood, and therefore need not be further described in detail.

Attention is called to the fact that in the form of construction shown in Figs. 1 to 6 of the drawings the distance between the teeth of the ratchet-bar increases as the teeth extend downwardly. The object of this is to cause the vertical adjustment of the sight to harmonize with the accelerated downward movement of the ball or projectile as it leaves the muzzle of the gun. It is well known that the speed of a falling body increases in a regular ratio. Hence the necessity for a greater upward movement of the sight for each reciprocating movement of the controlling device during the upward progress of the sight.

Attention is called to the fact that the head of the reciprocating device when actuated is concealed within a recess 30, thus

making it impossible to accidentally actuate the said device. This is quite an important feature, since if the head protruded from the casing far enough to permit it to be actuated without design the sight would be capable of accidental change of position, and this might not be noticed by the user of the gun and might, therefore, result in great inconvenience and annoyance. When the reciprocating device is at its rearward limit of movement, its head only protrudes slightly from the recess 30, thus making it impossible of accidental movement to a sufficient degree to release the ratchet-bar.

Having thus described our invention, what we claim is—

1. A rear sight for firearms comprising a casing, a vertically-movable spring-raised sight located in the casing, and a spring-retained locking device slidable in the casing at right angles to the movement of the sight, to permit a predetermined upward movement of the sight under the influence of its spring.

2. A sight for firearms comprising a casing adapted to be attached to one side of the receiver, a vertically-movable spring-raised sight having a bar located in the casing and permitted to protrude at the top of the latter, and sight-locking means including a device slidable in the casing at right angles to the movement of the sight, the locking means being connected to release the bar and allow it to move upwardly a predetermined distance, for each movement of the slidable device.

3. A sight for firearms comprising a casing, a ratchet-bar located in the casing, and means mounted in the casing for locking the bar against movement, said means including a device mounted to slide in the casing and connected to release the bar and permit a predetermined movement for each reciprocation of the slidable device.

4. A gun-sight comprising a casing, a ratchet-bar vertically movable in the casing, a spring-retained sliding device connected to control the movement of the ratchet-bar, the latter being centrally recessed, and a coil-spring located in the recess and having a normal tendency to lift the ratchet-bar.

5. A gun-sight comprising a casing, a ratchet-bar reciprocable therein, a pivoted pawl engaging the ratchet-face of the bar, and a spring-retained device for actuating the pawl to release the bar, said device being mounted to slide at right angles to the ratchet-bar.

6. A gun-sight comprising a support, a ratchet-bar vertically movable in the support, a spring acting on the bar to lift the same, a locking-pawl mounted adjacent the ratchet-face of the casing and having upper and lower teeth, one of these teeth being normally in engagement with the tooth of the ratchet, and a device mounted to slide at right angles to

the ratchet-bar for rocking the pawl to cause one tooth to release the ratchet-bar and another tooth to engage the ratchet-bar, the teeth of the ratchet being so arranged with reference to the teeth of the pawl, that the bar is allowed to move upwardly a predetermined distance for each operation of the pawl.

7. A gun-sight comprising a casing adapted to be attached to the receiver of a gun and vertically adjustable thereon, a spring-lifted ratchet-bar located in the casing and protruding from the top thereof, a pawl pivoted to the casing adjacent its ratchet-face, a leaf-spring normally engaging the pawl and holding it in engagement with the ratchet-face of the bar, and a reciprocating device provided with two fingers, one adapted to engage the leaf-spring and the other adapted to engage the pawl whereby as the reciprocating device is pressed, the leaf-spring is actuated to release the pawl, and the pawl actuated to release the ratchet-bar and allow a limited upward movement before reengaging the same.

8. A gun-sight comprising a casing, a ratchet-bar and a locking device to release the bar and permit a predetermined movement, the locking device being mounted to slide at right angles to the ratchet-bar, the

ratchet-teeth being so arranged that the upward movement of the bar increases with each successive movement of the controlling device.

9. A rear sight for firearms comprising a casing, a vertically-movable sight located therein, a spring-retained locking device reciprocable in the casing to release the sight and permit a predetermined upward movement under the influence of its spring, for each reciprocation, the casing being provided with a recess in which the rear extremity of the reciprocating device is concealed when operated, for the purpose set forth.

10. A sight for firearms comprising a suitable support, a vertically-movable spring-raised sight located in the support, and a spring-retained locking device slidable in the support to permit a predetermined movement of the sight under the influence of its spring, for each movement of the locking device.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH D. PENDER.
ROLLAND S. TROTT.

Witnesses:

DENA NELSON,
A. J. O'BRIEN.