

No. 620,441.

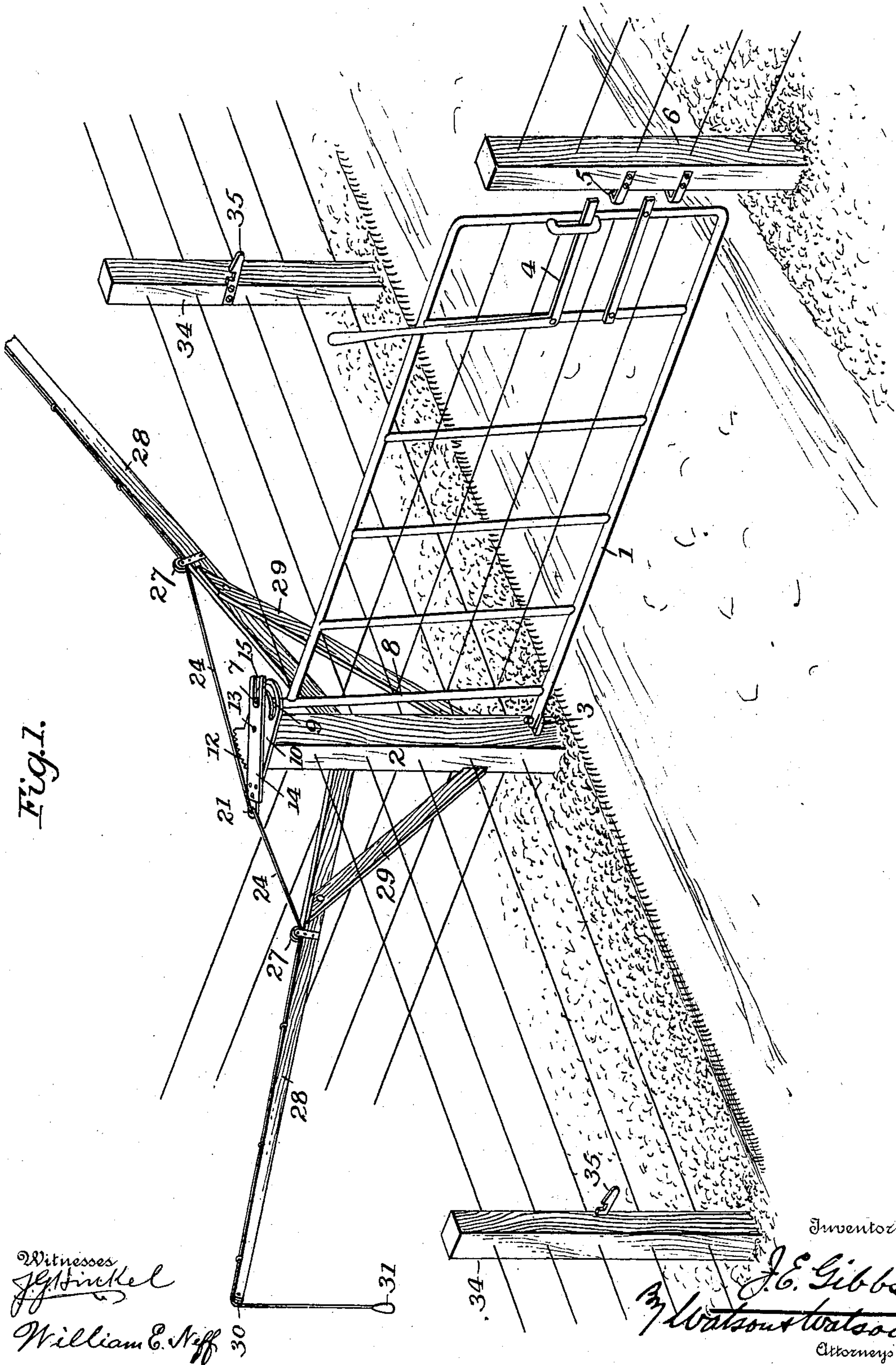
Patented Feb. 28, 1899.

J. E. GIBBS.
AUTOMATIC GATE.

(Application filed Jan. 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet. 2.

Fig. 2.

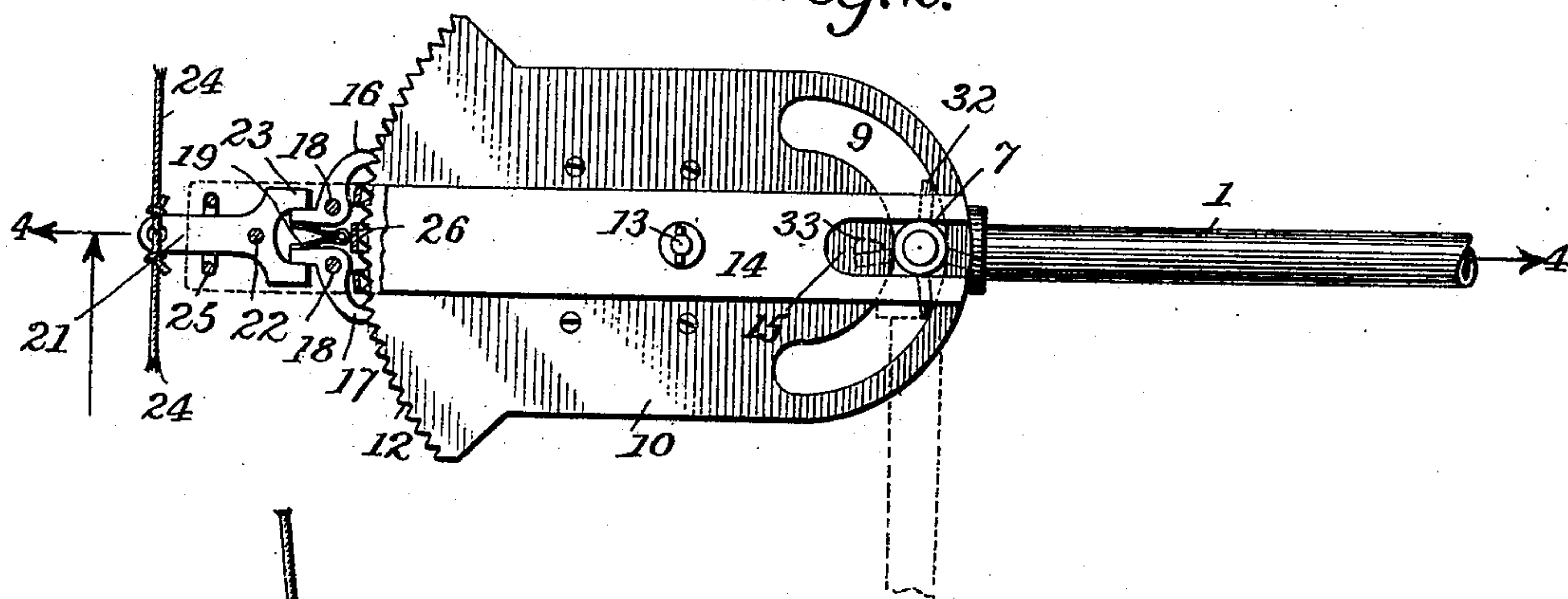


Fig. 3.

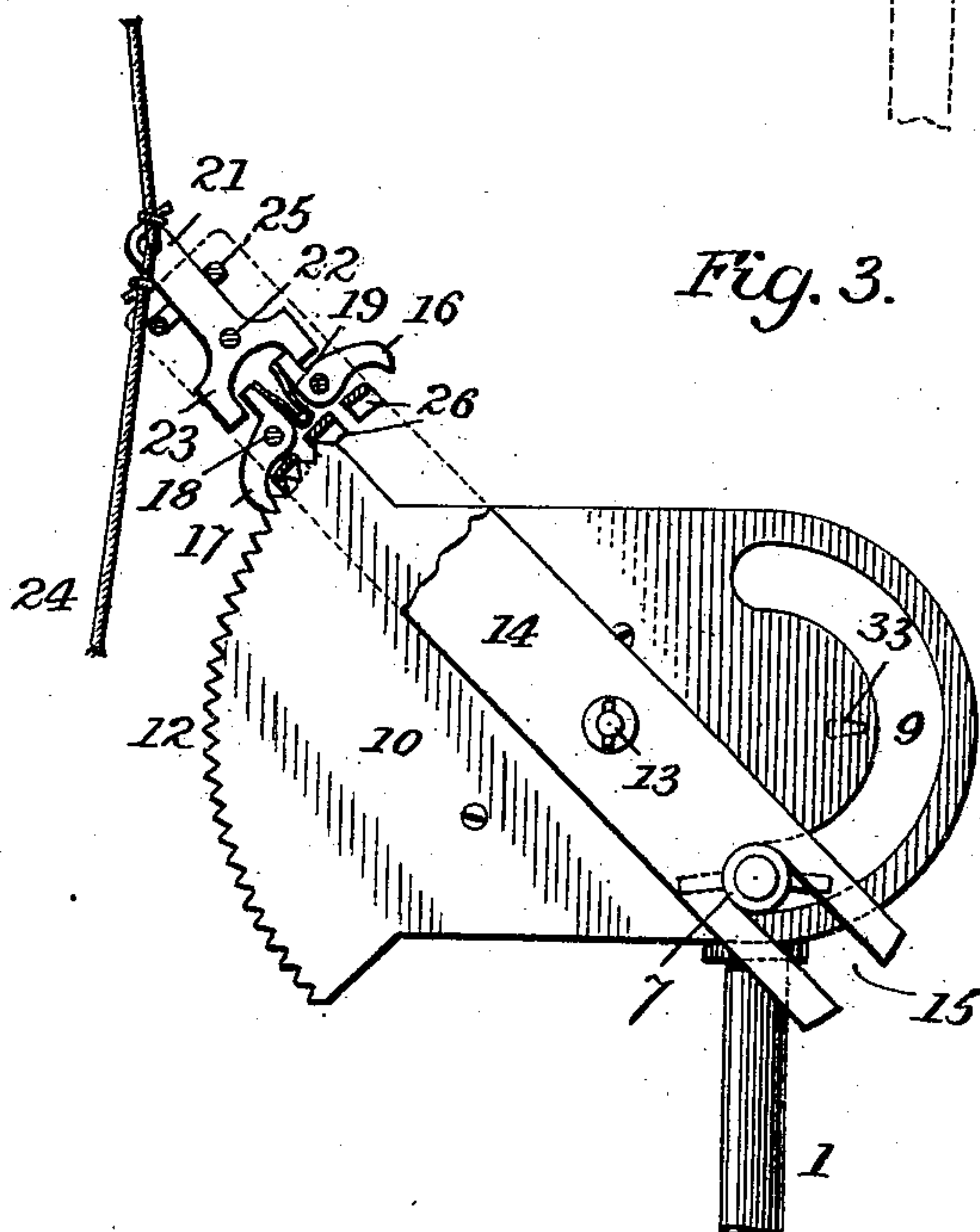
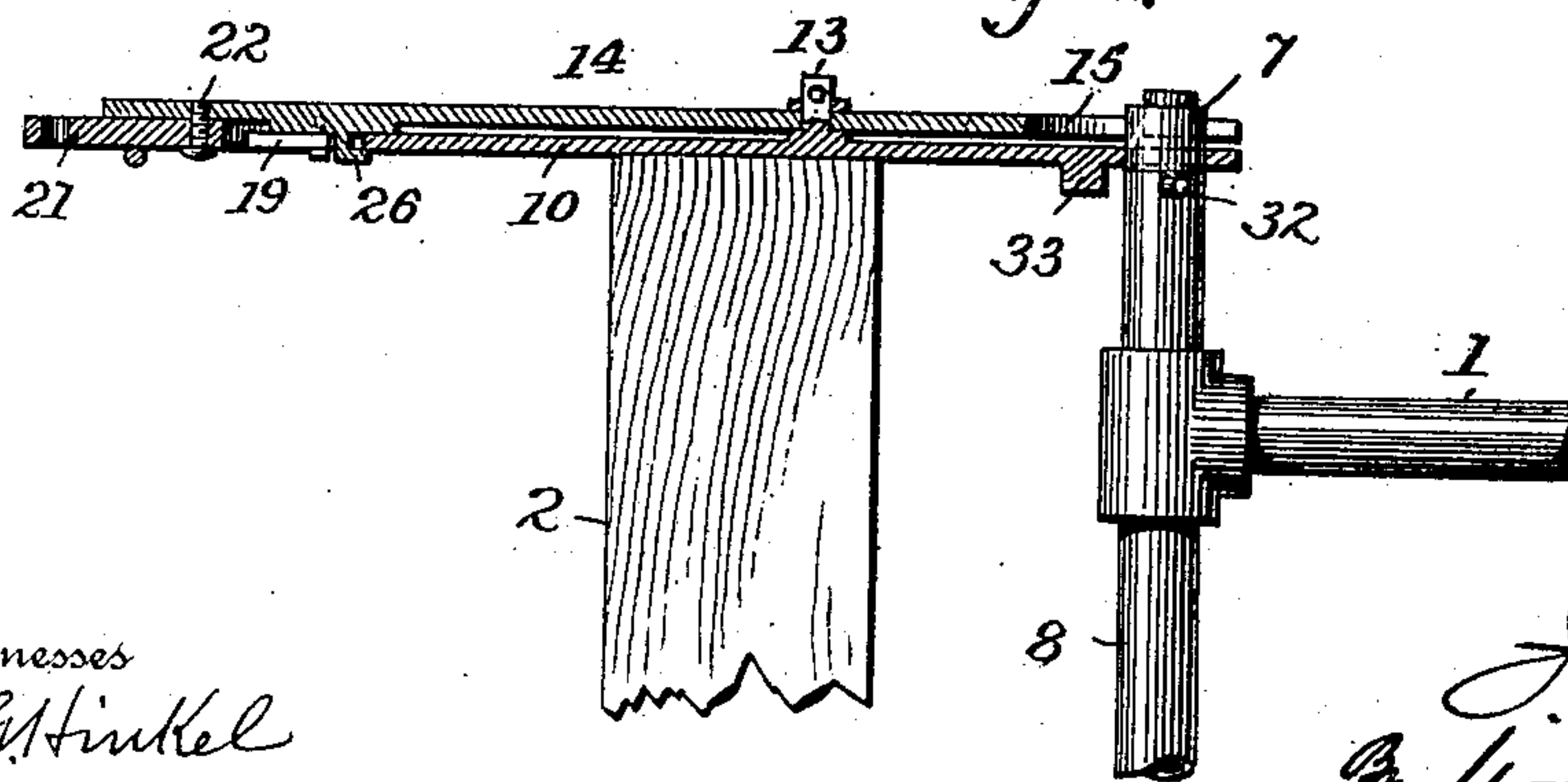


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES E. GIBBS, OF BRIDGEWATER, VIRGINIA.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 620,441, dated February 28, 1899.

Application filed January 10, 1899. Serial No. 701,748. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. GIBBS, a citizen of the United States, residing at Bridgewater, in the county of Rockingham and State of Virginia, have invented certain new and useful Improvements in Automatic Gates, of which the following is a specification.

The object of my invention is to provide a gate which may be readily opened by persons in vehicles or on horseback without dismounting.

In the particular class of gates to which my invention belongs the gate is opened by a movement which carries the upper end of the rear post of the gate backward and in the direction in which the gate is to swing, thereby raising the front end of the gate to unlatch it and causing it to swing until it is wide open.

One of the special objects of the present invention is to provide a gate of this class in which the operating-lever will remain in any position in which it may be placed by the operator and locked against the influence of the gate which tends to return it to central position.

Another object is to provide a stop device which will prevent the lever from being thrown past the central position when the gate is open and the lever is moved to close it.

I accomplish these objects by devices which I shall now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved gate-operating devices applied to a gate. Fig. 2 is a plan view of the operating devices, showing the gate closed in full lines and open in dotted lines, the lever being partly broken away to show the locking-pawls. Fig. 3 is a similar view showing the gate open, and Fig. 4 is a vertical section on the line 4 4 of Fig. 2.

Referring to the drawings, 1 indicates the gate, which may be of any ordinary construction and which is connected to the post 2 by means of a suitable hinge 3, connected to the lower part of the gate-frame. The front of the gate is provided with a suitable latch 4, which coöperates with a keeper 5 upon a post 6. The upper end of the rear standard 8 of the gate enters a curved or circular slot 9 in a plate 10, which is secured to the top of the

post 2. The standard 8 may, if desired, be provided with a friction-roller 7 to reduce the friction between the standard and the slot. The rear end of the plate 10 is provided with a circular rack 12 for a purpose to be presently described.

Upon the upper side of the plate 10 is a pivot 13, upon which is mounted an operating-lever 14. A slot 15 in the forward end of this lever embraces the friction-roller or the upper end of the standard 8. Beneath the rear end of the lever are a pair of pawls 16 17, mounted on pivots 18 and normally pressed into engagement with the rack 12 by a suitable spring 19. The pawls have tailpieces 20, which are engaged by a pawl-lever 21, pivoted to the operating-lever at 22 and having two arms 23, which coöperate with the tailpieces of the pawls to raise them alternately as the pawl-lever is thrown in one direction or the other. To the outer end of the pawl-lever are connected the operating cords or wires 24. The movement of the pawl-lever is limited by stop pins or projections 25 upon the under side of the operating-lever 14. The operating-lever is preferably provided with a guide 26, which extends around the rack 12 and engages the under side of the plate 10. The operating cords or ropes 24 pass under pulleys 27 upon arms 28, which are attached to the post 2 and additionally supported by braces 29. The cords are carried along the arms 28 and pass over pulleys 30 at the ends of the arms to suitable handles 31, which hang at the ends of the cords in convenient position to be grasped by a person desiring to operate the gate. The cords 24 extend in both directions from the gate-post, as shown.

Upon the standard 8 of the gate are two arms 32, which coöperate with a stop projection 33 upon the under side of the plate 10, adjacent to the standard, for the purpose of limiting the return movement of the operating-lever when it is desired to close the gate, as will be more fully set forth in describing the operation.

At suitable distances from the post 2 are posts 34, carrying keepers 35, which are engaged by the latch 4 when the gate is opened wide in either direction.

The operation of my invention is as follows: When the gate is closed and the parts in their

normal positions, the operating-lever 14 is in central position and in line with the gate, as shown in Fig. 2, and the pawls 16 17 both engage the rack 12. When it is desired to open the gate in the direction indicated in Fig. 3, for instance, the cord 24 is pulled in the opposite direction—that is, the gate opens away from and not toward the person operating it. The first movement of the cord 24 throws the pawl-operating lever 21 against one of the stops 25 and simultaneously throws the pawl 16 out of engagement with the rack 12, at the same time permitting the pawl 17 to remain in engagement. The further movement of the cord 24 carries the operating-lever 14 around until the end of the standard 8 of the gate is carried into the end of the slot 9, as shown in Fig. 3. When the cord is released, the spring 19 returns the pawl 16 and the pawl-lever to their normal positions, the pawl 17 remaining in engagement with the rack and holding the lever 14 locked in position. The foregoing movement causes the gate to swing wide open until the latch engages the keeper 35.

In gates of this class as heretofore constructed a single pawl has been used to lock the operating-lever to the plate 10, and upon releasing the cord the operating-lever is frequently moved backward by the weight of the gate a considerable distance before the pawl engages the plate. By using two pawls and arranging them so that when one is thrown out of engagement with the plate 10 the other remains in engagement I have provided an arrangement which holds the operating-lever in any position in which it may be when the cord is released. A further difficulty with this class of gates has been that when the operating-lever was pulled to central position to close the gate no stop was provided to prevent it going past central position and when hastily pulled it was often moved past the central position and the gate thus caused to swing in the opposite direction. When my gate is wide open, as shown in Fig. 3, and the cord is pulled to close it, the standard 8 is carried to the middle position (shown in Fig. 2) quickly and before the gate begins to swing shut. The operating-lever is thus stopped in the middle position by one of the arms 32 on the standard 8 coming in contact with the fixed stop 33, as shown in dotted lines in Fig. 2. The gate then swings shut and the arms 32 assume the position shown in full lines in Fig. 2, leaving the standard free to be moved in either direction. It will thus be seen that it is impossible to throw the lever past the middle position when the gate is open. My improvements are important for the reason that they insure perfect working of the gate no matter how rapidly and forcibly the handle is pulled to close or open it. For either closing or opening the handle may be pulled

forcibly and released quickly, and the parts are certain to assume the correct positions without any danger of being thrown too far or sliding backward when released.

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

1. The combination with a gate and post, and a lower hinge connecting the gate to the post, of a plate connected to the upper end of the post and provided with a curved slot in its forward end, and a grooved rack on its rear end, a part projecting from the gate through said slot, an operating-lever pivoted on said plate and engaging said part projecting through the slot, a pair of pawls carried by said lever and adapted to interlock with the rack, a pawl-lever arranged to release said pawls alternately from the rack when moved in opposite directions, said pawl-lever being pivoted to the operating-lever, and means for operating said pawl-lever to open and close the gate, substantially as described.

2. The combination with the gate, the gate-post, and the hinge connecting the lower part of the gate with the post, of the plate connected with the upper end of the post and provided with a curved slot, an operating-lever pivoted to said plate and having a slotted portion extending across said curved slot, a standard extending from the gate through the slots in said plate and lever, a fixed stop on said plate, arms on said standard cooperating with said stop to limit the movement of said lever in closing the gate, and means for operating the lever to open and close the gate, substantially as described.

3. The combination with the gate and post and the lower hinge connecting the gate with the post, of the plate connected to the upper end of the post and provided with a curved slot in its forward end, a stop adjacent to said slot, and a curved rack on its rear end, an operating-lever pivoted to said plate and provided with a slotted portion extending across the curved slot, a standard extending from the gate through the slots in said plate and lever, and provided with arms adapted to cooperate with the fixed stop on the plate, a pair of pawls pivoted to said operating-lever and cooperating with said curved rack, a pawl-lever pivoted to said operating-lever and constructed to release said pawls alternately from the rack when moved in opposite directions, stops for said pawl-lever, and operating-cords connected to the rear end of said pawl-lever, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. GIBBS.

Witnesses:

S. A. TERRY,
JOSEPH PATCH.