(No Model.) 2 Sheets—Sheet 1.

J. SIMPSON.

GATE.

No. 564,113. Patented July 14, 1896.

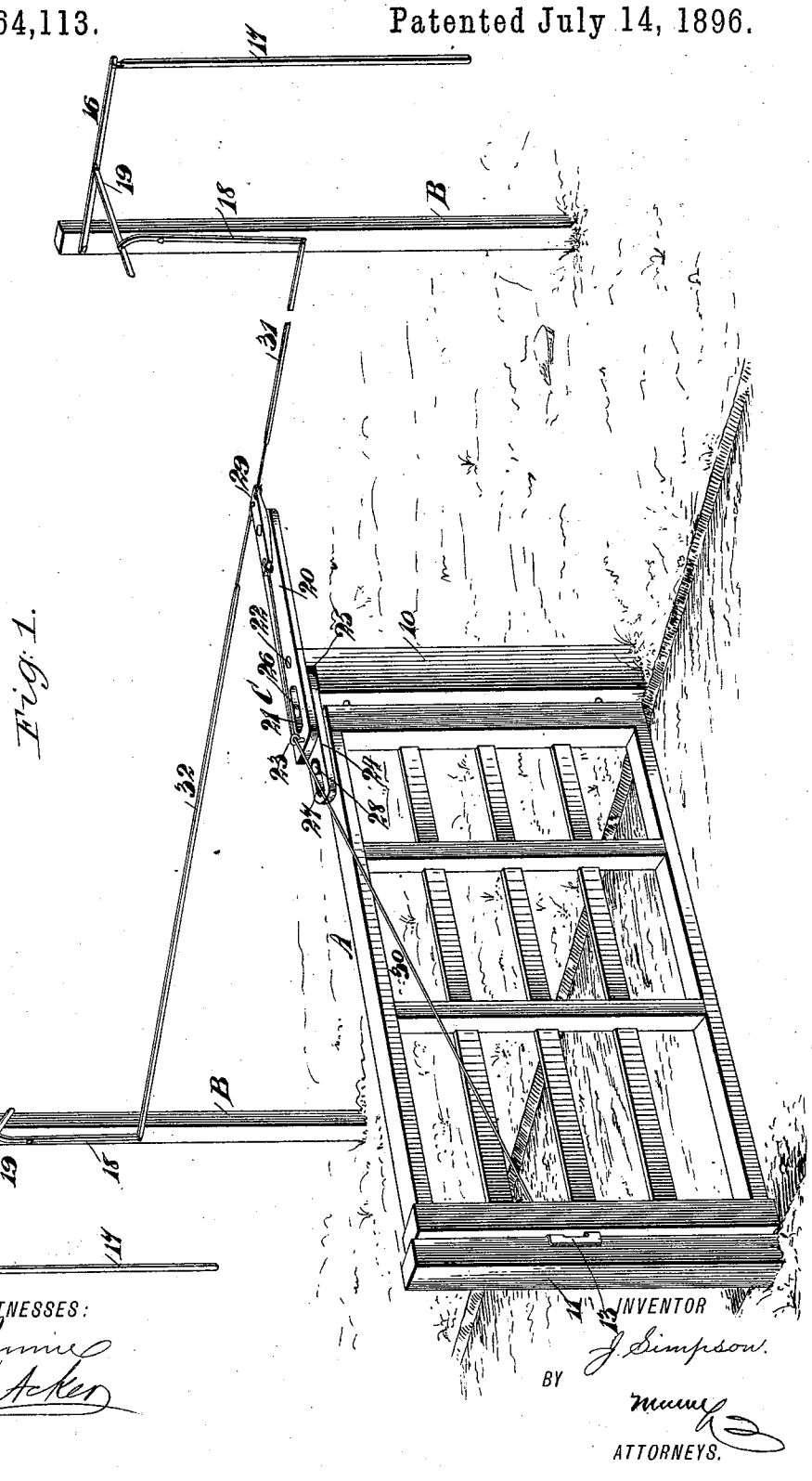

Fig. 1.

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J. Rodd Acker

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(No Model.) 2 Sheets—Sheet 2.

J. SIMPSON.

GATE.

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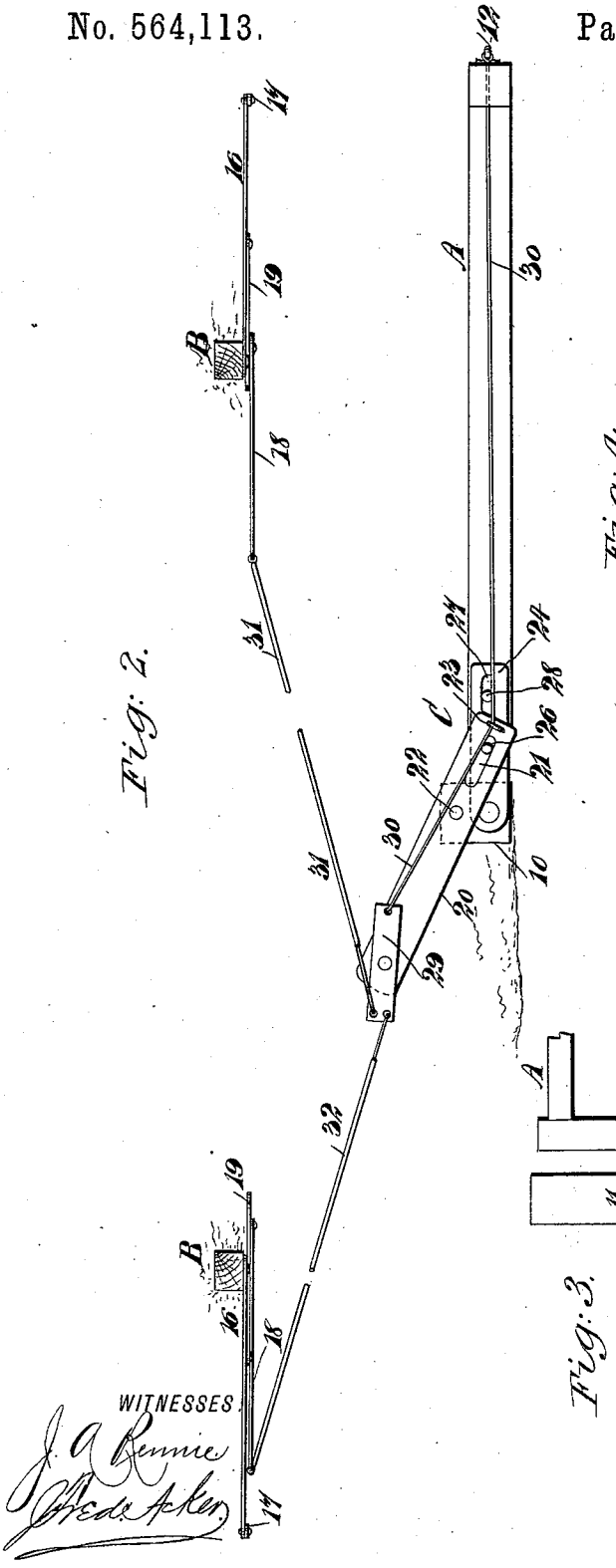

Fig. 2.

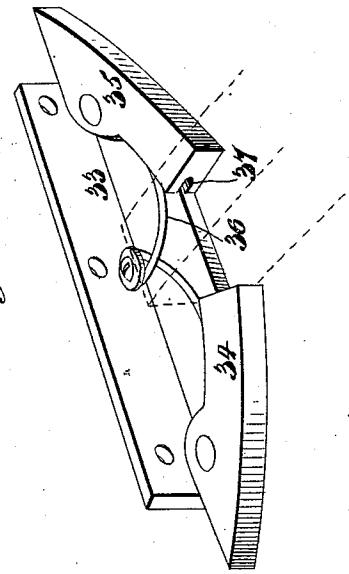

Fig. 4.

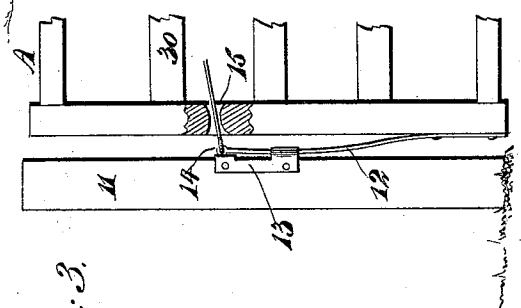

Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES SIMPSON, OF VEEDERSBURG, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM H. MALLORY AND EDWARD E. WADE, OF SAME PLACE.

GATE.

SPECIFICATION forming part of Letters Patent No. 564,113, dated July 14, 1896.

Application filed February 12, 1896. Serial No. 579,021. (No model.)

To all whom it may concern:

Be it known that I, JAMES SIMPSON, of Veedersburg, in the county of Fountain and State of Indiana, have invented a new and useful Improvement in Gates, of which the following is a full, clear, and exact description.

The especial object of the invention is to so improve upon the construction shown and described in the patent for a gate granted to me October 1, 1895, No. 547,299, that the operating mechanism of the same will be materially simplified, and to so construct the said mechanism that a complete control of the gate will be obtained from either side, and whereby at any stage in the opening of the gate toward or from the operator it will be possible to stop said gate at any point after starting to open or to close the same, and whereby, further, it will also be possible to open or close the gate from any point where it may be at rest.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the gate and its controlling or operating mechanism, the gate being illustrated as closed. Fig. 2 is a plan view of the gate and the controlling mechanism thereof, the gate being shown as open. Fig. 3 is a detail side elevation of a portion of the gate and the keeper-post, a part of the gate being in section, the said view also illustrating a form of latch which may be applied to the gate; and Fig. 4 is a perspective view of a keeper adapted to be used in connection with a lift-latch or a spring-latch or a latch of like character.

In carrying out the invention the swing-post 10 is illustrated as being at one side of the road, and the keeper-post 11 is located at the opposite side of the same.

The gate A, which has a pivotal or hinged connection with the swing-post, may be of any suitable or approved construction. The gate may be provided with any form of latch, the said latch to be located at its forward or free end, and in Fig. 3 I have illustrated one form of a latch 12, which consists of a tongue of spring metal secured to the lower portion of the front edge of the gate, the upper portion of the said tongue of metal being sprung normally outward from the gate by reason of the peculiar form given to the latch; and this latch is adapted at its upper end to enter a slot between the members of a keeper 13 secured to the keeper-post. The upper end of the latch 12 is provided with an eye 14, and an opening 15 is made in the front upright bar of the gate, opposite the upper end of the latch.

A standard B is located at each side of the swing-post a suitable distance back therefrom, and each post has pivoted to its upper portion one extremity of a lever 16, and at the opposite extremity of the said lever a handle 17 is pivotally attached, being adapted to hang vertically or pendent therefrom. A second lever 18 is fulcrumed preferably between its center and upper end upon the front face of each keeper-post, the upper ends of the levers 18 being preferably curved in direction of the gate; and a link 19 pivotally connects the upper end of each lever 18 with each horizontal upper lever 16 at any desired point between the ends of the latter levers, as is best shown in Fig. 1.

A double lever C is employed for connection with the gate, and the two levers comprising the double lever C are located one above the other. The uppermost lever 20 is fulcrumed between its center and forward end upon the top of the swing-post 10, and the major portion of this lever extends rearwardly beyond the said swing-post. The lever 20 has a longitudinal slot 21 made in its forward end in advance of its pivot 22, and preferably an eye 23 or other form of guide device is secured upon the upper face of the uppermost lever 20 at its forward extremity.

The undermost lever 24 of the double or dual lever C is likewise pivoted upon the swing-post, and to that end a recess 25 is made in the upper end of the swing-post at its forward face, and the lowermost lever 24, which is much shorter than the uppermost lever 20, is pivoted at its rear end to the said

gate-post and extends a suitable distance beyond the forward end of the uppermost lever. The undermost lever 24 is also provided with a pin 26, which extends upward into the slot 21 of the upper lever, and the said undermost lever is further provided with a longitudinal slot 27 in its forward end portion, which receives a pin 28 projected upward from the top rail of the gate A.

What may be termed a "trip-lever" 29 is fulcrumed at its center upon the upper face of the rear end portion of the uppermost lever 20 of the double lever C. When the gate is closed, the trip-lever will extend longitudinally of the uppermost member of the double lever C, and when the gate is opened the trip-lever will be at an angle to the said uppermost member of the double lever, as shown in Fig. 2. The forward end of the trip-lever is connected by a chain, cord, or cable 30 with the upper portion of the latch 12, the said chain or cable being passed through the guide 23 of the double lever C. The set of levers fulcrumed upon the standards B may be termed the "gate-controlling levers," the double lever C being the gate-operating lever.

The rear portion of the trip-lever 29 is connected at its right-hand side with the right-hand end controlling-lever 18 by means of a rod or a bar 31, or its equivalent, the bar or rod being pivoted to the lower end of the lever 18 and having a hook or a like connection with the trip-lever; and the left-hand side of the trip-lever at its rear end is in like manner connected by a bar or rod 32 with the lower end of the left-hand gate-controlling lever 18.

It will be observed that in the gate-controlling mechanism no cables or their equivalents are employed, and that pulleys and similar guides are dispensed with; but if in practice it is found desirable rope, wire, or chains may be used to connect with the gate-operating levers or attachments that may be employed for opening the gate from one side and closing it from the other side. But the connections illustrated in the drawings are those that are preferred, since when the gate is provided with the system of controlling and operating levers illustrated the gate will be under the complete control of the operator from either side, and at any stage in the opening of the same to or from the said operator, he being able to stop the gate at any point after starting to open or to close it, and he will also be able to open or close the gate from such point.

In the operation of the gate, to open the same from the right-hand side, for example, by drawing downward upon the right-hand handle 17 the gate will be opened to the right, and by pushing up the handle 17 the gate will be opened to the left. The same is true of the action of the controlling-levers at the left-hand side of the gate. Thus by the pulling downward or the pushing upward the lever 16 of the controlling set of levers the gate may be stopped at or started from any desired point. The gate being closed, the moment that the controlling-levers are operated to open the gate the trip-lever will be carried to the right or to the left, according to the controlling-levers operated, and the cable 30 will be drawn rearward, thus disengaging the latch from its keeper, while nearly simultaneously with the withdrawal of the latch the cable will compel the uppermost member of the double lever C to move in the direction in which the gate is to open, which will communicate movement to the gate through the undermost lever 24, the latter lever remaining parallel with the gate. The double lever C forms a means of operating the gate with the least possible amount of friction and with an easy steady movement.

In Fig. 4 I have illustrated a form of keeper particularly adapted for use in connection with the gate. The said keeper consists of an angle-plate 33, adapted for attachment to the keeper-post through the medium of the vertical member of the plate. Two arms 34 and 35 are pivoted upon the horizontal member of the plate, one at each end, and the front edges of these arms are curved to a greater or less extent, and the arms extend from a point near the center of the plate beyond the end near which they are located; and the inner end faces of these arms are beveled, in order that the said surfaces may be brought quite close to the vertical member of the plate, so that when the gate is swung closed the gate-latch will readily ride upon the curved surface of one of the arms. Both of the arms are held out from the plate at their inner ends through the medium of a spring 36, which has bearing against the inner faces of the inner end portions of the arms, the said faces being preferably provided with grooves 37 to receive the spring. It is therefore evident that as the gate closes the latch, while riding along the curved surface of an arm, will force that arm inward against the tension of the spring, and when said latch reaches the end of the arm it will pass off to the space between the two opposing arms, and the arm that was engaged will be forced outward by the spring, holding the latch in the aforesaid space.

While the posts B have been shown in the drawings as located inward from the roadway in connection with which the gate is used, it will be understood that the post need have no special location relative to the gate, it only being desirable to locate the post conveniently for persons using the gate.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a gate and the swing-post thereof, of a lever fulcrumed at one end on the post and provided with a slot at its opposite end, a pin extending from the upper portion of the gate through the said slot, a second lever fulcrumed upon the post

and above the first lever, the upper lever extending rearwardly beyond the post and its forward end being provided with a slot, a pin projecting from the inner end of the lower lever into the slot of the upper lever, and means for giving the upper lever lateral movement in opening and closing the gate, substantially as described.

2. The combination with a gate, the swing-post upon which the gate is mounted and the latch of the gate, of two levers each having a slot in its front end, one lever being located over the other and both levers being fulcrumed upon the gate-post, the lower lever having a pin extending into the slot of the upper lever and the lower lever being likewise provided with a slot receiving a pin from the gate in its own slot, a trip-lever fulcrumed upon the upper lever, a cable attached to one end of the trip-lever and a guide attached to the upper lever through which guide the cable passes, the cable being also attached to the latch of the gate, and means for laterally moving the trip-lever, substantially as described.

3. The combination with a swing-post, a gate mounted thereon and a latch connected with the said gate, of an upper and lower lever, the upper lever being fulcrumed upon the upper portion of the post, a portion of the upper lever extending over the gate and being provided with a slot and the remaining portion of the upper lever being extended rearwardly beyond the post and the lower lever being fulcrumed at its end upon the post and provided with a pin extending into the slot of the upper lever, the lower lever projecting beyond the inner end of the upper lever and having a slot in its outer end, a pin projecting from the gate into the slot of the lower lever, a trip-lever fulcrumed upon the upper lever, a cable connected to the trip-lever and to the latch of the gate, hand-levers, supports therefor, and connections between the hand-levers and the rear portions of the trip-lever, substantially as described.

4. The combination, with a gate, its swing-post and latch, of a lever fulcrumed upon the post, extending over the gate and provided with a slot receiving a pin from the gate, a second lever fulcrumed upon the post above the lever connected with the gate, the lower lever being provided with a pin and the upper lever with a slot to receive the pin, a guide located upon the forward end of the upper lever, a trip-lever fulcrumed upon the rear end of the upper lever, a cable attached to one end of the trip-lever, passing through the said guide and connected with the gate-latch, standards located at opposite sides of the gate, levers fulcrumed upon the said standards, arranged substantially as described, and a bar connection between the levers and the sides of the trip-lever adjacent to which the said levers are located, as and for the purpose specified.

5. The combination, with a gate, its swing-post and latch, of a lever fulcrumed upon the post, extending over the gate, a second lever fulcrumed upon the post above the lever connected with the gate, the lower lever being provided with a pin and the upper lever with a slot to receive the pin, a guide located upon the forward end of the upper lever, a trip-lever fulcrumed upon the rear end of the upper lever, a cable attached to one end of the trip-lever, passing through the said guide and connected with the gate-latch, standards located at opposite sides of the gate, a hand-lever fulcrumed upon each standard, extending outward therefrom, a second lever fulcrumed upon each standard longitudinally thereof, link connections between the two levers, and a rod connection between the vertically-located levers and the sides of the trip-lever adjacent to which they are located, substantially as described.

6. The combination with a post, of a gate hingedly mounted thereon, two levers independently fulcrumed on the post, the levers having sliding connection with each other and one lever having sliding connection with the gate, and means for operating the levers, substantially as described.

7. The combination with a post, of a gate pivotally mounted on the post and two levers independently fulcrumed on the post, the levers having sliding connection with the gate, substantially as described.

JAMES SIMPSON.

Witnesses:
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EDWARD E. WADE.