

(No Model.)

2 Sheets—Sheet 1.

J. W. POWELL.
GATE.

No. 549,819.

Patented Nov. 12, 1895.

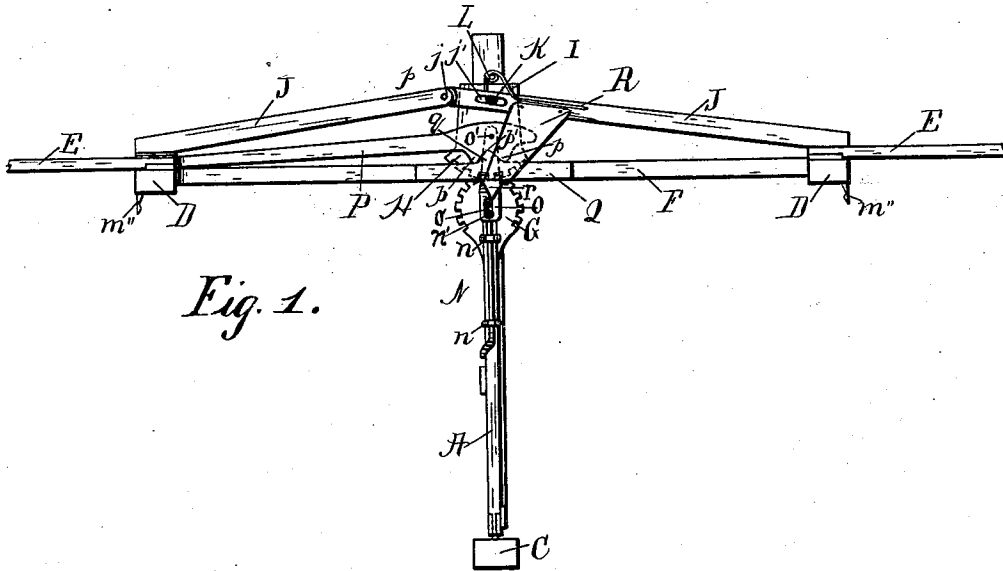


Fig. 1.

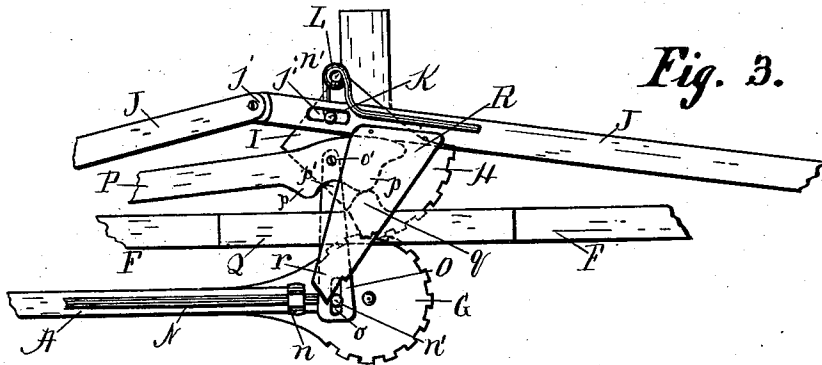


Fig. 3.

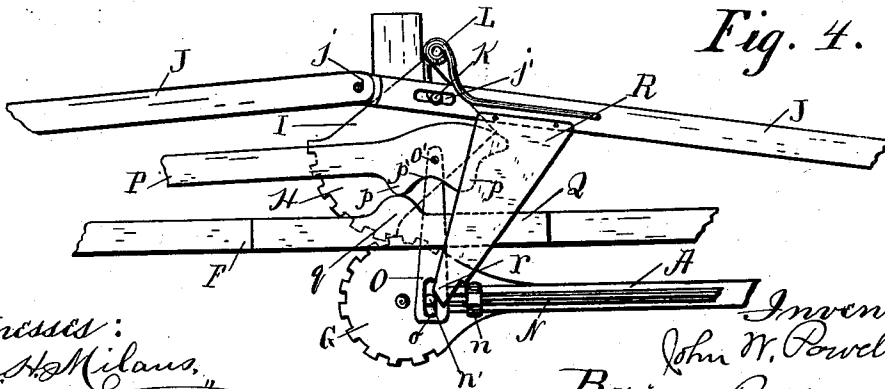


Fig. 4.

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Inventor,
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By J. S. Barker, Atty.

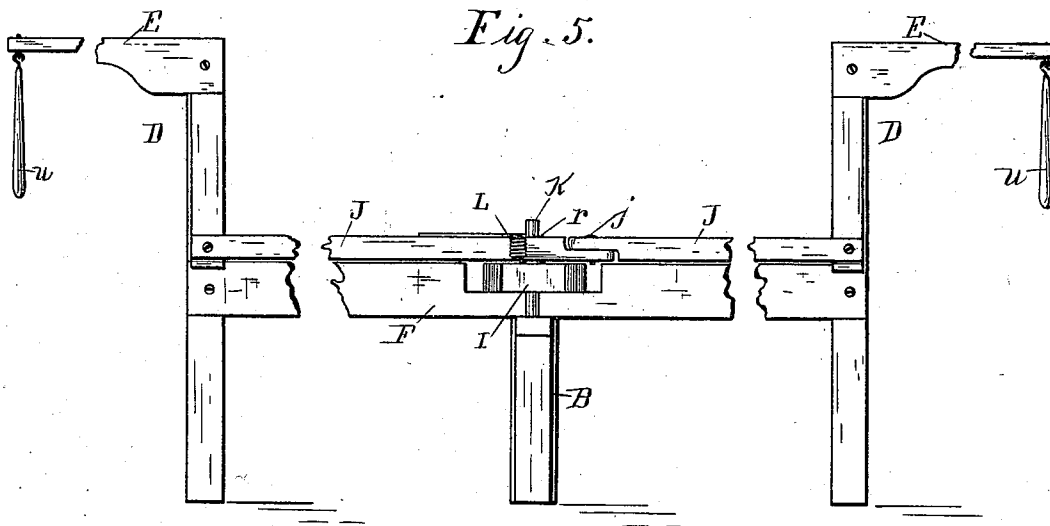
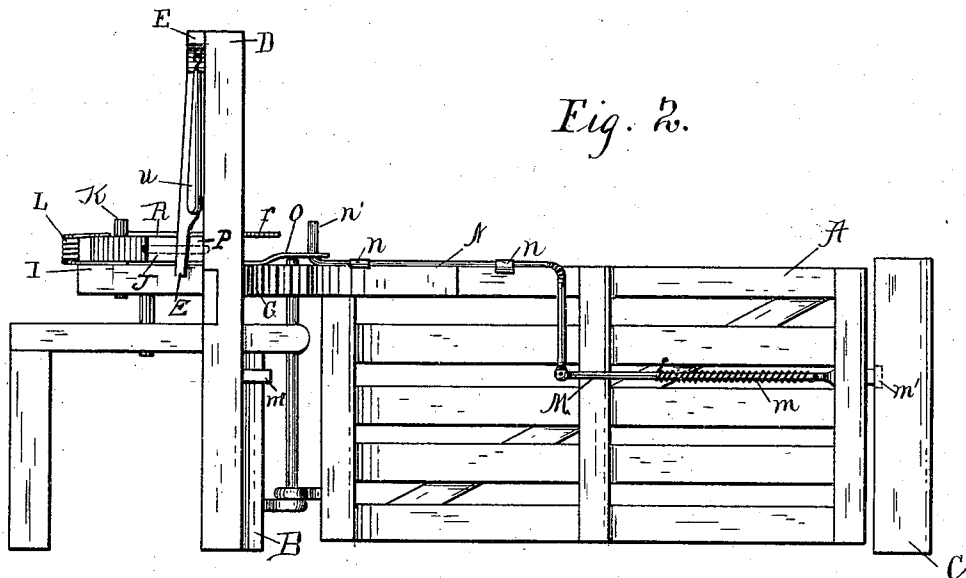
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2 Sheets—Sheet 2.

J. W. POWELL.
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No. 549,819.

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UNITED STATES PATENT OFFICE.

JOHN WILSON POWELL, OF EAU GALLIE, FLORIDA.

GATE.

SPECIFICATION forming part of Letters Patent No. 549,819, dated November 12, 1895.

Application filed May 13, 1895. Serial No. 549,153. (No model.).

To all whom it may concern:

Be it known that I, JOHN WILSON POWELL, a citizen of the United States, residing at Eau Gallie, in the county of Brevard and State of Florida, have invented certain new and useful Improvements in Gates; and I 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 of reference marked thereon, which form a part of this specification.

My invention relates to swinging gates; and it has for its object to improve the hand-operating mechanism therefor and the mechanism for operating the gate-latch.

The invention consists in improvements in the construction, arrangement, and combination of these parts of the gate, as will be pointed out.

In the accompanying drawings I have illustrated the preferred form of my invention, in which—

Figure 1 is a top plan view of a gate embodying my improvements, the gate being represented in its closed position. Fig. 2 is a side view of the gate. Figs. 3 and 4 are plan views of the gate, parts being broken away, illustrating the positions occupied by the parts when the gate is moved into its open positions in opposite directions. Fig. 5 is a rear view of the gate.

Referring to the said drawings, A designates the gate hinged to a post B and arranged to swing toward and from a post C upon the opposite side of the roadway from the post B.

D D represent the post to which the hand-pieces or operating-levers E are secured, and F designates a connecting-bar extending between the posts D D and B and serving to strengthen these posts and hold them in proper relative position.

The gate is provided with a gear-segment G, which is concentric with the hinge-rod around which the gate swings and is preferably carried by the top rail or bar of the gate. With this segment G there meshes another gear-segment H, which is preferably formed with or secured to a lever I, fulcrumed upon a

suitable support adjacent to the hinge-post B. This lever I is connected to the operating-levers E by the connecting rods or bars J J, which are preferably united at their inner ends by a pivot-joint *j*.

The lever I is mounted so that it vibrates in a horizontal plane, as thereby there is less slipping between the teeth of the intermeshing gears G and H and an easier and smoother operation of the grate is effected than by any other arrangement of the gearing.

I prefer that the connection between the bars or rods J and the lever I should be loose, for a purpose which will be described, and for this purpose I slot one of the connecting-bars, as at *j'*, and provide the lever I with a pin K, which enters the said slot, but does not fill it, so that the slotted bar has a certain amount of play or movement relative to this pin.

The operating-levers and connecting-bars J should normally occupy a position with the pin K midway of the slot *j'*, and to bring these parts to this position automatically I employ a spring L, which is connected at one end to one of the connecting-bars and at the other end to the lever I.

M designates the gate-latch, which, as is shown in the drawings, is operated by a spring *m*, which normally moves the latch into position to engage with the catch *m'* on the post C when the gate is closed or with the catches *m''* on the posts D when the gate is swung open in one direction or the other.

N represents a rod or bar connected with the latch and by which the latch is operated or moved against the action of the spring *m*. This rod or bar is preferably bent, as shown in Fig. 2, and is supported on the top bar or rail of the gate by the keepers *n*, in which it may slide. The shape and manner of mounting this latch-operating rod or bar may, however, be varied, in order to suit the construction of gate, or the style of latch which it is to operate.

The inner end of the bar or rod—that is, the end nearest to the gate-hinge—is provided with an upturned end portion *n'*, with which engages a shifting bar or plate O, the plate being provided with a slot *o*, through which the end *n'* of the rod extends. By shifting the plate O backward when the gate is in its closed position the latch is withdrawn from

engagement with the catch m' and the gate may be swung in either direction. The slot o permits a certain amount of play of the end n' of the latch-operating rod relative to the shifting plate as the gate is swung from one position to another, at the same time leaving the latch-bar free to assume its normal position under the influence of the spring m .

The shifting plate O is connected with one of the operating-levers by the connecting-bar P , to which it is pivotally connected at o' . The connecting-bar P is provided at its inner end with two cams p , which are separated by a recess p' . This inner end of the connecting-bar P engages with a cam or projection q upon a bar or plate Q , supported by the connecting-piece F .

When the parts are in their mid position—that is, when the gate is closed—the cam q occupies the space or recess p' between the two cams p of the connecting-bar. If now the connecting rod or bar P be moved in either direction, the engagement of one or the other of the cams p , with the cam or projection q , operates to throw outward or away from the gate the inner end of the bar P , carrying with it the shifting plate O , which operates to disengage the latch from the catch on the post C . This operation of the gate-latch takes place before any movement is imparted to the lever I , in order to turn the gate upon its hinges, being permitted by the slot in one of the connecting-bars J , which has been heretofore described.

It will be observed that by reason of the connection of the connecting-bars J to each other and of the connecting-bar P and one of the bars J with the operating-lever these parts move simultaneously, so that whenever the operating-lever is worked the gate is first unlatched and then swung, and it will be observed that the swinging of the gate from its closed to its open position is always away from the person pulling downward upon the operating-lever or upon the handle u thereof.

In order to operate the latch when the gate stands in its open position, whether swung in one direction or the other, I employ a plate R , which is preferably secured to one of the connecting-bars J , and is provided with a finger r , which is adapted to engage with the end n' of the latch-operating bar N .

By reference to Figs. 3 and 4 it will be observed that the finger r engages with the same side of the end n' of the latch-operating bar, whether the gate be opened in one direction or the other, that side being the one away from the gate-hinge, but that the opposite faces or edges of the finger engage with the end of the bar when the gate occupies these different positions. To state this differently, it may be said that the finger of the operating-plate R is always on that side of the upturned end of the latch-operating bar toward which the gate has been swung open. From this it follows that whenever the operating-lever toward which the gate has been

swung is depressed it operates to carry the finger of the plate R against the latch-operating rod and cause a disengagement of the latch from the catch m'' , which operation of the latch takes place by reason of the slot j' in the connecting-bar before the lever I is moved to close the gate. As soon as the gate moves away from the post D , the end of the latch-operating bar moves out of engagement with the plate R and does not engage there-with again until the gate is opened.

From this description it will be seen that whenever a person approaching the gate pulls upon one of the depending handles of the operating-lever the gate is opened, swinging away from the person, who may then pass through the gate and that having passed through the gate, a pull upon the operating-lever on that side operates to close the gate again. These operations take place whichever way the person may be traveling.

While I have described the preferred form and arrangement of the several parts of my gate, I do not wish to be limited thereby in the useful applications of my invention to the specific arrangement and construction of parts which I have shown.

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

1. The combination with a swinging gate and its latch, of the operating levers, a connection between the operating levers and the gate for swinging the latter, a shifting plate connected with the latch, a connecting bar between one of the operating levers and the said plate and a cam for moving the said connecting bar to operate the latch when the operating levers are moved to open the gate, substantially as set forth.

2. The combination of a gate, the operating levers on either side thereof, the gate latch, a connecting bar, P , connected with one of the operating levers and provided with two cams or projections, p , connections between the said bar and the gate latch, and a projection, q , with which the part of the bar, P , having the said projections engages, whereby the gate latch is operated whichever one of the operating levers is worked, substantially as set forth.

3. The combination of a swinging gate, its latch, the operating levers on either side of the gate, mechanism interposed between the operating levers and the gate whereby the latter may be swung open in either direction, a latch operating bar, N , provided with a projecting portion, n' , and a plate which engages with the said latch-operating bar when the gate is open, whether in one direction or the other, the said plate being mounted so as to be operated by the gate operating levers, substantially as set forth.

4. The combination of a swinging gate provided with a gear segment, a lever, I , provided with a gear segment which meshes with the segment on the gate, the operating levers,

E, the connecting bars between the operating levers and the said lever, I, the connection of the said bars with the lever, I, being a pin carried by the lever and passing through a slot in one of the bars, a spring which normally moves the bars into the position with the said pin about midway of the slot, the gate latch, and connections between the operating levers and the latch, whereby the latch is operated directly with the operation of the levers, E, substantially as set forth.

5. The combination of a swinging gate adapted to swing in either direction, a latch therefor, the operating levers, connections between the operating levers and the gate whereby the latter may be swung in one direction or the other by operating the levers, the latch operating bar, N, provided with an upturned end, *n'*, a shifting plate having a

slot through which projects the said end, *n'*, of the latch operating bar, a connecting bar between one of the operating levers and said shifting plate, the said bar being provided with the cams or projections, *p*, separated by a recess, a stationary projection with which the cam shaped portion of the bar, T, engages, and a plate, R connecting with the operating mechanism of the gate and provided with a finger with which the said end, *n'*, of the latch-operating bar engages when swung open in one direction or the other, substantially as set forth.

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

JOHN WILSON POWELL.

Witnesses:

WALTER B. GILBERT,
HENRY W. HODGSON.