

No. 609,035.

Patented Aug. 16, 1898.

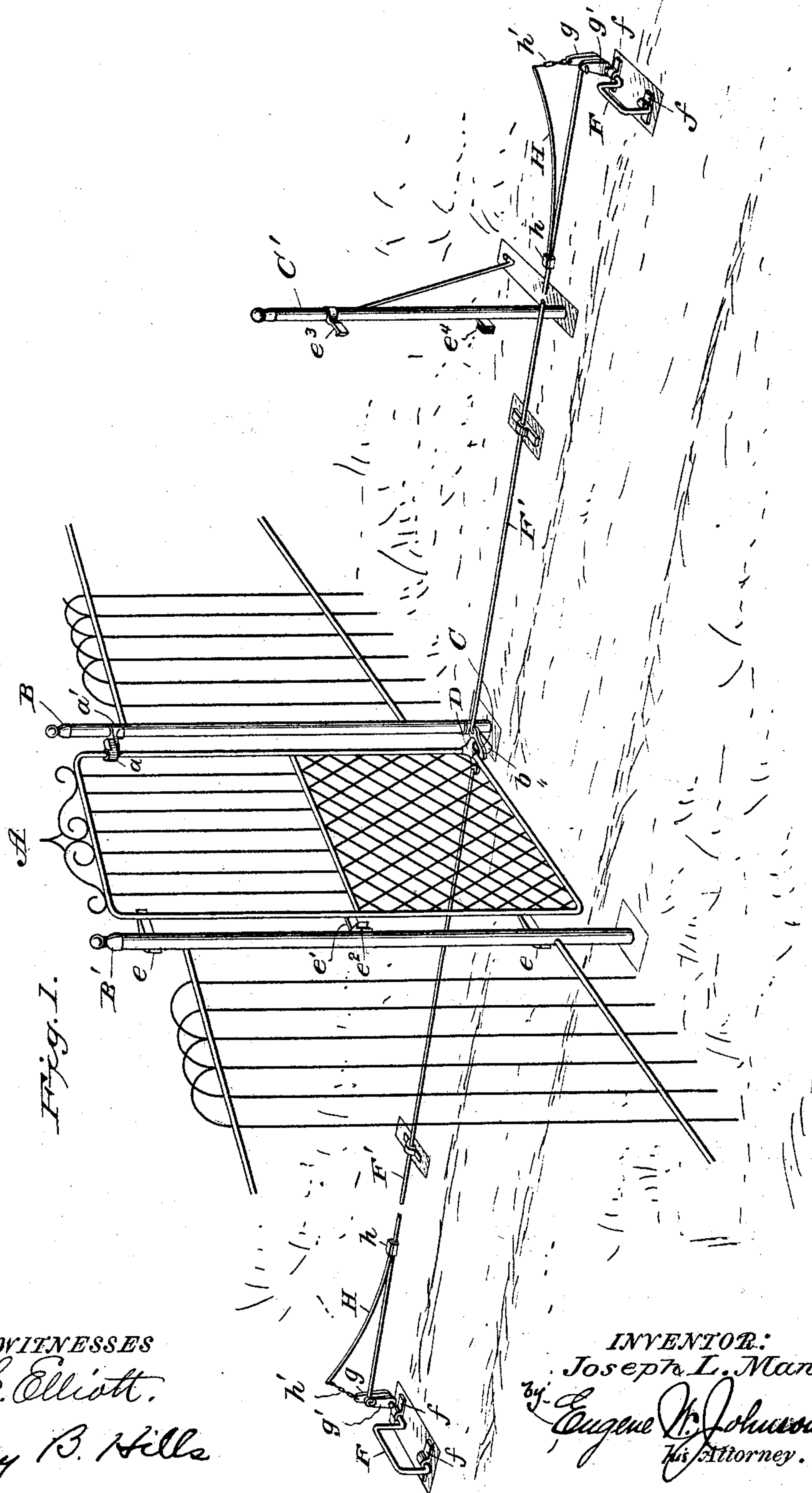
J. L. MANLOVE.

GATE.

(Application filed Mar. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES
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INVENTOR:
Joseph L. Manlove,
by Eugene W. Johnson -
his Attorney.

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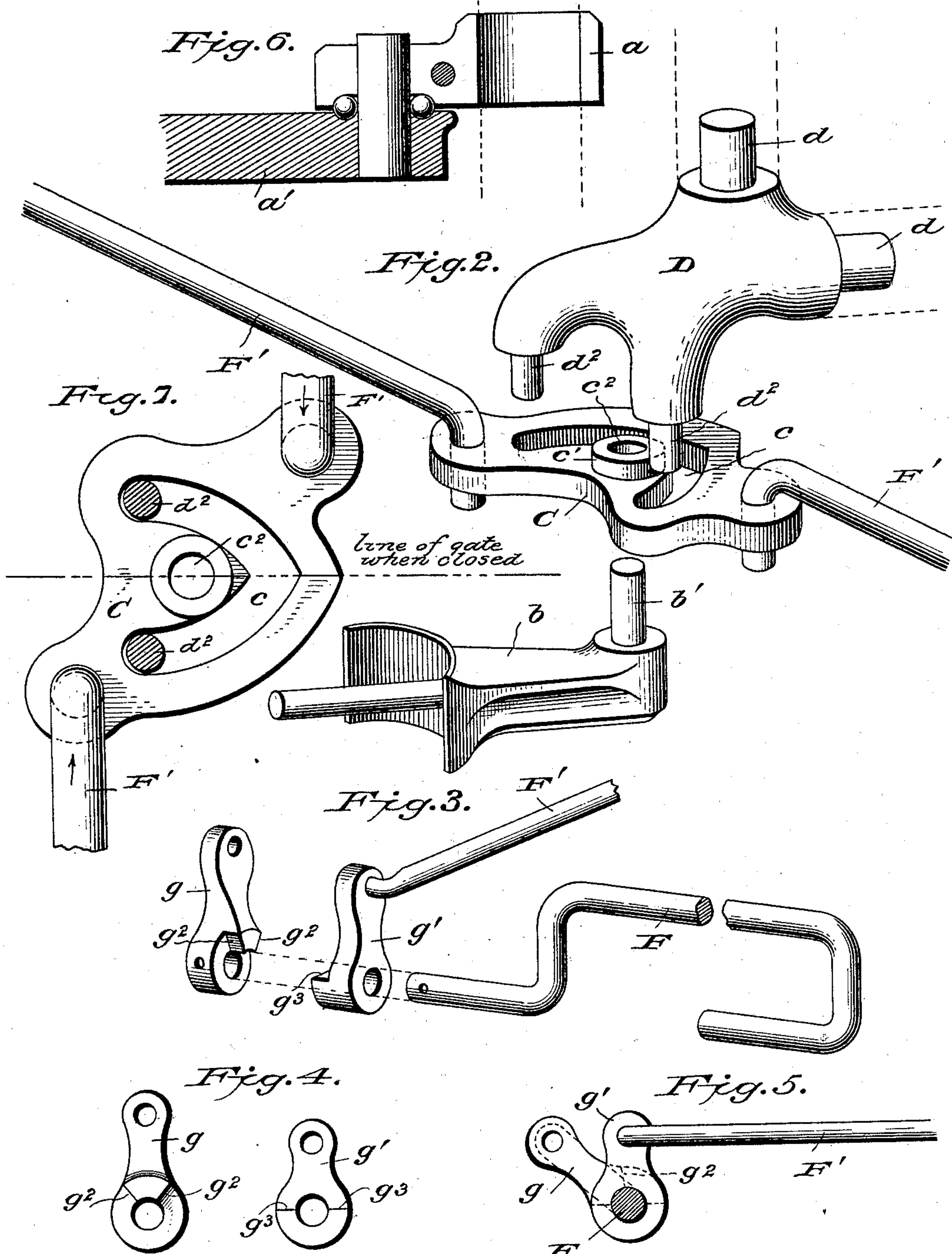
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UNITED STATES PATENT OFFICE.

JOSEPH L. MANLOVE, OF MILTON, INDIANA.

GATE.

SPECIFICATION forming part of Letters Patent No. 609,035, dated August 16, 1898.

Application filed March 29, 1898. Serial No. 675,580. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH L. MANLOVE, a citizen of the United States, residing at Milton, in the county of Wayne and State of Indiana, have invented new and useful Improvements in Gates, of which the following is a specification.

This invention relates to certain new and useful improvements in gates, the object of the invention being to provide a gate and its operating means of such construction that the gate will be automatically opened and closed by the passage of a vehicle, the wheel thereof engaging with trips placed in the roadway; and my invention consists in the special construction and combination of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view. Fig. 2 is a perspective view showing the parts of one of the gate-hinges which when operated upon opens and closes the gate, the several parts being shown detached. Fig. 3 is a perspective view of the parts attached to the trips separated. Figs. 4, 5, and 6 are detail views; and Fig. 7 is a plan view of the cam-plate to which the bars connected with the trip are attached, the depending pins of a fixture carried by the gate engaging with the slot therein.

In the drawings, A refers to the gate, B B' the posts on each side of the gateway, and C' a post placed on one side of the roadway, against which the gate strikes when opened.

The gate A is preferably made up with an iron frame, and to the vertical side piece nearest the post B is attached a block or plate *a*, having a pintle that passes through an eye or aperture in the other section of the hinge, which is attached to the post B, and this hinge, made up of the parts *a a'*, sustains the major portion of the weight of the gate and has ball-bearings, as shown in Fig. 6. To the lower portion of the post B is attached an outwardly-projecting arm *b*, having an upwardly-projecting pintle *b'*, which is on a line with the eye or aperture in the part of the hinge *a'* attached to the upper end of the gate-post. Upon the pintle *b'*, so as to rest upon the collar or flange of the arm adjacent

to said pintle, is a cam-plate C, which is provided with an angular slot *c* and similar projecting portions *c'* on both sides of the plate, through which is an aperture *c²* to receive the pintle *b'*, the plate being maintained thereby substantially in a horizontal position. The plate C has apertures for engagement with the bent ends of the bars *F'*, connected to the trip-levers.

D refers to a fixture having studs *d d'* at right angles with each other for attachment thereto of the ends of the tubular bars which form the gate-frame, and said fixture is also provided with downwardly-projecting pins *d²*, which are adapted to engage with the angular slot *c* on each side of the pintle *b'*. The plate C, which loosely engages the pintle *b'*, has therethrough a slot *c*, the side walls of said slot being curved, as shown in Fig. 7. When the gate is closed, the plate C will be so placed that the depending pins *d²* of the fixture D, attached to the gate, will be adjacent to the ends of the slot or at substantially right angles with the line of the gate. The operating-rods *F'* engage with the plate C not only on opposite sides of the gate, but also on opposite sides of the fulcrum-pin *b'* and the depending pins *d²* of the fixture D. The configuration of the slot *c* in the plate C is determined by striking two arcs so as to intersect each other from centers to one side of the pivotal point or fulcrum of the plate and at equal distances therefrom, so that the points of intersection of the arcs or sides of the slot will be on a line with the center of the pivotal point of the plate and a line drawn through the points of intersection of the arcs—that is, a line drawn through the ends of the side walls of the slot will intersect the center of the opening *c²*, which is the pivotal point of the plate, and said line will represent the position of the gate with respect to the plate C when the gate is closed. The construction shown provides means whereby when either of the operating-rods *F F'*, which engage with the plate on opposite sides of its fulcrum, is moved toward the gate the gate will be swung in the same direction, so as to open it. When the slotted plate C is oscillated on its pintle, one of the pins *d²* will engage with the end of the slot *c*, and the other pin moves in said

slot, so as to change the inclination of the gate, raising the front portion of the gate and inclining it from a vertical position, so that it will swing either toward the post C' in opening the gate or away from the same in closing it, such movement of the plate disengaging the gate-latch from its catch by elevating the same. It will be noted that the bars F' are attached to the plate on opposite sides of the pintle, so that when either of the bars is pushed or moved toward the post B the gate will be tilted and swung toward the post C'; also, that when either of said bars is drawn upon or pulled away from the post B the gate will be tilted to disengage it from the catch e^3 and swing it toward the post B'.

The gate-post B' is provided with outwardly-projecting plates or stops $e e$, which may carry buffers, as rubber blocks, against which the front bar of the gate will strike, and the latch-bar e' of the gate is adapted to engage with a catch e^2 , carried by the gate-post. The post C' has a catch e^3 and also a buffer-block e^4 , and said post is set to one side of the road-bed and is suitably braced.

F refers to the trips or angle-bars, which are journaled in blocks ff , attached to pieces of stone, either artificial or real, set in the roadway, and the trips F have mounted on the ends of the same arms $g g'$, the arm g at the outer end of the bar forming the trip being rigidly secured thereto on a line with the bends in the trips F, and adjacent thereto is the arm g' , which is loosely mounted on the trip and with the same engages the bar F', which extends therefrom to the plate C, the same passing through a suitable guide-block, as shown. The rigidly-attached arm g has a projecting portion which provides shoulders g^2 , and the loose arm has shoulders g^3 , against which the shoulders g^2 may abut. The shoulders are so arranged that the arm g' may have a rocking movement on the projecting end of the trip approximately equal to a quarter of a circle. The bars F' have attached thereto blocks h , to which are secured springs H, said springs projecting upward therefrom and having at their ends links h' , which connect the ends of the springs with the arms g , said springs serving to hold the trips and arms g normally in a vertical position.

In operation a vehicle in approaching the gate operates the trip so as to incline it toward the gate, which movement does not affect the operating-bar until the trip is inclined considerably beyond a vertical position, and after the trip has been inclined the lug or projecting portion g^2 will engage a projection g^3 on the loose arm g' and move the bar F', which will oscillate the plate C, which inclines and raises the gate, disengaging the latch thereof from the catch and causing the gate to swing toward the post C'. The movement of the gate is very rapid, and after the vehicle-wheel has passed the trip the spring

engaging with the arm g which is rigidly attached to the trip will raise the trip or hold it in its normal position without affecting or moving the bar between the arm g' and the plate C. When the vehicle reaches the opposite trip—the bar on the other side of the gate—it will operate to close the gate.

If desired, the upper hinge of the gate may be provided with ball-bearings.

It will be noted that a gate constructed in accordance with my invention swings in one direction to open, no matter from what direction the vehicle approaches, and for this reason the bar connected to the trip on that side of the gate toward which it swings to open is of greater length than the bar on the other side.

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

1. A trip mechanism for swinging gates, comprising an oscillating trip, an arm rigidly attached thereto, a second arm in pivotal engagement with the trip, a bar connected to the latter arm and a spring carried by the bar to hold the trip normally in a vertical position, the arms having lugs which engage when the trip is inclined, for the purpose set forth.

2. A trip mechanism for swinging gates, comprising oscillating trips, each having an arm rigidly attached thereto and a second arm in pivotal engagement with the trip, said arms having interlocking faces which engage when the arms are out of line with each other, rods extending from the arms which are loosely mounted on the trips to a cam-plate, and springs connected to the arms which are rigidly attached to the trip so as to exert an upward pressure thereon and hold the trips normally in a vertical position, substantially as shown and for the purpose set forth.

3. In a gate, the combination with a cam or slotted plate mounted so as to oscillate in a horizontal plane, gate-operating bars connected with trips and with the slotted plate, on opposite sides of its pivotal support, a fixture attached to the gate and provided with depending pins which engage with the slot and a hinge connecting the gate with its post, substantially as shown and for the purpose set forth.

4. In a gate, the combination of a pivoted cam or slotted plate the slot therein being on opposite sides and in front of its pivotal or turning point, a fixture attached to the gate having two depending pins positioned out of line with the hinge or gate-support above, said pins entering the slot in the pivoted cam, bars connected to opposite sides of the cam and with trips, substantially as shown and for the purpose set forth.

5. In a gate-operating mechanism, a pivotally supported or fulcrumed plate having therethrough a slot c positioned on each side of the fulcrum of the plate, rods connected to trips and to the plate on opposite sides of

its fulcrum, a fixture attached to the gate,
said fixture having depending pins which en-
gage the slot in the plate, so that when either
of the trips and rods connected thereto are
5 moved toward the gate the plate will be turned
on its fulcrum in the same direction, substan-
tially as set forth.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

JOSEPH L. MANLOVE.

Witnesses:

AARON MORRIS,
FRANK M. JONES.