W. CROSSER.

GATE.

APPLICATION FILED MAR. 13, 1909.

934,288.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

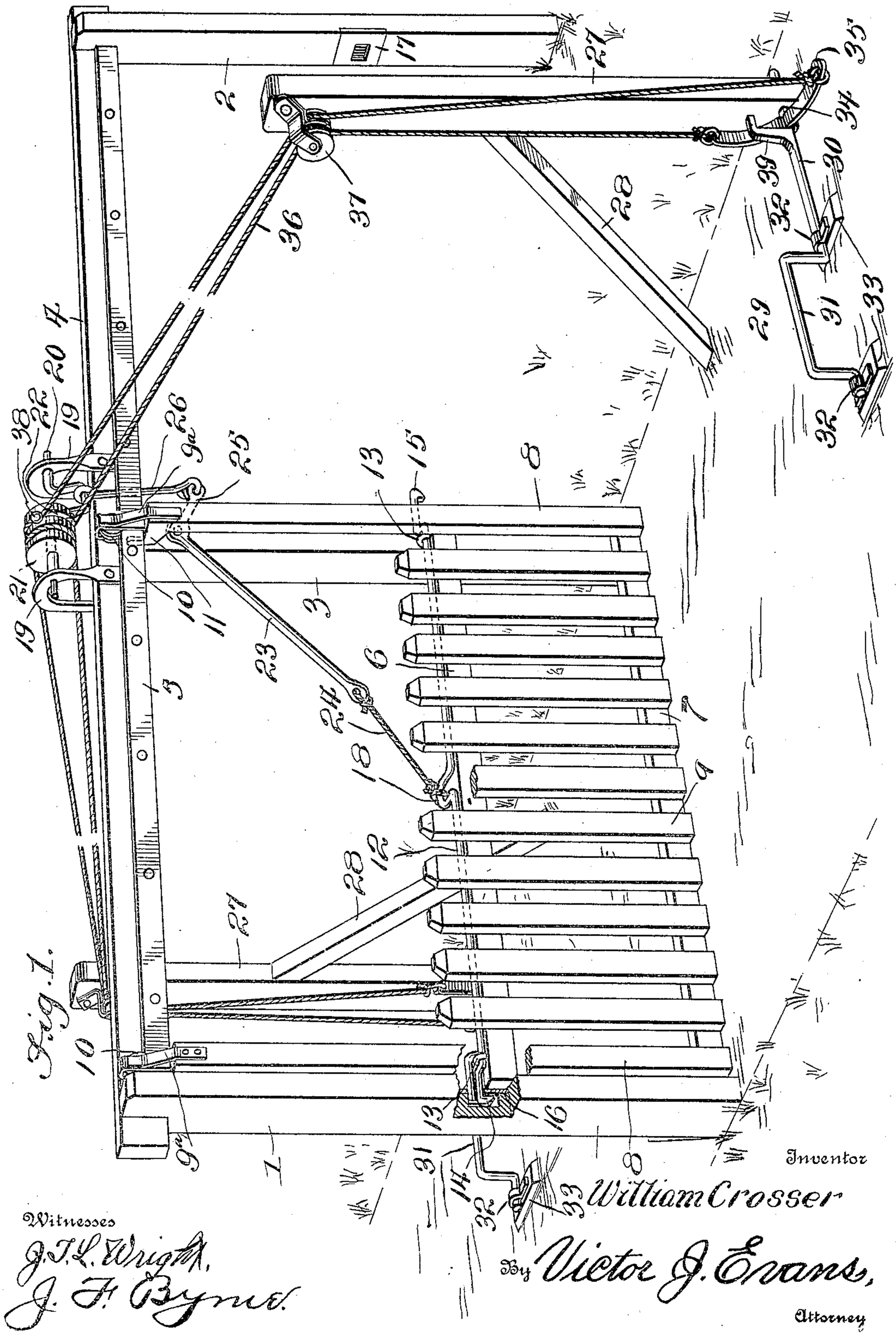

Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

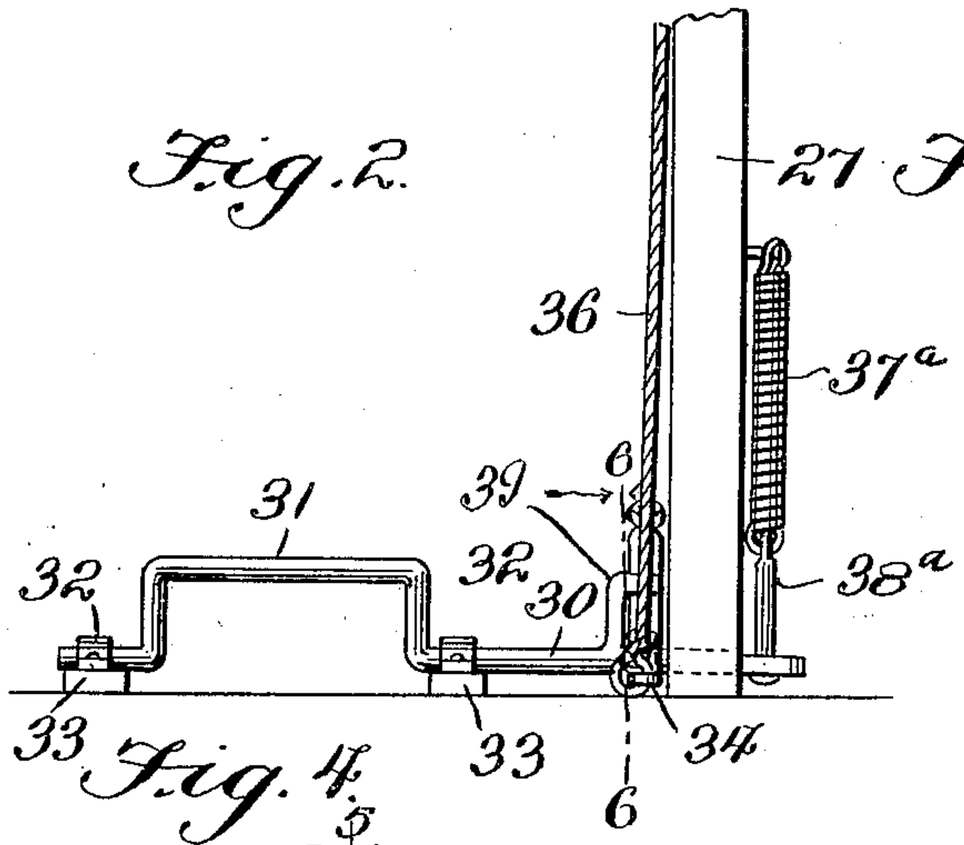


Fig. 3.

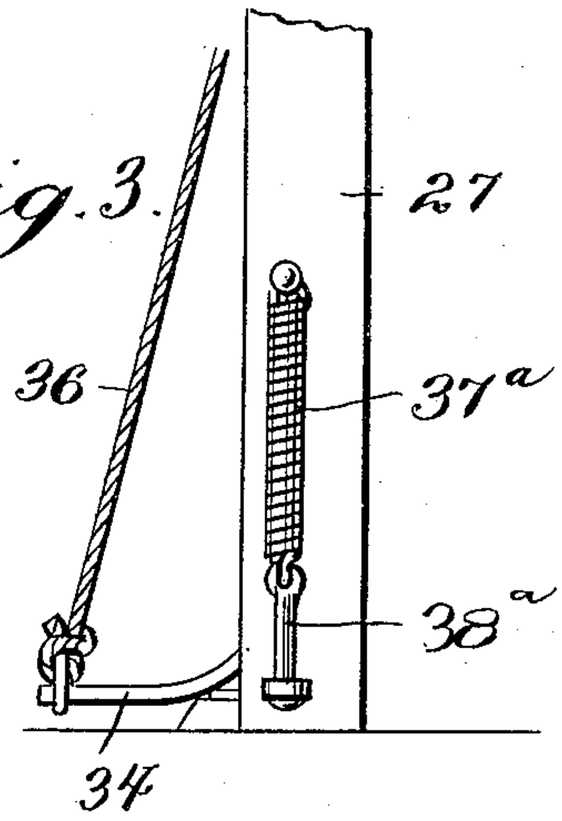


Fig. 4.

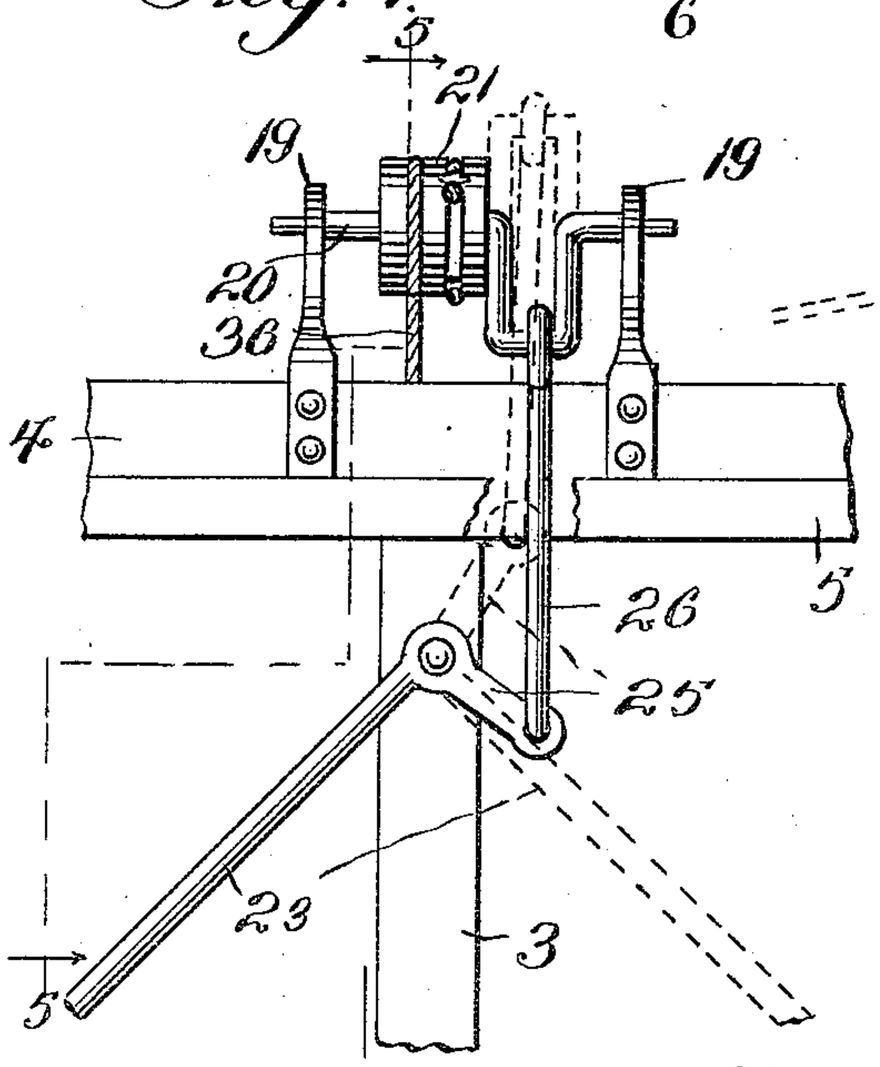


Fig. 5.

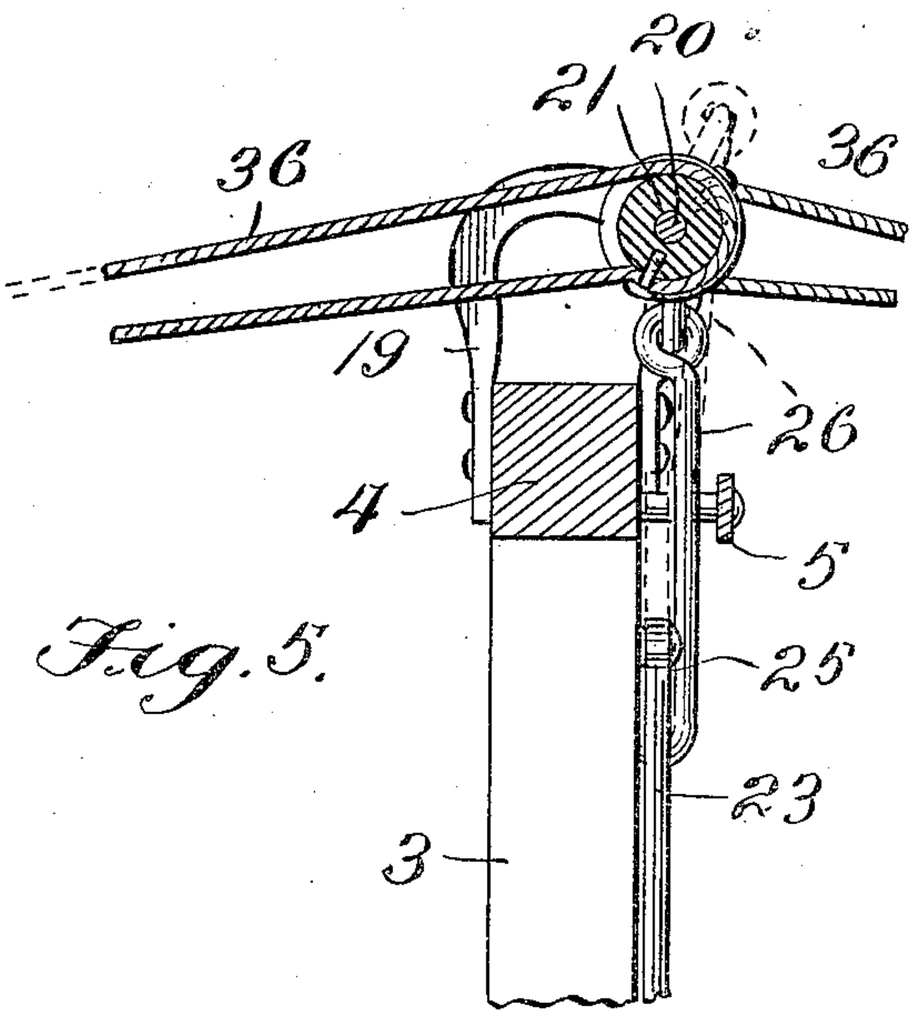
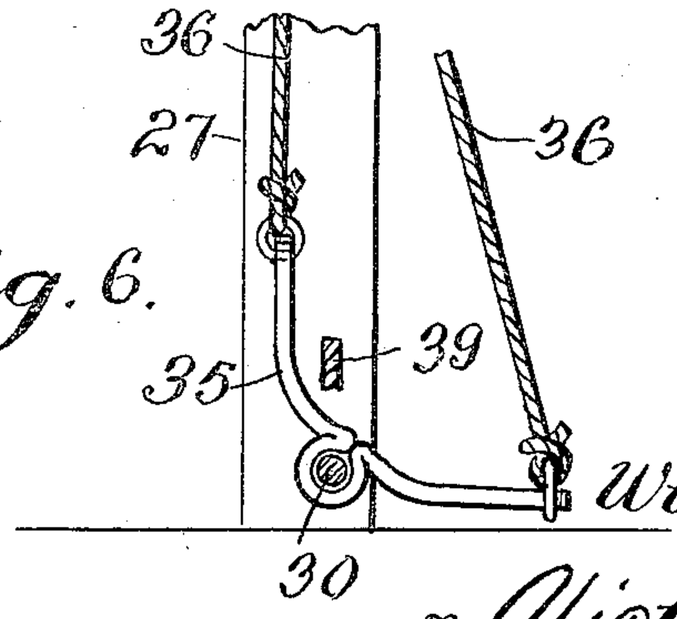


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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GATE.

934,288. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed March 13, 1909. Serial No. 483,265.

To all whom it may concern:

Be it known that I, WILLIAM CROSSER, a citizen of the United States, residing at Mount Morrison, in the county of Jefferson and State of Colorado, have invented new and useful Improvements in Gates, of which the following is a specification.

My invention relates to improvements in gates.

The primary object of the invention is the provision of a gate which may be automatically opened and closed, one which shall be simple, durable and efficient, and one which may be manufactured, sold and erected at small cost.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing, wherein:—

Figure 1 is a perspective view of a gate constructed in accordance with my invention. Fig. 2 is a detail view in side elevation of one of the trips. Fig. 3 is a veiw in end elevation of the trip. Fig. 4 is a detail view of the crank shaft, the operation of which opens or closes the gate. Fig. 5 is a sectional view on the plane indicated by the line 5—5 of Fig. 4, looking in the direction indicated by the arrows, and Fig. 6 is a sectional view on the plane indicated by the line 6—6 of Fig. 2, looking in the direction indicated by the arrow.

My improved gate comprises a gate supporting frame which consists of vertical end supporting posts 1 and 2 respectively, a vertical intermediate supporting post 3, a horizontal beam 4 which is secured to the upper ends of the supporting posts, and a horizontal track 5 which is secured to the beam.

The gate comprises an upper rail 6, a lower rail 7, end panels 8, and intermediate panels 9, the panels being secured to the rails. The end panels 8 extend above the gate and have hangers 9^a secured to their upper ends. Grooved rollers 10 are journaled on the hangers 9^a and engage the track 5 to slidably mount the gate thereon. The upper ends of the end panels 8 are formed to provide guards 11 which prevent the gate from accidentally leaving the track 5. A bolt 12 is journaled for oscillatory movements upon the upper side of the top rail 6 by means of suitable elements 13, and the ends thereof are formed to provide hooks 14 and 15. When the gate is closed the hook 14 has interlocking engagement with a keeper plate 16 and prevents the accidental opening of the gate, said plate being secured to the end supporting post 1. When the gate is opened the hook 15 has interlocking engagement with a keeper plate 17 and prevents the accidental closing of the gate, the plate being secured to the end supporting post 2. At a point centrally between its ends the bolt 12 is formed to provide a crank loop 18 by means of which the bolt may be oscillated to throw either of the hooks out of interlocking engagement with its keeper plate. The crank loop 18 yieldingly retains each hook in position for automatic engagement with its keeper plate.

Bearing brackets 19 are secured to the beam 4 in relatively spaced relation. A crank shaft 20 is journaled in the bearings of the brackets 19, and it has a drum 21 fixed thereon, said drum being provided with peripheral grooves 22. An L-shaped lever is pivotally secured to the supporting post 3 and the long arm 23 thereof is connected with the crank loop of the bolt 12 by means of a flexible element 24, and the short arm 25 thereof is connected with the crank of the shaft 20 by means of a link 26. The connection between the shaft 20 and the bolt 12 is such that the initial movement of the shaft in one direction or the other will withdraw the hooks 14 and 15 from keeper interlocking position, a further movement of said shaft in either direction will cause the gate to travel upon the track 5 into either its closed or opened position.

Standards 27, each being arranged on opposite sides of the gate, are strengthened by diagonal braces 28. Trips 29, each of which is located on opposite sides of the gate and each of which comprises a shaft 30 and a crank 31, are journaled in the bearings 32 secured to the upper ends of blocks 33 let into the ground, and in bearings 34 located in the standards 27. An arcuate lever 35 is journaled at a point centrally between its ends on each shaft 30. Secured to the ends of each lever 35 are the ends of a cable 36, said cables passing about the drum 21 and over grooved pulleys 37 journaled on the standards 27. The cables 36 are located in the grooves 22 of the drum 21 and are secured against movement around the drum by means of pins 38. An angular arm 39 is secured to each shaft 30, said arms being

disposed for engagement with and adapted to rock the levers 35 when the shafts are operated. The rocking of one of the shafts 30 rotates the drum 21, such movement of the drum oscillating the crank shaft 20, the movement of the shaft rocks the lever 23 on its pivot. The initial movement of the lever 23 withdraws the hooks 14 and 15 of the bolt 12 from keeper interlocking position, a further movement of the lever causing the gate to travel upon the track 5 into either its opened or closed position. The trips 29 are yieldingly retained in normal position by springs 37^a which are secured to the posts 27, and to bolts 38^a carried by the shafts 30, see Figs. 2 and 3 of the drawings.

Each of the shafts 30 is adapted to be operated by a vehicle engaging the crank 31 thereof during its movement in the direction of and away from the gate.

It should be apparent from the above description, taken in connection with the accompanying drawings, that I provide a gate which is adapted to be automatically closed and opened, which is adapted to be automatically secured in its closed or opened position, which is simple and durable and efficient, and which may be manufactured and sold and erected at small cost.

While I have described the method of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what is claimed as new is:—

1. A device of the character set forth comprising end supporting posts, an intermediate supporting post, a track mounted on the posts, a gate slidably mounted upon the track, brackets mounted upon the track, a crank shaft journaled on the brackets, an elbow lever pivotally mounted upon the intermediate post, a connection between one arm of the lever and the gate, a connection between the other arm of the lever and the crank shaft, a drum secured to the crank shaft, a standard, a trip, a lever pivotally mounted on the trip, pulleys journaled on the standard, and connection between the drum and the ends of the lever, said connection passing over the pulleys on the standard.

2. A device of the character described comprising a slidably mounted gate, means adapted to open or close the gate when operated, a trip including an angular arm, a lever pivotally mounted upon the trip and adapted to be engaged and rocked by the arm during the operation of the trip, and connection between the ends of said lever and said means.

3. A device of the character described comprising a slidably mounted gate, means adapted to open or close the gate when operated, a trip, a lever adapted to be rocked by the operation of the trip, connection between the lever and said means, a support, a bolt secured to the trip, and a spring secured at one end to the bolt and at its other end to the support.

4. A device of the character set forth comprising end supporting posts, an intermediate supporting post, a track mounted upon the posts, a gate slidably mounted upon the track, keeper plates secured to the end supporting posts, a bolt rotatably mounted upon the gate and adapted to engage one keeper plate when the gate is opened and the other keeper plate when the gate is closed, said bolt being provided with a crank, an elbow lever pivotally mounted upon the intermediate supporting post, a flexible connection between one of the arms of the lever and the crank of the bolt, a crank shaft journaled upon the track, a link connecting the crank of the shaft and the other arm of the lever, and means by which the crank shaft may be operated.

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

WILLIAM CROSSER.

Witnesses:

JOHN KIRBY,

L. E. LAGROW.