

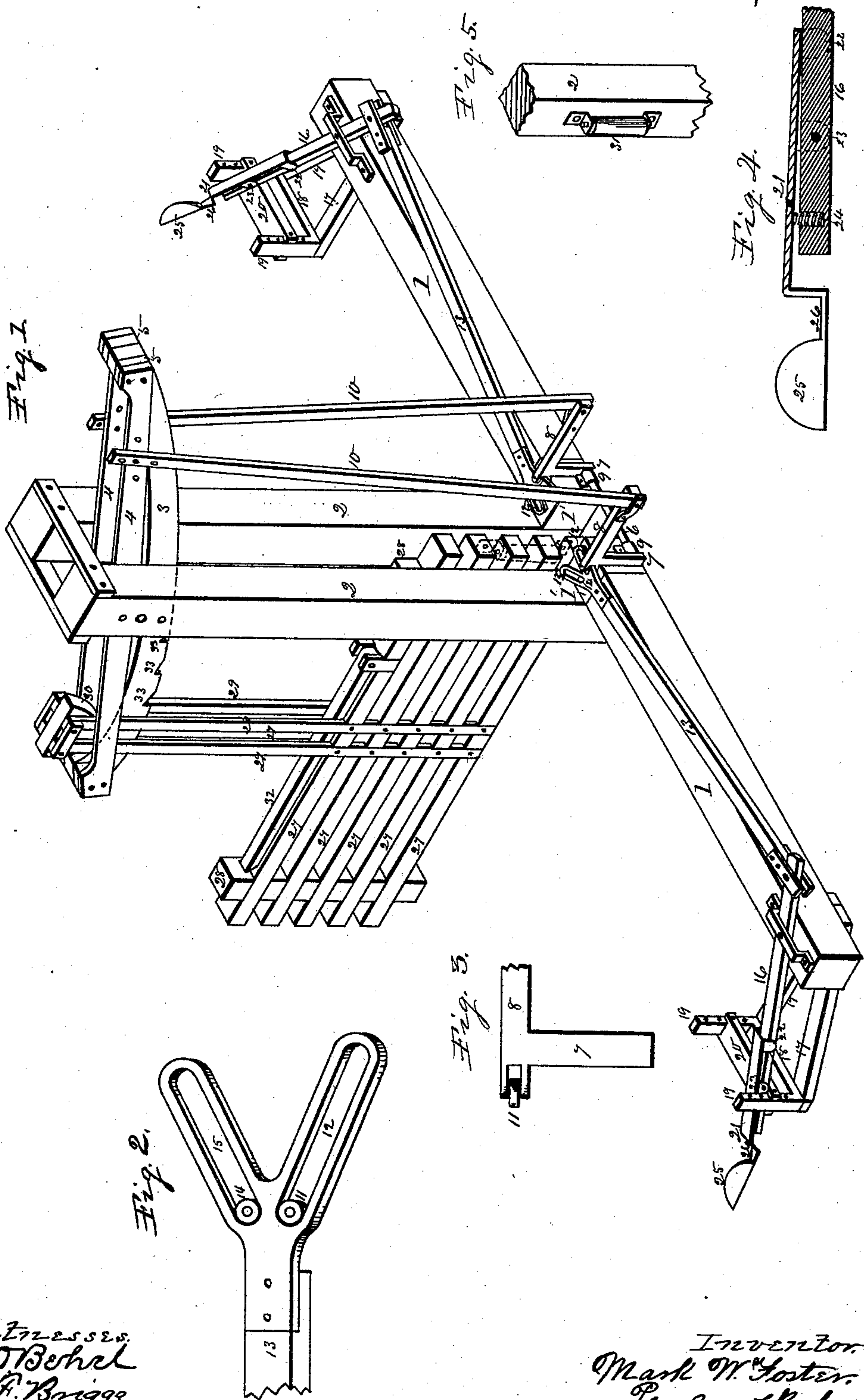
(No Model.)

M. W. FOSTER.

GATE.

No. 370,863.

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Witnesses
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UNITED STATES PATENT OFFICE.

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GATE.

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To all whom it may concern:

Be it known that I, MARK W. FOSTER, a citizen of the United States, residing at Pecatonica, county of Winnebago, and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification.

This invention relates to a class of gates in which the opening and closing movements are controlled by the wheel or runner of a vehicle.

The object of this invention is to provide a gate of a simple and durable construction, capable of being operated by the wheel or runner of a vehicle, and capable of being adjusted for summer or winter use.

In the accompanying drawings, Figure 1 is a representation of a complete gate embodying my invention and in which the gate is represented in a closed position. Fig. 2 is a representation of the V-shaped slotted slide. Fig. 3 is a side elevation of part of the double L-shaped tilting-lever. Fig. 4 is a lengthwise central section of the operating-lever. Fig. 5 is an isometrical representation of a portion of one of the vertical posts, showing the roller fixed thereto.

In the figures a base-beam consisting of like parts, 1, is placed parallel with the roadway, and their contiguous ends are framed into posts 1', which are securely fixed in the ground. Immediately on the side of the post 1' next the driveway posts 2 rise in vertical position, suitably separated to receive an oscillating trackway between their upper ends. The trackway consists of a curved center bar, 3, and parallel side bars, 4, separated by intermediate end blocks, 5, and suitable bolts passed through their end connections serve to hold the parts in their relative position to form vertical openings between the parallel side bars, 4, and the opposite sides of the center curved bar, 3, which extend the length of the side bars between the separating end blocks. This trackway is pivotally supported at its center between the upper ends of the vertical posts by means of pivot-bolts connecting the parallel side bars with their respective vertical posts, which permit the trackway to oscillate on its pivotal connection therewith.

The trackway is made vertically adjustable by means of a series of holes formed in the vertical posts, into which its pivot-bolts can

be put to carry the gate at various heights to override snow or other obstructions. There is a peculiarly-formed double crank-lever, consisting of a horizontal central journal portion, 6, vertical arms 7, rising from its end portions, and horizontal parallel arms 8, connected with the outer ends of the vertical arms 7, which extend at right angles with the journal portion 6. The journal portion of this double crank-lever is supported to turn in bearings 9 on the rear faces of the base-posts 1'.

Vertical connecting-rods 10 are pivoted at their lower ends to the extreme rear ends of parallel arms 8 of the double crank-levers, and their upper ends are pivoted to the parallel side bars, 4, of the trackway.

The vertical connecting-rods are made lengthwise adjustable in their connections with the parallel side bars of the trackway, to give a greater or less vertical movement to the trackway in the oscillatory movements of the double crank-lever. They are also made vertically adjustable in their connections therewith to adjust them to the oscillatory movements of the double crank-lever to maintain an equal oscillatory movement of the trackway relatively with the horizon whatever be the vertical adjustment of the track as a whole.

The inner ends of the horizontal parallel arms 8 of the double crank-lever are provided with anti-friction rollers 11 to enter within the slots 12 of the horizontal connecting-rods 13, and an anti-friction roller, 14, fixed to the upper face of the base-posts 1', enters within the slot 15 in the horizontal connecting-rod 13.

From this construction and application of the parts it will be seen that an endwise movement of the horizontal connecting-rods 13 will impart an oscillatory movement to the double crank-lever, which will be transmitted to the vertical connecting-rods, and thence to the trackway to elevate or depress its ends or incline it to the horizon as either of the horizontal connecting-rods 13 is moved endwise in one or the other direction.

An operating-lever, 16, at each end of the base-beam, to be operated by the wheel of the vehicle, is pivotally connected therewith to oscillate in a horizontal plane, and one end thereof is pivotally connected with the outer end of its respective horizontal connecting-rod 13 in such a manner that the horizontal

movement of the free inner end of either of the levers 16 will operate to oscillate the trackway.

Supporting-frames for the inner ends of the operating-levers consist of bars 17, fixed at one end to the base-beam, which extend inward therefrom, and at their inner ends are connected with a base-bar, 18. From its end portions rise vertical supports 19, bored at proper intervals horizontally to receive a bolt.

A horizontal bar-support, 20, with ends grooved to receive the vertical supports, is bored to correspond with the bore-holes in the vertical supports, and bolts or pins passed through the parts serve to fix the horizontal bar in place on the vertical supports, and by means of the series of holes in the vertical supports the horizontal bar is made vertically adjustable thereon, to vary the height of the inner end of the operating-lever.

The free arm of the operating-levers is provided with an inward extension consisting of a metallic bar, 21, having ears 22 depending from its outer end to embrace the operating-lever, and also depending ears 23 to embrace the lever nearer its end portion, and a bolt or pin passed through the depending ears 23 and through the lever forms a pivotal connection of the extension with the lever to permit a limited vertical vibration of its inner end.

A spiral spring, 24, is supported in a hole formed in the upper surface of the inner end of the operating-lever to engage the under face of the extension, to hold its inner free end elevated to permit a limited yielding movement to a downward pressure.

The free inner end, 25, of the lever-extension which receives the vehicle-wheel is of a segmental form, and the portion 26, connecting it with the main portion of the extension, is depressed in the form shown to permit the wheel or the runner of a vehicle to pass over it in its onward movement.

The normal position of the operating-levers 16, when the gate is closed, is inclined to the driveway in the direction of the approaching vehicle to place its enlarged portion 26 in its trackway to engage the vehicle and be carried forward with its forward movement to a position substantially at a right angle with the driveway. In this movement the lever will be made to slide on the wheel or runner of the vehicle until its neck portion 26 is opposite the wheel, when the lever will have reached its forward limit, and the wheel will then pass over the neck portion of the extension.

The gate proper may be of any of the known varieties; but in this instance I have employed horizontal bars 27 and vertical end bars, 28, gained on each other, forming a rectangular frame in gate form of proper dimensions.

Vertical supports 29 are gained into the horizontal bars on each side of the gate, near its center, and rise therefrom on each side of the curved trackway 3 within the parallel side bars, 4. A runner, 30, to engage the upper edge of the curved trackway is placed be-

tween the upper ends of the vertical supports 29 of the gate, and is securely held in place by means of bolts passed through the parts.

Rollers 31 are supported to revolve in suitable bearings on the inner opposite faces of the vertical posts 2, and serve to guide the gate in its opening and closing movements and prevent frictional contact of the gate with the parts.

In the forward movement of the vehicle in approaching the gate from either side its wheel or runner will come in contact with the segment portion of the operating-lever, and its onward movement will carry it forward to its right-angled position relatively with the trackway, and this movement of the operating-lever will be transmitted to the pivoted trackway to place it in an inclined position to cause the gate to descend its inclined upper surface and open the gate to permit the vehicle to pass through the opening, and in its passage the vehicle will engage the operating-lever on the opposite side of the gate to that at which it entered, and will carry the lever to its normal inclined position. This movement of the lever will be transmitted through the connecting mechanism to reverse the inclination of the trackway and cause the gate to close in rear of the vehicle. In the forward movement of the vehicle in its connection with the operating-lever in its passage through the gateway the swinging movement of the lever from its right-angled position will withdraw it from the wheel and permit it to pass without overriding the lever.

A lever, 32, is pivoted at one end to the upper bar of the gate at any suitable point between its center and its rear end, and its forward free end is fitted to engage the notches 33, formed in the under edge of the curved trackway, and is employed to hold the gate in a partially-open position.

In the foregoing I have shown and described a runner, 30, to engage the upper edge of the curved trackway; but instead thereof a traveling roller may be employed. I have also shown and described a curved trackway, 3, which I prefer; but instead thereof a straight bar may be employed in connection either with the runner shown and described or with a traveling roller or rollers.

It will also be observed that an important feature in my improved gate is its self-closing tendency when only partially opened, which permits it, when opened to nearly half its width and then liberated, immediately to return to its closed position.

I claim as my invention—

1. The combination, with a suitable support, a track pivoted thereto, and a gate suspended from the track, of an angle-lever pivoted to the base, a rod connecting the angle-lever with the track, and a pair of diverging inclines independent of and having a connection with one arm of the angle-lever to operate the angle-lever, and through the connecting-rod tilt the track, substantially as set forth.

2. The combination, with a suitable support, a track pivoted thereto, and a gate suspended from the track, of an angle-lever pivoted to the base, a connecting-rod from the angle-lever to the track, and a reciprocating slide provided with diverging slots to operate the angle-lever, for the purpose substantially as set forth.

3. The combination, with a suitable support, a track pivoted thereto, and a gate suspended from the track, of an angle-lever having one arm pivoted to the base, another arm connected with the track, and a slide provided with diverging slots in engagement with a fixed stud on the base, and with the lever between its points of connection with the track and with the base, for the purpose substantially as set forth.

4. The combination, with the support, the track pivoted thereto, and the gate suspended from the track, of a pair of angle-levers pivoted to the base and connected to move in unison, rods connecting the levers with the track, and corresponding operating-slides provided with inclines in engagement with the angle-levers, whereby the movement of one of the

slides to open the gate sets the other slide to close the gate, substantially as set forth.

5. The combination, with the support, the oscillating track pivoted thereto and the gate suspended from the track, of the angle-lever pivoted to the base, the slide provided with diverging slots for operating the angle-lever, and the rod connecting the angle-lever and track, the connecting-rod having an adjustment lengthwise of the track in its connection therewith, whereby the angle of tilt may be increased or diminished, substantially as set forth.

6. The combination, with a sliding gate, of an oscillating track supporting the same and provided with notches on its lower edge, and a brace-detent pivoted upon the gate and adapted to engage with its free end the notches upon the under side of the track, substantially as set forth.

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