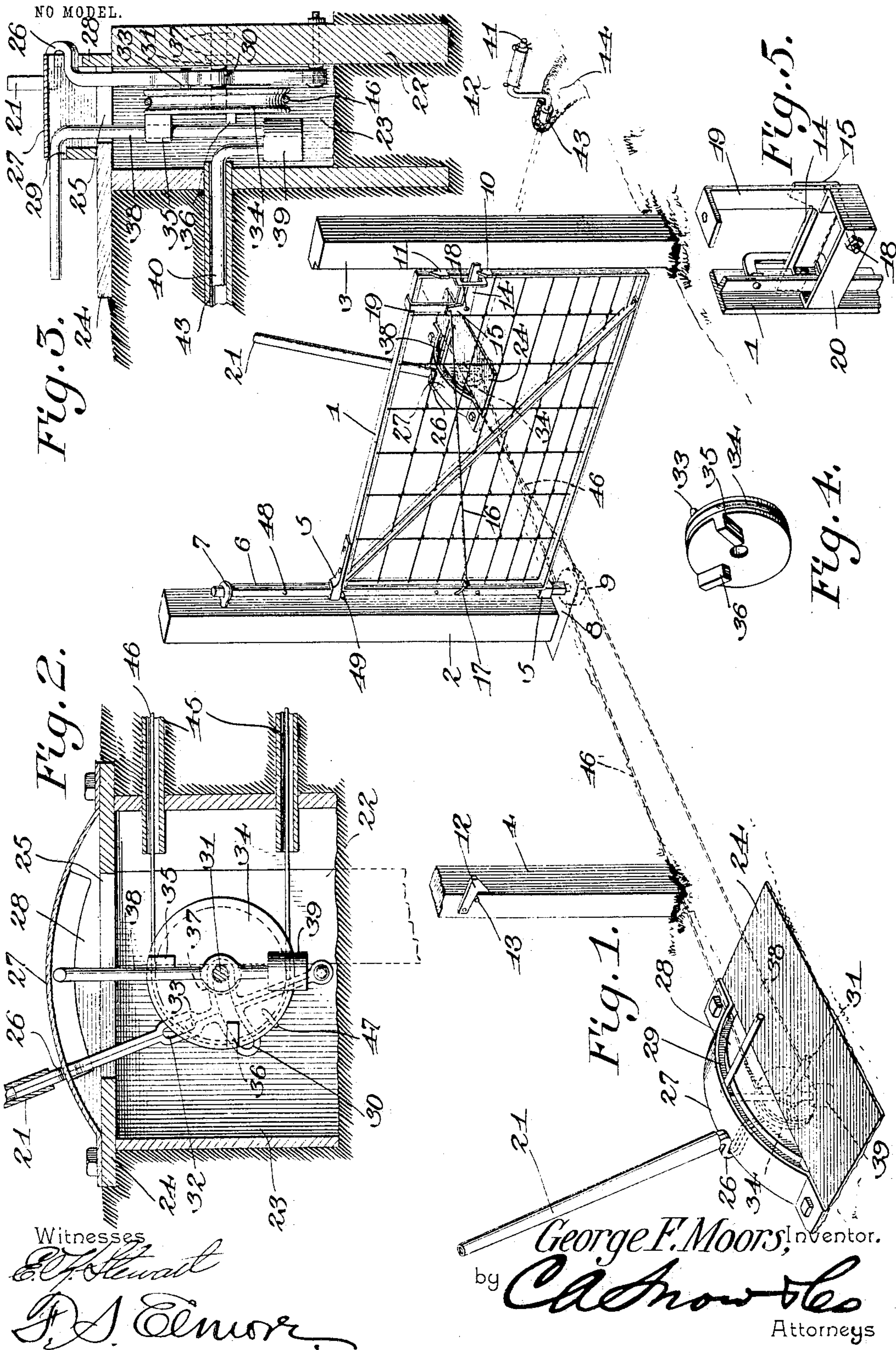


No. 775,306.

PATENTED NOV. 22, 1904.

G. F. MOORS.
GATE.

APPLICATION FILED JUNE 13, 1904.



UNITED STATES PATENT OFFICE.

GEORGE F. MOORS, OF OWENSBORO, KENTUCKY, ASSIGNOR OF ONE-HALF TO WILLIAM E. McFARLAND, OF OWENSBORO, KENTUCKY.

GATE.

SPECIFICATION forming part of Letters Patent No. 775,306, dated November 22, 1904.

Application filed June 13, 1904. Serial No. 212,378. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. MOORS, a citizen of the United States, residing at Owensboro, in the county of Daviess and State of Kentucky, have invented a new and useful Gate, of which the following is a specification.

My invention relates to gates, and especially to the gate-operating mechanism, having for its objects to provide a comparatively simple inexpensive device of this character whereby the gate may be automatically operated by the wheels of a passing vehicle or positively opened or closed by an occupant of the latter without dismounting or by pedestrians or equestrians.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of the gate and its operating mechanism embodying my invention. Fig. 2 is a vertical longitudinal sectional elevation through one of the gate-operating devices. Fig. 3 is a transverse section taken on a line at right angles to Fig. 2 and through the other gate-operating device. Fig. 4 is a detail perspective view of one of the cable-operating disks. Fig. 5 is a detail perspective view of the gate-latch.

Referring to the drawings, 1 designates a gate; 2, its hinge-post; 3, the primary latch-post against which the gate normally closes, and 4 a secondary latch-post with which the gate contacts when in open position, these parts, except as hereinafter explained, being of the usual or any appropriate construction and material.

Attached to the rear end of the gate, respectively at its upper and lower edges, is a pair of members or collars 5, which loosely embrace for longitudinal movement a vertical pivoting member or shaft 6, adapted for rotation and having bearing at its upper end in an eye 7, carried by the post 2 and stepped at its lower end in a seat provided in the cover 8 of a suitable chamber formed in the ground adjacent to the base of the post for the reception of a pulley 9, fixed upon the lower end of the shaft 6.

Fixed upon the post 3 are a primary keeper 10 and an auxiliary keeper 11, spaced vertically one above the other, while upon the post 4 is pivoted a secondary keeper 12, designed to swing in a vertical plane and limited in its downward movement by a stop 13 of appropriate construction, there being pivoted upon the gate a latch 14, designed to normally engage with and seat above the keeper 10 or when the gate is open to engage and seat beneath the keeper 12, which for this latter purpose may swing upward upon its pivot. The latch 14, which has at its inner end a right-angularly-disposed uprising arm 15, is connected by a wire or other element 16 with a rigid finger or projection 17, carried by the shaft 6, whereby initial rotation of the shaft in opening the gate will exert traction upon the element 16 and owing to the end of the latter being engaged with the arm 15 rock the latch on its pivot for releasal from the keeper 10, while, on the other hand, at the beginning of the gate-closing movement rotation of the shaft will initially slacken the element 16 and permit the outer end of the latch to drop by gravity from beneath the keeper 12. The latch is pivoted upon a bolt 18 to a supporting-frame carried by the gate and comprising a vertical strap-metal bar 19, disposed upon one side of the gate, and a horizontal strap-metal bar 20, disposed upon the other side of the gate and having an angularly-bent portion extending transversely of the latter and meeting the lower end of the bar 19, to which it is connected by the pivoting-bolt 18, which thus serves a twofold function, it being apparent from this arrangement that the latch may by removing the bolt 18 be shifted to either side of the gate at will, thereby permitting opening of the latter in either direction, which object is furthered by the finger 17 being detachably engaged with suitable openings or seats formed in the shaft 6.

Disposed, respectively, on opposite sides of and at points suitably remote from the gate is a pair of primary operating members or levers 21, pivoted at their lower ends to posts or other suitable supports 22, embedded in the ground within chambers 23, suitably

formed beneath the level of the latter, the upper ends of the chambers at the ground-level being closed by suitable covers 24, provided with longitudinal slots 25, through which the levers 21 project and above which they are angularly bent to produce substantially U-shaped seats 26, adapted to engage and travel upon segmental guide members or plates 27, disposed above the slots and bolted or otherwise attached to the covers 24, from which latter there arise at one side vertical walls 28, the upper edges of which are curved to conform to and are appropriately spaced from the segmental guide-plates 27, thereby producing segmental guide openings or ways 29 for a purpose which will hereinafter appear.

The levers 21 preferably comprise an upper portion or section and a lower portion or section, which latter is formed from strap metal bent into shape, as shown in Fig. 2, to provide a slightly-curved guide-slot 30, designed to receive a shaft 31, and a slot 32, arranged perpendicular to the longitudinal axis of the slot 30 and adapted for the reception of a pin 33, provided on the adjacent side face of a peripherally-grooved disk or pulley 34, loosely journaled for rotation upon the shaft 31 and having upon its other side face a pair of stop lugs or projections 35 36, appropriately spaced apart for a purpose hereinafter defined, the shaft 31 being sustained in suitable bearings within the chamber and fixed to the post or support 22 by means of a staple 37.

Each shaft 31 has loosely mounted thereon for rocking movement one of a pair of secondary operating members or levers 38, provided at their lower ends with weights 39, by which they are maintained normally in vertical position, and having their upper ends angularly bent and projected horizontally outward through the guide-openings 29 in position to be struck by the wheels of a passing vehicle, while at one side of the gate there is attached to the lower end of the member 38, preferably through the medium of the weight 39, an auxiliary shaft 40, designed to extend transversely across the roadway and having its outer end angularly bent above the ground-level to constitute an auxiliary operating member 41, similar in form and operation to the member 38, there being, however, arranged upon the horizontal portion of the member 41 a sleeve 42, secured in place by cotter-pins or otherwise and adapted when the member is struck by a vehicle-wheel to rotate and obviate friction between the parts. The shaft 40 is housed within a tubular casing 43, at the outer end of which a suitable drainage-channel 44 is formed in the ground, as shown, drainage channels or troughs being likewise provided in rear of the chambers 23.

Extending around the pulleys 34 and through tubular casings 45 to and around the pulley 9 are traction cables or elements 46,

fixed, by means of staples or other fastening devices 47, to the respective pulleys for movement with the latter, one of the cables, 46, which latter are in the form of endless belts, being crossed, as shown, thereby providing for movement of the gate in the same direction through the operation of either of the cables.

In practice the wheels of a passing vehicle contacting with either of the members 38 will, if the vehicle be approaching the gate, swing the member toward the latter and through engagement of the member with the stop 35 rotate the pulley 34 and through the medium of the corresponding cable 46 likewise rotate the pulley 9 and shaft 6, thereby swinging the gate to open position, the gate being under this operation previously unlatched in the manner heretofore explained. After the vehicle has passed the gate its wheel will contact with the other member 38 and rock the latter away from the gate, thereby causing the member through contact with the stop 36 to positively move the gate to closed position, as will be readily understood, the latch at the beginning of the closing movement being initially released from the keeper 12, as heretofore explained. If it be desired to positively open or close the gate through the medium of the primary operating members 21, the latter will when swung toward the gate, owing to the engagement of pin 33 with the slot 32, positively rotate the pulley 34 for opening the gate, or if the member 21 be swung away from the latter then the pulley will be actuated for closing the gate, both operations being in other respects identical with those above described. It is to be particularly noted that in the operation of the gate the levers 21, which are designed for the use of equestrians or persons in vehicles in opening or closing the gate, will when the latter is closed act through gravity upon the operating disks and cable upon the shaft 6 for maintaining the element 16 slack to permit the latch to fall and remain by gravity in engagement with its keeper, whereas when the gate is in open position the weight of the levers will act reversely through the intermediate parts for maintaining the element 16 under tension and holding the latch positively in engagement with the keeper 12. Furthermore, it is obvious that when the gate is closed the latch may be readily lifted by pedestrians, or if it be open the keeper 12 may be lifted by hand for releasing the latch, whereby the gate may be readily opened or closed without having recourse to the operating-levers. It may also be mentioned that the auxiliary operating member 41 permits a vehicle to turn inward to the gate without necessarily approaching and passing over the member 38, as will be readily understood.

The shaft 6 is provided at suitably-spaced intervals with transverse openings 48 for the

reception of transverse bearing-pins 49, designed to engage beneath the collars 5 for sustaining the gate in proper relative position upon the shaft, it being apparent that the vertical elevation of the gate from the ground-level may thus be varied or regulated, whereby the gate may be adapted to override snow or other obstructions, and to further this purpose the auxiliary keeper 11 is provided for engagement by the latch 14 when the gate is in its elevated position.

From the foregoing it is apparent that I produce a comparatively simple inexpensive device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. The combination with a gate, of a fixed guide supported at a point remote from the gate, a lever pivoted to swing in a vertical plane and having a seat for the reception of the guide, and operative connections between the lever and gate for moving the latter.

2. The combination with a gate, a fixed segmental guide-plate sustained at a point remote from the gate, an operating-lever pivoted to swing in a vertical plane and having a laterally-horizontal recess designed to receive the edge of the guide-plate, and operative connections between the lever and gate for the moving of the latter.

3. The combination with a gate, of a shaft sustained at a point remote from the latter, an operating member loosely pivoted on the shaft and provided with a stud, an operating-lever pivoted beneath the shaft and having a transverse guide-slot receiving the latter and an opening for the reception of the stud, and operative connections between the operating member and gate.

4. The combination with a gate, of a horizontal shaft sustained at a point remote therefrom, a rotary operating member carried by the shaft and provided with a stud, a lever fulcrumed at a point beneath the shaft and having a transverse guide-slot for the reception of the latter and a longitudinal guide-slot for the reception of the stud, a curved guide member fixed above the shaft and operatively engaged with the lever, and operative connections between the operating member and gate.

5. In a device of the class described, a shaft sustained for rotation, a gate carried by the shaft for opening and closing movement, a latch pivotally connected with the gate, an element connecting the latch and shaft, and means including an operating member for actuating the shaft to open or close the gate, the member acting by gravity to maintain the connecting element under tension when the gate is in one of said positions and to relax tension on the element when the gate is in the other of said positions.

6. In a device of the class described, a shaft sustained for rotation, a gate carried thereby, a latch pivotally connected with the gate, an element operatively connecting the latch with the shaft, and means including an operating-lever for actuating the shaft to move the gate to open or closed position, said lever being adapted by gravity to maintain the above-named element under tension when the gate is in one of said positions and to relax the tension when the gate is in the other position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE F. MOORS.

Witnesses:

J. H. JOCHUM, Jr.,

FRANK S. APPLEMAN.