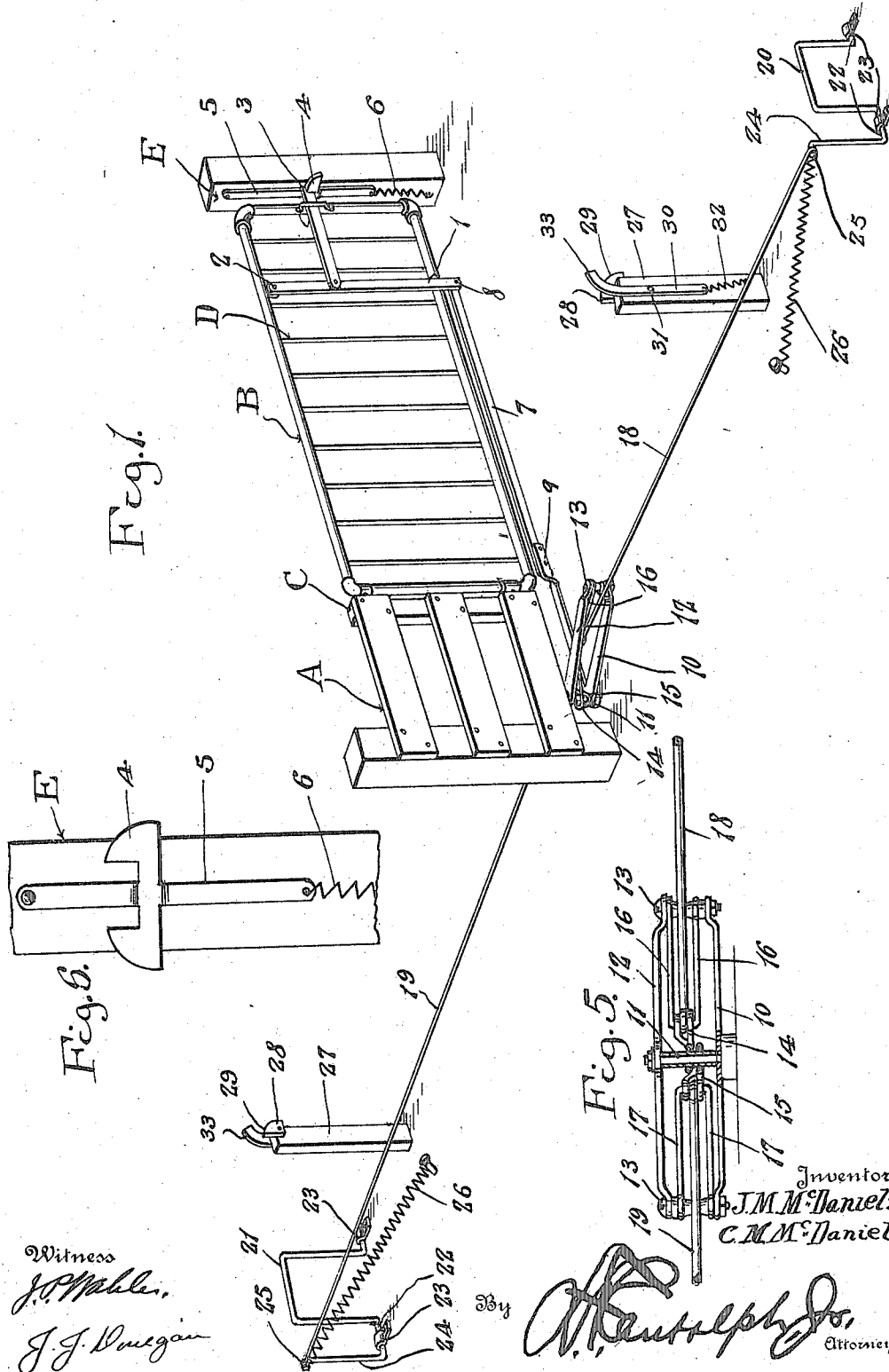


J. M. & C. M. McDANIEL.
GATE OPERATING MECHANISM.
APPLICATION FILED AUG. 9, 1916.

Patented Aug. 21, 1917.
2 SHEETS—SHEET 1.

1,237,797.



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Fig. 2.

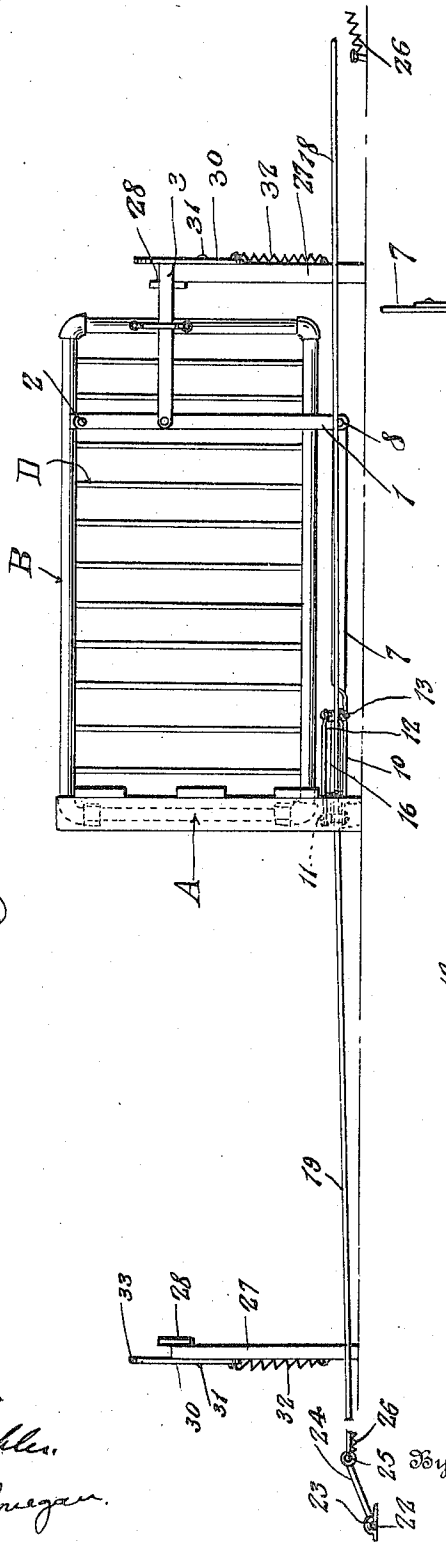


Fig. 3.

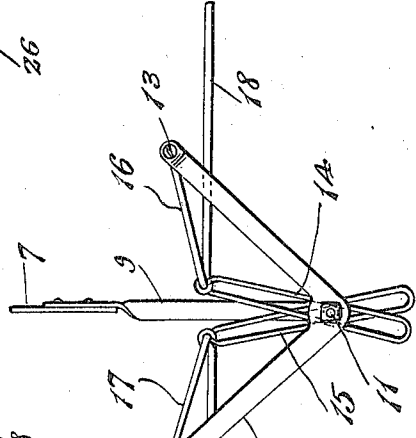
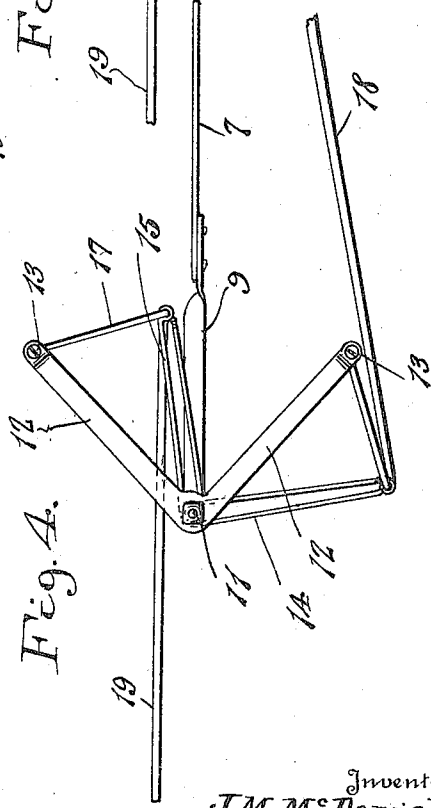


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GATE-OPERATING MECHANISM.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JAMES M. McDANIEL and CLAUD M. McDANIEL, citizens of the United States, residing at Wellington, in the county of Collingsworth and State of Texas, have invented certain new and useful Improvements in Gate-Operating Mechanisms; and we do hereby 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.

This invention relates to gate operating opening and closing mechanism, particularly that type adapted to be operated by the approach of a vehicle toward the gate so as to move the gate to open position, and to be again operated by the vehicle after the same has passed through the gate opening so as to effect closing of the gate, and an object of the invention is the provision of a more simple and durable operating mechanism that can be conveniently associated with any type of gate and will be more efficient in operation.

Other objects will appear and be better understood from that embodiment of our invention of which the following is a specification, reference being had to the accompanying drawings forming a part thereof, in which:

Figure 1 is a perspective view, showing the operating mechanism applied to a gate with the gate in closed position,

Fig. 2 is a side elevation of a gate in open position,

Fig. 3 is a top plan view of the operating mechanism removed from the gate, showing the position assumed by the gate when the gate is in closed position,

Fig. 4 is a top plan view of the mechanism shown in Fig. 3, showing the position assumed by the same when the gate is in open position,

Fig. 5 is a transverse sectional view, taken through the operating mechanism,

Fig. 6 is a detail view of the upper end of the latch post, showing the same provided with a keeper for engaging the latching mechanism on the gate when the latter is in closed position.

Referring to the drawings in detail, the letter A designates a portion of a fence having a gate opening therein, B a gate for normally closing the opening and having one

end hingedly connected to a post C. The gate includes upper and lower and opposite end panels, said upper and lower panels being connected by means of spaced bars D.

Associated with the gate B is a vertically disposed lever 1, which is located at a point adjacent the free end of the gate, and has its upper end pivoted to the upper panel of the gate by means of a pivot pin 2, and has its lower end depending a short distance below the lower panel of the gate, as shown in Fig. 1 of the drawings. A latch rod 3 has one end pivoted to the vertical link 1, at a point adjacent the upper end of the link 1 and the opposite end of the latch rod 3 terminally extends beyond the panel and the free end of the gate B. A keeper 4 is mounted on the inner surface of a latch post E, which post is arranged opposite the post C, and is provided with a central recess, and the said keeper is carried by a vertically disposed bar 5, the upper end of the bar being pivoted to the post E, adjacent the upper end of the post, and the lower end of the bar 5 has connection with the upper end of a vertically disposed coil spring 6, the lower end of the spring being connected to the inner side of the post E adjacent the lower end of the post. When the gate is in closed position, as shown in Fig. 1, the outer or free end of the latch rod 3 is received by the recess in the keeper 4, so as to prevent accidental opening of the gate. An elongated bar 7 is disposed below the lower panel of the gate B and is formed of resilient material, and extends parallel with the gate and the inner end of the bar 7 has connection with the lower end of the link member 1, by means of a pin 8. The outer or rear end of the bar 7 has connection with the inner end of an arm 9, which is disposed below the fence and gate structure, and has its outer end extended between the sides of a V-shaped element 10, and connected to the apex portion of the V-shaped element. A pivot bolt 11 extends through the apex portion of the V-shaped element 10, so as to admit of the V-shaped element having horizontal oscillatory movement. A second V-shaped element, designated 12, is disposed above and in spaced relation to the first-mentioned V-shaped element 10, and has the apex portion pivotally connected with the bolt 11 and the terminals of the sides of the V-shaped elements 10 and 12 have connection by means of pins 13. A

pair of intersecting link members 14 and 15 extend through the space between the upper and lower V-shaped elements 10 and 12 and have their inner ends connected to the inner ends of outwardly diverging links 17, the outer ends of the links 17 having pivotal connection with the pins 13 that connect the opposed terminals of the V-shaped elements 10 and 12. The link members 14 and 15 have longitudinal slots therein and the said slots receive the pivot bolt 11, as shown more particularly in Fig. 3 of the drawings.

Located, respectively, on opposite sides of the fence structure A, and extending at right angles thereto, is a pair of opposed operating rods 18 and 19. The rods 18 and 19 have those ends that are extended in the direction of the fence structure A, extending through the spaces between the opposed arms of the V-shaped elements 10 and 12 and are connected to the inner ends of the respective gate members 14 and 15, shown in Fig. 3.

The outer ends of the operating rods 18 and 19 extend considerable distances beyond the fence structure A, and have connection with operating elements 21 and 20, respectively. Each of these operating elements 21 and 20 consist of an inverted U-shaped portion having the lower ends of the sides offset laterally, as shown at 22, and rotatably positioned in bearings 23. One end of each U-shaped element is continued from the offset lateral portion 23 and extended in parallelism with the adjacent side of the U-shaped element, and terminally bent laterally, as shown at 25, and received by an eye formed in the adjacent end of the adjacent operating rod, as shown in Fig. 1.

Assuming a vehicle approaching the gate from the direction indicated by the arrow in Fig. 1, the vehicle is so guided that the forward wheels will contact with the U-shaped element 20, resulting in the said U-shaped element, being tilted in the direction of the gate B. The tilting of the U-shaped element 20 effects movement of the operating rod 18 toward the gate, and exerts a pull on the link 16, and a corresponding pull on those arms of the V-shaped elements 10 and 12 between which the outer end of the link 16 extends, so as to effect rotation of the elements 10 and 12 to move those arms which have connection with the outer end of the link 16 toward the gate. This rotation of the elements 10 and 12 results in the bar or rod 7 being flexed so as to pull the lower end of the link 1 rearwardly and cause withdrawal of the outer end of the latch rod 3 from the recess in the keeper 4, so as to unlock the gate. On continued travel of the vehicle the U-shaped element 20 will be lowered to horizontal position and effect further travel of the rod 18, so as to cause rotation of the elements 10 and 12 a half revolution and move the gate to its maximum open

position, shown in Fig. 2. After the vehicle has passed through the gate opening the vehicle is guided toward the U-shaped element 21 and contacted with the same so as to tilt the U-shaped element 21 in a direction away from the gate, causing an outward pull on the operating rod 19 and a corresponding pull on the link 17, so as to effect retrograde rotation of the elements 10 and 12 and return the same to normal position, resulting in the gate being also returned to normal position. When a vehicle approaches the gate from the opposite direction the opening and closing operation is reverse to that just described.

Contractile springs 26 have connection with the laterally extending terminals of the extended ends 24 of the U-shaped operating elements 20 and 21, and serve to return the operating elements 20 and 21 to their normal position after the gate has been moved to closed position.

A pair of spaced posts 27 are located, on opposite sides of the fence structure A and adjacent the U-shaped operating elements 20 and 21 and each of the posts has one side provided, at the upper end thereof, with a segmental plate 28 having one end projecting above the terminal of the post, and having its outer edge curved, as shown at 29. When the gate B is moved to open position, in either direction, the same will be moved against one of the posts 27, and the free end of the latch rod 3 will ride over the element 28 and engage behind the same so as to hold the gate in open position. Each of the posts 27 has one side provided with a rod 30, which has pivotal connection thereto, as at 31, and the lower end of the rod has connection with one end of the spring 32, and the upper end of the rod is curved, as shown at 33. When the gate is moved to a position so as to cause the free end of the latch rod 3 to engage behind one of the elements 28, the said free end will also engage the outer side of the curved end 33 of the adjacent rod 30, causing rocking of the arm or rod 30, so as to prevent abrupt contact between the free end of the latch rod 3 and the adjacent rear side of the element 28. When either of the U-shaped operating elements 20 and 21 are operated to move the gate to closed position, the rod 7 will be flexed so as to withdraw the free end of the latch rod 3 from in rear of the element 28, so as to release the gate and permit the same to be moved to closed position.

It will be understood that various minor changes in the construction and arrangement of parts can be had without departing from the spirit of the invention as claimed.

Having thus described our invention what we claim as new is:

1. The combination with a swinging gate, and a gate post, of a latch carried by the

gate, means on the post for engaging the latch when the gate is moved in one direction so as to hold the gate against movement, a vertically disposed lever having its upper end pivoted to the gate and its lower end depending below the gate, an elongated bar formed of resilient material disposed below the gate and having one end connected to the lower end of the lever, a rotatable element, an arm connecting the other end of the resilient bar to the rotatable element, and operating means connected to the rotating element and adapted when operated to effect rotation of the element so as to flex the resilient bar and effect the withdrawal of the latch from the means on the post to admit of movement of the gate.

2. The combination with a gate and a latch therefor, of a pair of rotatable V-shaped elements arranged in spaced relation and one above the other, means for connecting the latch to the V-shaped rotatable

elements and including an arm extending between the apices of the V-shaped elements, a pair of slotted intersecting links located between the V-shaped elements, a bolt extending through the apex portions of the V-shaped elements and through the slots in the links, links pivotally connected between the opposing sides of the V-shaped elements at the outer ends thereof, and having connection with the first mentioned links, and oppositely extending operating rods having connection with the points of connection between the first and second mentioned links.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES M. McDANIEL.
CLAUD M. McDANIEL.

Witnesses:

S. W. JOHNSON,
R. M. HORN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."