No. 884,188. PATENTED APR. 7, 1908.

W. H. MITCHELL.

GATE.

APPLICATION FILED NOV. 30, 1907.

2 SHEETS—SHEET 1.

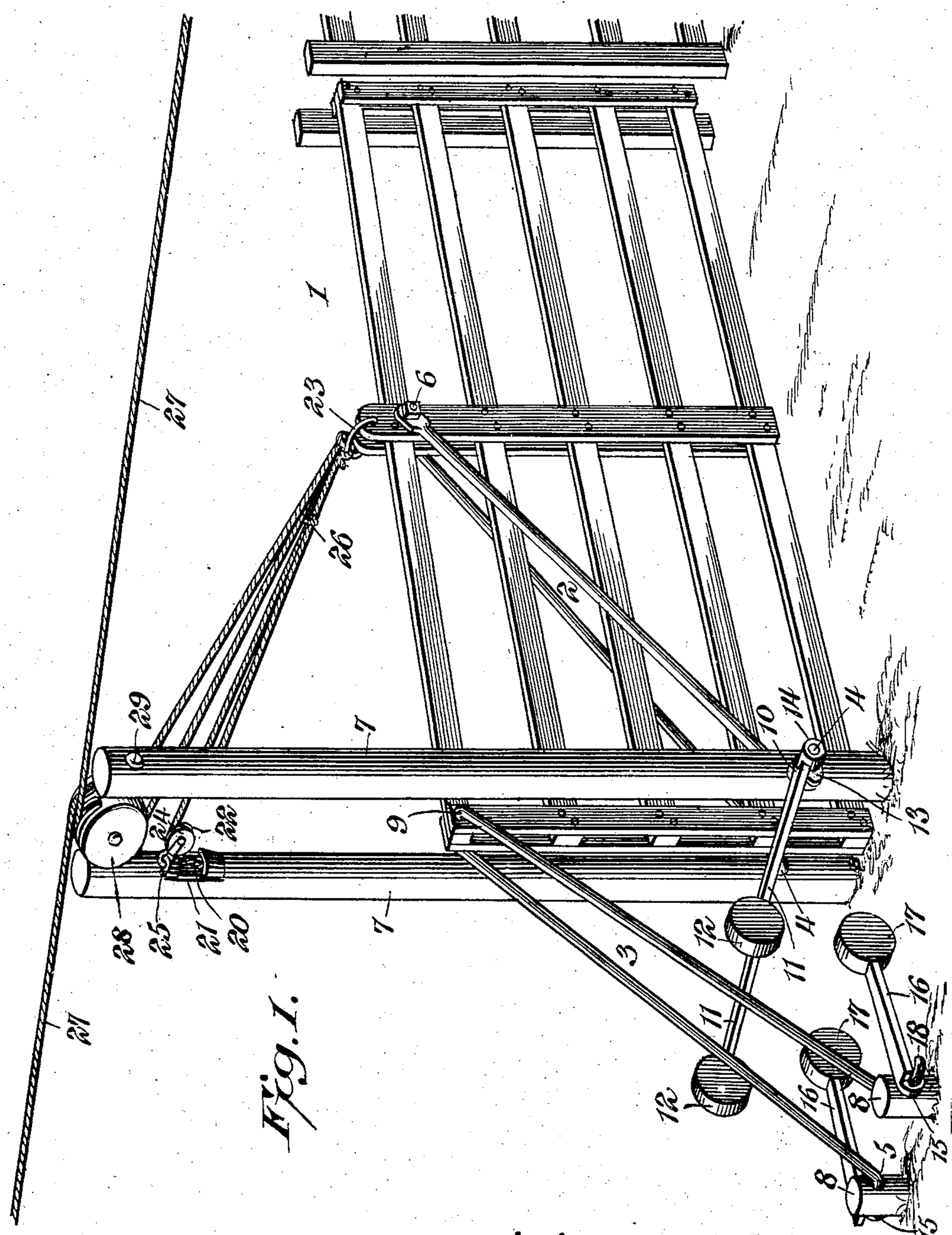

Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

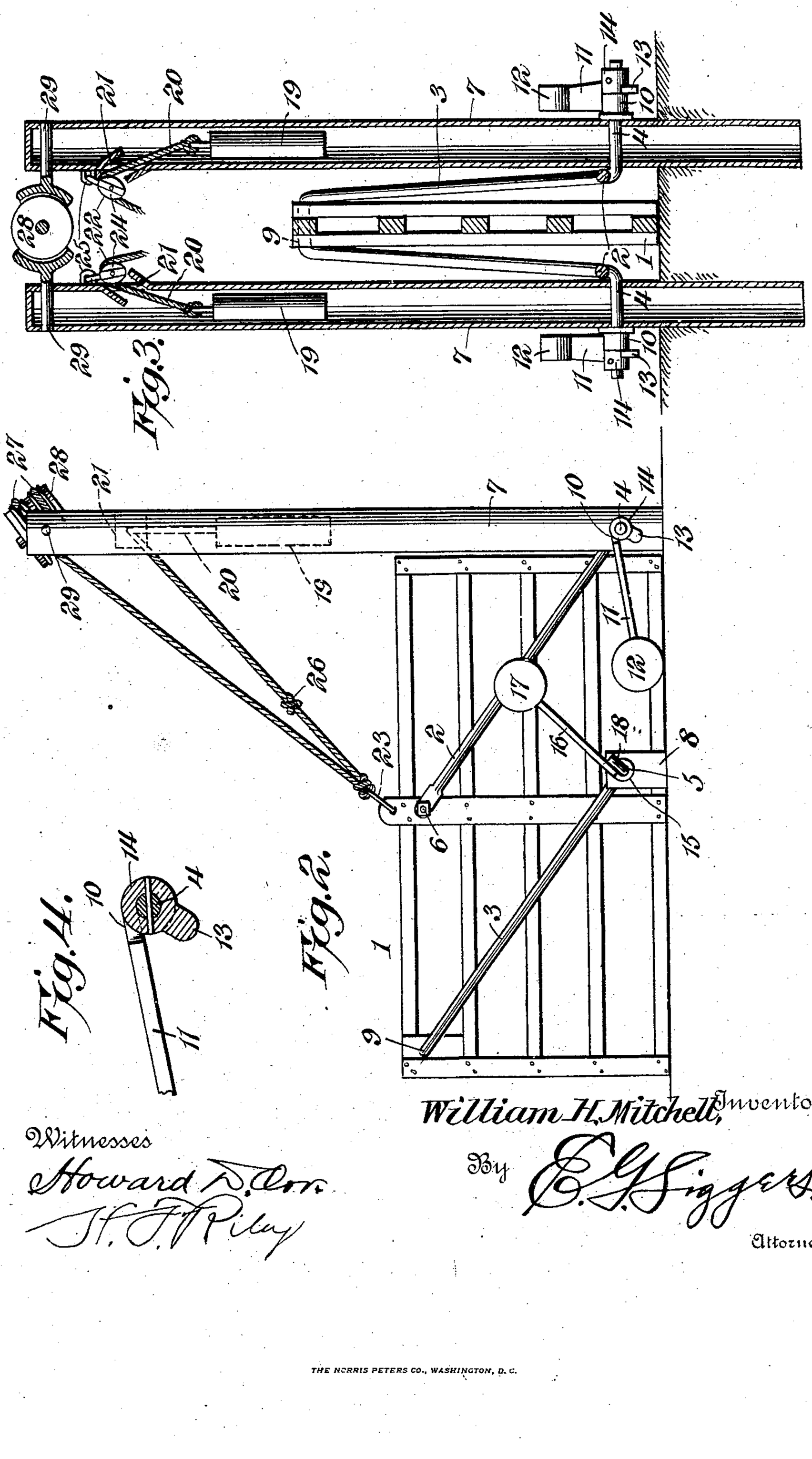

Fig. 3.

Fig. 2.

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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GATE.

No. 884,188. Specification of Letters Patent. Patented April 7, 1908.

Application filed November 30, 1907. Serial No. 404,565.

To all whom it may concern:

Be it known that I, WILLIAM H. MITCHELL, a citizen of the United States, residing at Aurora, in the county of Hamilton and State of Nebraska, have invented a new and useful Gate, of which the following is a specification.

The invention relates to improvements in gates.

The object of the present invention is to improve the construction of jump gates, and to provide a simple, inexpensive and efficient device for assisting the movement of the gate in opening and closing the same, and for cushioning the gate at the completion of the opening and closing movements thereof to prevent injury to the gate.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a gate, constructed in accordance with this invention and shown closed. Fig. 2 is a side elevation of the same, the gate being open. Fig. 3 is a transverse sectional view. Fig. 4 is an enlarged detail sectional view, illustrating the manner of mounting the front oscillatory weighted arms.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a jump gate, designed to be constructed of any suitable material and connected with front and rear oscillatory gate-carrying members 2 and 3, arranged in pairs and pivotally connected at their upper ends to the gate at the top thereof, and provided at their lower ends with laterally extending pivots 4 and 5. The front oscillatory gate-carrying members consist of bars, provided at their upper ends with perforations for the reception of a bolt 6, which pierces the top of the gate near the center thereof. The laterally extending pivots of the lower ends of the front members 2 are arranged in suitable bearing openings of a pair of hollow posts or uprights 7, located at opposite sides of the gate and arranged at the rear ends thereof when the gate is open, as illustrated in Fig. 1 of the drawings.

The rear oscillatory gate-carrying members 3 are connected at their upper ends to the top of the gate at the rear end thereof, and the laterally extending pivots of their lower ends are mounted in bearing openings of short posts or supports 8, spaced apart and located in rear of the posts or uprights 7. The rear gate-carrying members may in practice be constructed of lighter material than the front gate-carrying members, which are subjected to the entire weight of the gate, and the said rear gate-carrying members may be constructed of a single piece of rod metal, as illustrated in Fig. 2 of the drawings, the material being bent at an intermediate point by a top pivot portion 9, which pierces the gate.

The front laterally extending pivots receive eyes 10 of oscillatory arms 11, which are provided at their outer ends with weights 12. The arms 11 extend rearwardly from the front pivots 4, and they are adapted to be engaged by lugs 13 of the front pivots during the latter half of the closing movement of the gate. The lugs 13 are formed integral with collars 14, which are suitably fixed to the front pivots. The front arms 11, which extend rearwardly from the pivots when the gate is in its closed position, project in the opposite direction from the front carrying members 2 and are adapted to retard the closing movement, and thereby prevent the gate from striking the ground too hard. The laterally extending pivots 4 form the pivots for the weighted arms 11, which are inactive during the latter half of the opening movement of the gate.

The laterally extending pivots 5 extend through eyes 15 of the arms 16, which extend forwardly from the pivots 5. The arms 16 are provided at their front ends with weights 17, and they come into play during the latter half of the opening movement of the gate. The rear pivots are provided with lugs 18, formed by bending the terminals of the pivots forwardly, but the lugs may be constructed in any other preferred manner. The eyes of the front and rear weighted arms 11 and 16 are recessed or cut away at their outer sides to permit the body portions of the arms 11 and 16 to over-hang the lugs 13 and 18. When the gate is open,

the rear arms 16 rest upon the ground, or other supporting surface, and the lugs 18 extend downwardly at an inclination and are spaced from the arms 16, and do not engage the same until the gate approaches the center of its movement at which time the forwardly extending arms are completing their movement.

The hollow posts or uprights form housings or casings for vertically moving weights 19, which are connected to ropes 20, or other suitable flexible connections, extending upwardly from the weights and passing through openings 21 and over guide pulleys 22. The ropes 20 extend from the pulleys to the center of the central portion of the top of the gate, and are connected with the same by means of a link 23, or other suitable means. The pulleys 22 are mounted in blocks 24, provided with eyes linked into suitable eyes 25 of the posts or supports, whereby the pulley blocks 24 are movably connected with the posts to prevent the ropes 21 of the weights from binding when the gate is carried from its closed position in advance of the posts or uprights 7 to its open position in rear of the same. The ropes 22 are connected between their ends at 26, which, when the connection 26 arrives opposite the pulleys, forms a stop for limiting the further downward movement of the weights and relieves the gate of the said weights 19, so that the latter will not retard the gate while passing over the dead center. The hollow posts or supports are provided at the openings 21 with inclined portions to prevent the ropes from binding against the posts or supports at the edges of the openings.

The gate is operated by suitable ropes 27, extending in opposite directions from a guide 28 and designed to have their outer portions arranged in suitable supports (not shown), so that the gate may be opened at a distance from either side of it. The guide 28 consists of a casing receiving two pulleys and provided with pivots 29, which are mounted in suitable perforations of the posts or uprights at the top thereof to permit the guide to oscillate and conform to the opening and closing movement of the gate. In the opening movement of the gate, the guide 28 swings from the position illustrated in Fig. 1 of the drawings to that shown in Fig. 2, the ropes being extended downwardly and rearwardly from the posts or uprights when the gate is open. The operating ropes pass around the pulleys of the pivot gate 28 and extend from the same above the posts or uprights 7. Either of the operating ropes is adapted to be pulled for either opening or closing the gate, and the momentum of the gate carries the same beyond a central position. As the weights partially counter-balance the gate and assist the starting of the same in both the opening and closing movements very little force is required to operate the gate.

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

1. The combination with a gate, of oscillatory gate-carrying members, and weighted oscillatory arms arranged to be alternately actuated by the said members.

2. The combination with a gate, of oscillatory gate-carrying members, oscillatory weighted arms, and means connected with the said members and arranged to alternately engage the arms during the opening and closing movements of the gate to assist the starting of the gate and to retard the same at the end of its movement.

3. The combination with a gate, of oscillatory gate-carrying members, oscillatory weighted arms extending in opposite directions, and lugs or projections connected with the said members for alternately engaging the arms.

4. The combination of a gate, front and rear oscillatory gate-carrying members provided at their lower ends with laterally extending pivots, weighted arms mounted on the said pivots, and means connected with the pivots for alternately engaging the weighted arms.

5. The combination of a gate, front and rear oscillatory gate-carrying members provided at their lower ends with laterally extending pivots, weighted arms mounted on the said pivots, and lugs or projections extending from the pivots and arranged to engage the arms.

6. The combination of hollow posts, a gate, front and rear oscillatory gate carrying members weights located within the posts, guides mounted on the posts, flexible connections arranged in the guides and connected with the weights and with the gate, weighted oscillatory arms, and means connected with the said members for alternately engaging the arms.

7. The combination with a gate, of oscillatory gate carrying members, and oscillatory weighted arms extending in opposite directions and arranged to be alternately oprated by the said members.

8. The combination of a gate, front and rear oscillatory gate carrying members provided at their lower ends with laterally extending pivots, and weighted arms mounted on the pivots and arranged to be alternately operated by the said members.

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

WILLIAM H. MITCHELL.

Witnesses:
ANDREW GROSSHANS,
A. E. ROGERS.