(No Model.) 2 Sheets—Sheet 1.

W. CHATER.

GATE.

No. 430,246. Patented June 17, 1890.

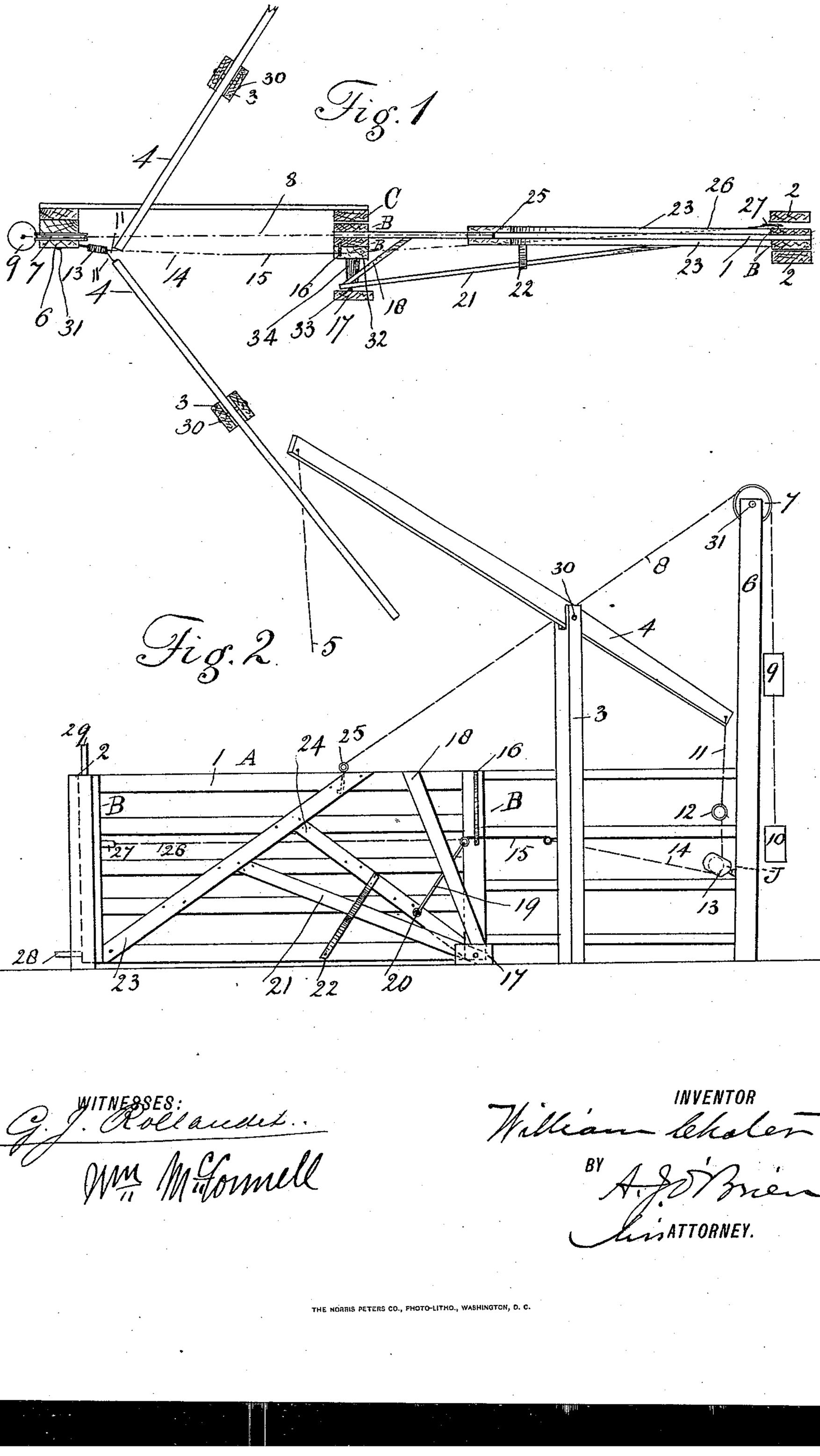

Fig. 1.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

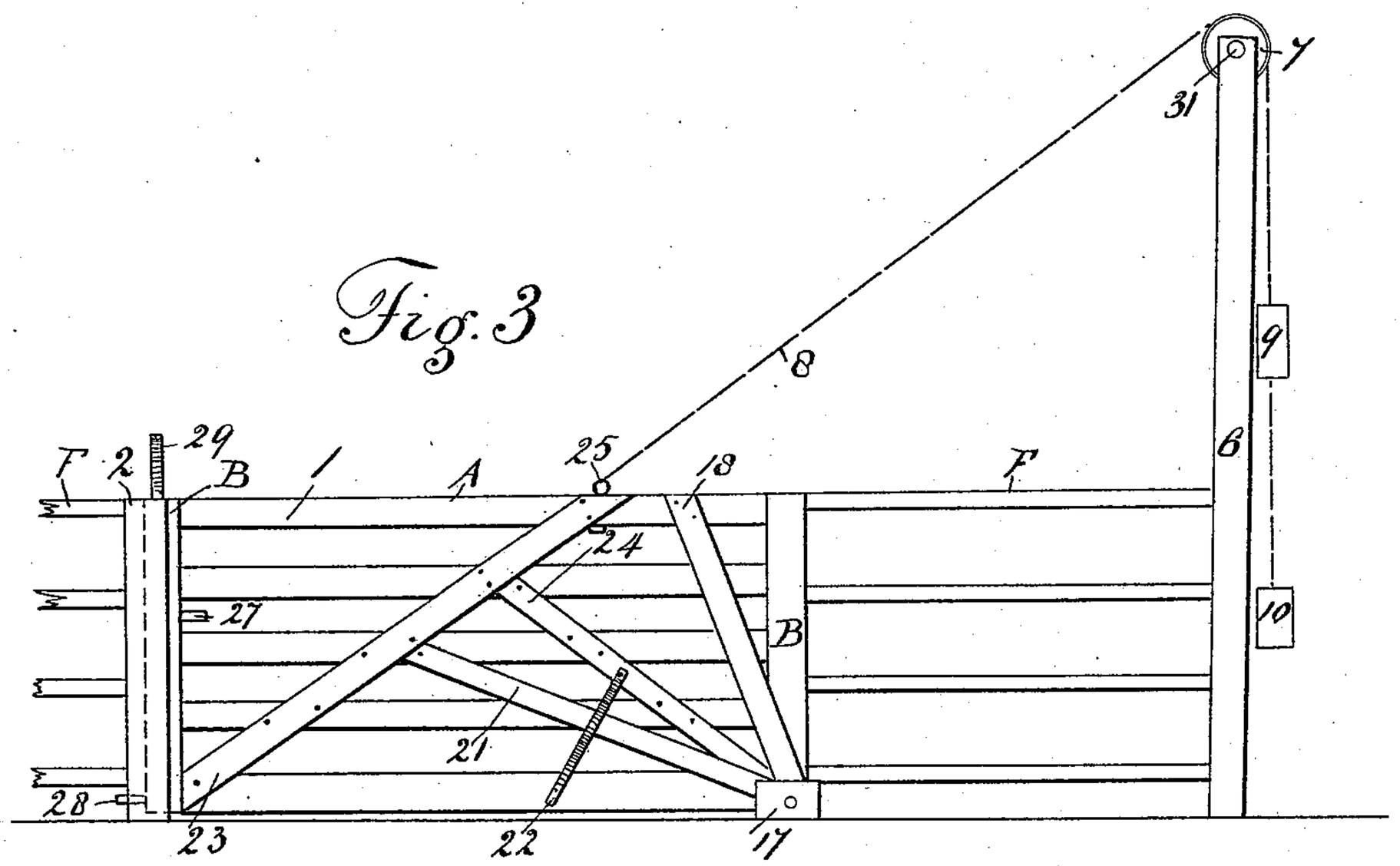


Fig. 4

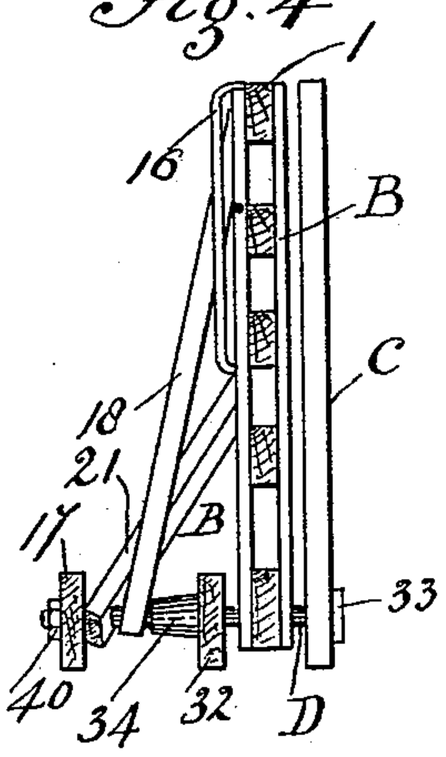


Fig. 5

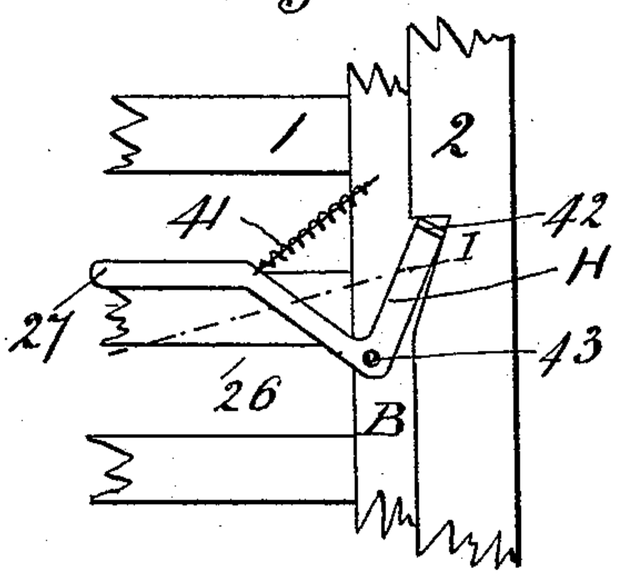
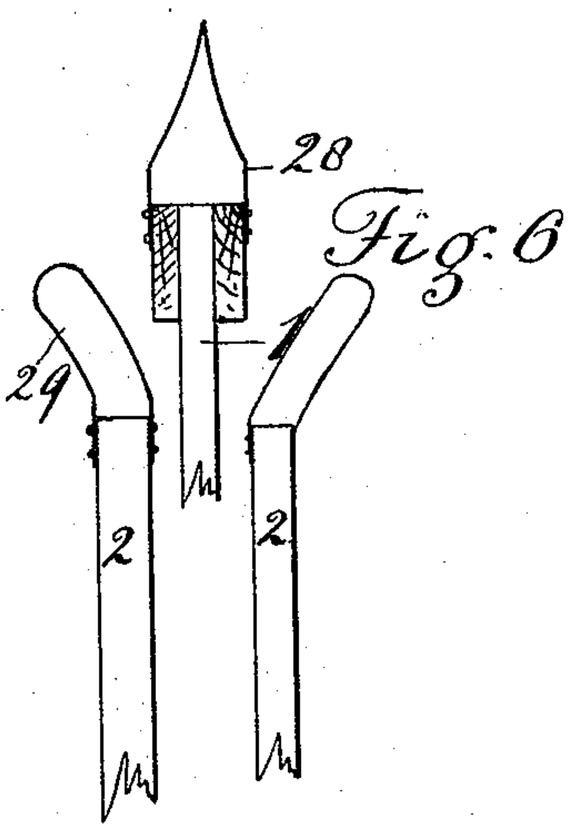


Fig. 6



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UNITED STATES PATENT OFFICE.

WILLIAM CHATER, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO WILBUR W. HOWARD, OF SAME PLACE.

GATE.

SPECIFICATION forming part of Letters Patent No. 430,246, dated June 17, 1890.

Application filed February 13, 1890. Serial No. 340,366. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHATER, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Gates; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in farm-gates of the class designed to be opened and closed by equestrians or by persons in vehicles, as well as by pedestrians; and the object of the invention is to provide a gate of the class stated which shall be simple in construction, economical in cost, easily operated, reliable, durable, and effective.

To these ends my invention consists of the features, arrangements, and combinations hereinafter described and claimed.

In the drawings is illustrated an embodiment of the invention, in which drawings—

Figure 1 is a top or plan view of my improved gate provided with the necessary attachments, fitting it for operation by persons in vehicles or on horseback. Fig. 2 is a side view or elevation of the same. Fig. 3 is a side view of my improvement rigged as a hand-gate or to be operated by a person standing upon the ground. Fig. 4 is a rear end view of the gate. Fig. 5 is a detail view, on an enlarged scale, illustrating the latch. Fig. 6 is a front end view in detail, illustrating the gate descending and the guides attached to the posts, by means of which the gate is surely directed to its proper position when closed.

In the views, let the reference-letter A designate the body of the gate, which may be of any suitable construction; but as shown in the drawings it consists of the longitudinal parallel wooden slats 1, secured at each end between two vertical slats B, to which the slats 1 are fastened.

23 and 24 are stays or cleats secured obliquely across the slats 1 on each side of the gate.

C is a post suitably secured to or set firmly within the ground. To the bottom of post C the gate is pivoted by means of a pin, bolt, or rod D, which passes through post C, the rear slats B B, and the rear end of the lowest slat 1 of the gate.

32 is a short post placed between the gate and post 17.

18 and 21 are braces secured at their rear extremities to pin D and at their opposite extremities to the slats 1 of the gate, brace 18, as shown in the drawings, being secured to the top slat 1 near the rear of the gate and brace 21 to a central slat 1 a little forward of the longitudinal center of the gate. The exact place of securing the forward extremities of these braces, however, is not material, the object being to add strength and stability to the gate.

22 is a metal strap passing over the brace 21 midway between the extremities of the brace, the ends of the strap being made fast to the gate, as shown. This strap serves to strengthen the brace 21.

17 is a short post, through which pin D passes. A nut 40 is screwed upon one extremity of pin D and engages post 17.

The rear extremities of braces 18 and 21 are contiguous at the point where they are secured to pin D, the position of these braces on said pin being between post 17 and an enlargement 34, formed integral with or consisting of a collar secured to the central portion of pin D. Enlargement 34 is located upon pin D between the rear extremity of brace 18 and post 32. 33 is the head of the pin D and engages the outside of post C.

The gate, together with the braces 18 and 21, may be rigidly secured to pin D, or this pin may be fixed or made fast within posts 17, 32, and C, as may be desired.

The gate, as shown in the drawings, is illustrated as closing a gap or opening in a fence F, a portion of which fence is shown at the end of the gate in Figs. 1, 2, and 3.

2 2 are posts set firmly within or secured to the ground at a suitable distance apart to receive and retain the forward extremity of the gate when closed, as shown. To the top of each post 2 is secured a guide 29, extending obliquely upward and outward from the

space between the posts. The use of guides 29 is to direct the forward extremity of the gate surely between posts 2, even though the gate may in its descent deviate from its true course under the influence of a heavy wind or from any other cause. The lower forward portion of the gate is provided with a wedge-shaped or pointed device 28, designed to engage the guides 29 if as the gate descends it should be swerved from its true course.

H is the latch of the gate. This latch is pivotally secured to the forward vertical slat B by the pin 43, and has the shape of a bell-crank lever, the pivot 43 forming the fulcrum of the lever. The extremity 42 of one arm of the lever engages a suitable notch in one of the posts 2, as shown.

41 is a spring secured to the vertical slat B at one extremity and to the latch at the opposite extremity. This spring holds the latch securely in position when the gate is closed.

27 is the hand-piece of the latch. This handle is designed for use when the gate is operated by a person standing upon the ground and in connection with the mechanism illustrated in Fig. 3, the gate being unlatched by pressing downward upon this handle.

6 is a post considerably higher than the gate and set securely within the ground in a line with the direction of the gate's length and at a distance from the rear extremity of the gate when the gate is closed equal to a little more than the height of the gate, since when the gate is open it stands upon its rear extremity between its pivoted point on pin D and post 6. This post is preferably not vertical, but deflected obliquely backward from its base, for a reason hereinafter described. Within a slot cut in the top of the post 6 is secured a pulley 7 by means of a pivot 31.

8 is a cord, rope, chain, or cable of any desired strength, secured at one extremity to an eye 25 of a bolt secured to the top of the gate, as shown, thence passing over the pulley 7, and hanging vertically on the opposite side of post 6. This free extremity of the rope or cable 8 is provided with one weight 10, another weight 9 being secured to the rope at a suitable distance above weight 10 on the rear side of the post.

The inclination of post 6, heretofore referred to, should be such that weights 9 and 10, hanging on rope 8 over pulley 7 and moving up and down during the operation of the gate, will not engage the post, but will at all times hang free and clear therefrom.

All the parts illustrated in the form of gate shown in Fig. 3 or that designed to be opened by a person standing upon the ground have now been described. In operating this form of gate the handle 21 of the latch is pressed upon sufficiently to disengage the latch from post 2 and then the gate is raised slightly, when the weights 9 and 10 act to complete the opening of the gate by drawing it up and standing it upon its rear end, as heretofore mentioned. Both weights act at first and until the weight 10 reaches the ground, when the opening process is completed by weight 9. The size of the weights and their location upon the rope 8 may be regulated as desired. The weights 9 and 10 should consist, however, of suitable receptacles secured to the rope and filled or provided with weights or bodies of varying sizes, in order that the gravities of the receptacles may be nicely adjusted.

It remains to describe the additional features or attachments necessary to change the mechanism shown in Fig. 3 to that shown in Figs. 1 and 2, in which the mechanism is designed to be operated by a person sitting on horseback or in a vehicle.

Two posts 3 3 are erected, one on each side of the gate and to one side of the driveway in approaching the gate. To the top of the posts 3 are pivoted at 30 the levers 4 4, the posts 3 forming the fulcrums of the levers. To the inner extremities of each of these levers is secured a cord or rope 11, which cords unite at a point 12 a suitable distance below the inner extremities of the levers, and thence continue as one cord 14 under a sheave 13, (shown by dotted lines in the block J,) made fast to post 6 at a suitable point. Cord 14 continues forward to rod 15, and is secured to an eye formed in the rear extremity of said rod. The forward extremity of rod 15 is provided with another eye and is here united to the upper extremity of another rod 19, the union of these two rods being such that the extremities turn readily upon each other. The lower extremity of rod 19 is suitably pivoted to the cross-bar 24, as shown. To the joint formed by uniting rods 15 and 19 is secured a cord 26, which extends forward and is secured at its opposite extremity to the latch H at a suitable point. To the outer extremity of each lever 4 is secured a cord 5 of sufficient length to be within easy reach of a person sitting upon a horse or in a vehicle.

16 is a metal strap secured to the vertical slat B of the gate and acting as a guide to rods 15 and 19 during the operation of the gate.

From the foregoing explanation the operation of my improved device will be readily understood.

The person sitting on a horse or in a vehicle and desiring to open the gate rides up to within reach of one of the cords 5, which cord he pulls. This action first unlatches and then raises the gate by virtue of the mechanism heretofore described.

It will be observed that very little strength is required to operate the gate, since as soon as the latch is drawn from the engaging-notch the weights 9 and 10 begin to act.

It is not deemed necessary or desirable or practicable to state in this specification the exact length of time or during what portion of the operation of opening the gate power should be applied to the cord 5, or, what is the

same thing, to the lever 3. It is safe to say, however, that the pull need not be continued until the gate is half open, since if the lever 4 is released when the gate is nearly half open the momentum of the gate, together with the weights upon the cord 7, will certainly complete the operation.

It will be observed that if the weights 9 and 10 continued to act until the gate was open or in an upright position the rear end of the gate would strike the ground, going at a rapid rate and with a jar or concussion of considerable violence; hence the weights are so regulated that when the gate is about half open weight 10 strikes the ground and ceases to act. It will be observed that the point of connection of cord 8 with the gate is so chosen that before the latter reaches an upright position the said point will reach the limit of its approach to pulley 7 and begin to recede therefrom.

After a person has driven through to the opposite side of the gate the rope or cord 5 on that side is pulled gently and released, which throws the gate over to a closed position.

Having thus described my invention, what I claim is—

1. In a gate, the combination, with the body part 1, suitably pivoted at its rear lower corner to a stationary base, a post 6, somewhat higher than part 1 and in the rear thereof, post 6 being provided with a pulley 7, a cord or rope 8, secured to part 1, passing over pulley 7, and provided with weights 9 and 10, secured thereon at different elevations, and posts 3 3, one on each side of the gate, of the levers 4, having posts 3 for their fulcrums, a cord 11, passing from the inner extremity of each lever 4 to a point 12, where the cords 11 merge into a single cord, passing thence over a sheave secured to post 6, and thence by means of suitable connections to the latch H and to a suitable point 20 on part 1 for lifting the gate, and cords 5, or their equivalents, affording means for operating levers 4, substantially as described.

2. In a gate, the combination, with the body part 1, suitably pivoted at its rear lower corner to a stationary base, of a post 6, provided with a pulley 7, and a rope or its equivalent 8, secured to part 1, passing over pulley 7 and provided with weights 9 and 10, secured thereon at different elevations, substantially as described.

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

WILLIAM CHATER.

Witnesses:
ISHAM R. HOWZE,
WM. MCCONNELL.