(No Model.) 2 Sheets—Sheet 1.

W. D. WILSON.

SWINGING GATE.

No. 590,870. Patented Sept. 28, 1897.

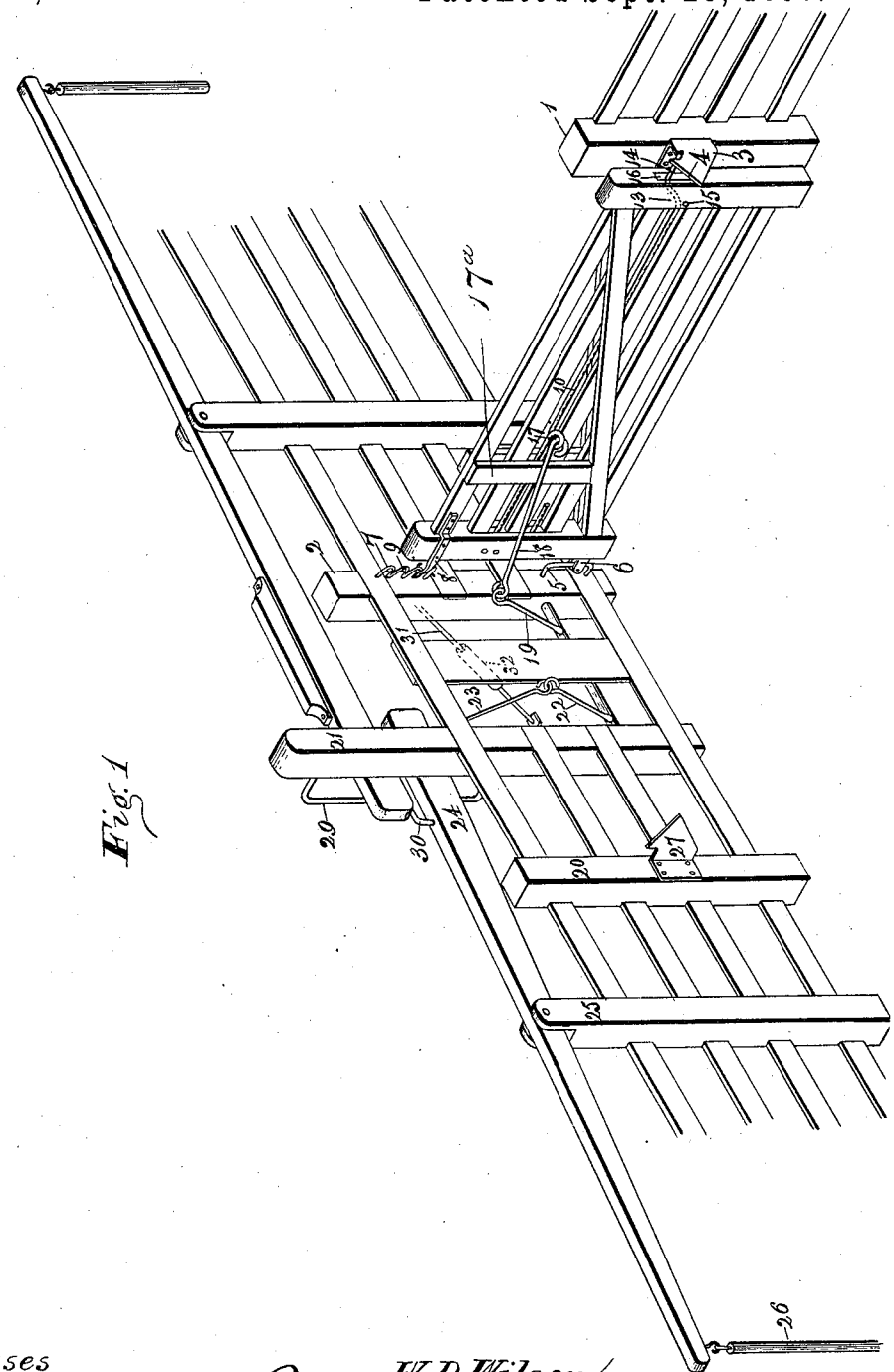


Fig. 1

Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

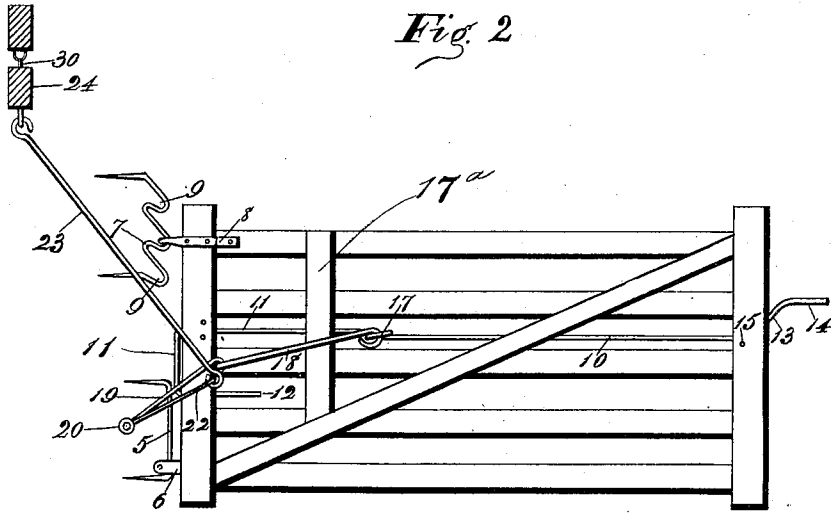


Fig. 3

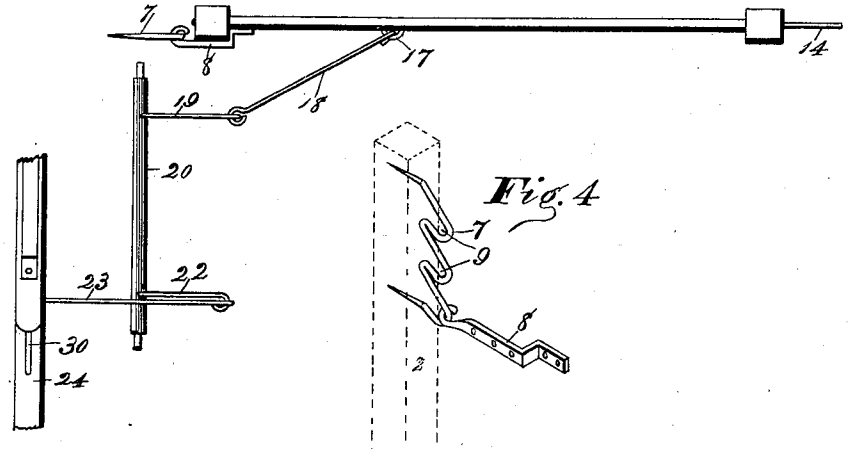


Fig. 4

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UNITED STATES PATENT OFFICE.

WILLIE DURFFEE WILSON, OF SIDNEY, ILLINOIS.

SWINGING GATE.

SPECIFICATION forming part of Letters Patent No. 590,870, dated September 28, 1897.

Application filed December 17, 1896. Serial No. 616,098. (No model.)

To all whom it may concern:

Be it known that I, WILLIE DURFFEE WILSON, a citizen of the United States, residing at Sidney, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Swinging Gates; and I 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.

My invention relates to certain new and useful improvements in swinging gates, and has particular reference to that form of gate which is automatically actuated from a more or less distant point.

The details of construction involved in my invention will be fully set forth in the following specification and illustrated in the accompanying drawings, made a part of this application.

The object of my invention is the provision of a simply-constructed locking device or latch which may readily be applied to gates of the usual or any preferred construction, rendering it promptly responsive to a slight downward pull upon a lever disposed at a convenient point, as will be fully set forth.

A further object is to so mount the gate that it may be readily adjusted at a desired point through the mediation of the hinges which I have provided.

It may be stated that the essential feature of value of my invention resides in the fact that I have provided a peculiar form of latch and means consisting of a rocking shaft for controlling the same.

In the accompanying drawings, Figure 1 is a perspective view of my invention in its complete operative condition. Fig. 2 is a detailed side elevation of the gate and its actuating mechanism separated from the other parts. Fig. 3 is a top plan view of Fig. 2. Fig. 4 is a detailed perspective view of the hinges.

For convenience of reference the various details will be designated by figures, each referring to the same part throughout the several views.

In carrying out my invention the gate-posts proper, 1 and 2, are erected at a convenient distance apart substantially in the uusal manner, the former being provided with the keeper 3, adapted to receive upon its inclined or beveled edge 4 the latch secured to the gate. The post 2 is provided near its lower end with the guide or staple 5, adapted to be encircled by a suitable form of eyelet or collar 6, secured near the lower end of the end of the gate. The post 2 is also provided near its upper end with the graduated holder 7, located immediately above the guide or staple 5 just referred to and designed to permit a vertical adjustment of the gate by causing the retaining-hook 8, secured to the upper part of the gate-frame, to be engaged with any preferred one of the graduated seats 9.

A gate of the usual or any preferred construction is mounted in position upon the hinge just described, so as to coöperate with the posts 1 and 2, and is provided with the reciprocatory latch 10, preferably extending from one end of the gate to the other between central bars thereof and provided with the section 11 and the anchoring end 12, the latter being preferably arranged to lie parallel with the latch proper and reaching loosely through an aperture provided for it. The outer end of the latch is designed to extend past the gate-frame after passing through a suitable aperture into engagement with the keeper. I prefer to so bend the latch that the outer end 14 thereof will lie in a higher plane than the remaining portion. By thus forming upon the free end of the latch the upper extending section 13 and the terminal section 14 I provide for the elevation of the end of the latch that it may engage and cooperate with its keeper. This elevation of the free end of the latch is effected by a transverse bolt or pivot-point 15, extending through the gate-frame and the aperture 16 provided therein. By this arrangement the latch may be freely reciprocated in its aperture and between the bars of the gate, bringing the inclined section 13 into engagement with the bolt 15, causing the latch to ride up and down as the same is moved backward and forward.

In order that the latch may be cheaply and readily constructed, it is preferably formed of a piece of wire of suitable character shaped in the manner specified and provided near its

inner end with the overlapping section or loop 17, providing a pivotal point for the arm 18. Said arm being attached by its outer end to said loop is connected at its other end with the crank 19, while the opposite end of said crank is rigidly secured to the rocking shaft 20, provided with suitable bearings in the posts 2 and 21. The crank 19 is secured to said shaft at a point thereon contiguous to the gate, while to the opposite end of said shaft I rigidly secure the operating-crank 22, designed to form pivotal connection with the controlling-arm 23, pivoted at its upper end to the beam 24. It will be seen that the controlling-arm 23 and the operating-crank 22 practically form a toggle-joint, while the same may be said with respect to the crank 19 and the arm 18.

The beam 24 is so pivoted in position upon the post 25 that its inner end will lie immediately over the controlling-lever with which it is connected by means of the arm 23, as above specified, and by this arrangement it will be readily appreciated that a downward pull upon the handle 26, attached to the outer end of said beam, will result in the elevation of its inner end, bringing the operating-crank 22 into a vertical position and incidentally partly rotating the rocking shaft 20, thus causing the crank 19 to draw upon the latch through the intermediation of the link 18, resulting, first, in a withdrawal of said latch from engagement with its keeper, and, secondly, causing the gate to swing around into engagement with the keeper 27, provided upon the retaining-post erected at a convenient point to perform this office.

It will be understood that a pair of beams 24 and posts 25 may be provided, each designed to perform the office of opening and closing the gate from opposite sides thereof. Said beams are preferably so constructed and mounted in position upon their respective posts that the inner ends thereof will be held by gravity in a depressed position, tending to cause the point of connection between the levers and arms to pass the dead-center both during the opening and closing process of the gate, adding further to the security of its position, thus reinforcing the action of the latch. It will of course be understood that where it is not convenient to form the inner ends of the beams of such size as will cause them to be normally depressed a counterpoise consisting of any suitable weight may be added to the inner ends of said beams. If deemed necessary, the upper end of the post 21 may be extended and provided with the guide or loop 29, intended to receive the inner ends of the beams and hold them one above the other to their work. By this arrangement one of the beams may be pivoted directly to the arm 23, while the other beam may be pivoted to a loop or guide section 30, thus compensating for the movement due to the elevation and depression of said beams.

The operation of my improved automatic gate may be stated to be as follows: The party desiring to pass through the gate may approach from either side and without dismounting from his horse or leaving the vehicle may grasp the operating-handle 26 and give a sharp downward pull thereto. This action causes the pivot end of the operating-crank 19 to act upon the arm 18 and the latch 10, withdrawing the outer end thereof from engagement with the keeper secured to the post 1. The first or partial withdrawal of the latch disengages it from its keeper, while the continued pull withdraws the latch still farther, until the loop 17 contacts with the stop 17^a, causing the gate to be swung around toward the keeper 27, upon the inclined face of which the end of the latch is adapted to ride and be secured.

During the process just referred to of opening the gate it will be understood that when the operating-lever is brought into a vertical position its upper end will pass the dead-center, causing the weight of the inner ends of the beams when the operating-handle is released to rest thereon, when the impetus given to the gate in the initial act of opening it will force the upper end of said lever past the dead-center, causing the weight of the beams to automatically continue and complete the opening process. The gate being thus opened admits of the free passage of the vehicle, when a downward pull of the other lever will actuate the operative devices and close the gate.

By the means which I have provided and fully set forth in the foregoing specification it will be seen that a reliable means has been provided for holding the gate in a securely-locked position both when it is opened and closed, preventing the damage often resulting from leaving a gate in an open condition, free to move as the wind may direct. The gate may be easily raised or lowered to compensate for varying conditions of the roadway or for a settlement or leaning propensity of the gate-post by simply lifting the gate into a higher or lower notch formed by the graduated hinge. If deemed necessary, the post provided to sustain the weight of the gate may be reinforced by securing or anchoring at a suitable point the lower end of the rod 31, the outer end of which is connected to the upper end of said post. In order to take up any slack upon the said rod, I provide the turnbuckle 32, the ends of which are provided in the usual manner with a right and left screw-thread, connecting it with said rod.

Having thus described the construction, operation, and advantages of my improved gate, what I claim as new, and desire to secure by Letters Patent, is—

1. A swinging gate provided with a reciprocating latch extending through the entire gate-frame, having its front part curved upward to form a latch, and its rear part curved downward and forward to limit the forward

movement of the latch and afford a secure anchorage for the same, and means to operate the gate, as set forth.

2. A swinging gate provided with a reciprocating latch extending through the entire gate, and having a loop in its body part, a stop at the rear of the loop, a link connecting the loop and a crank-arm, and means to operate said gate.

3. A swinging gate, having a reciprocating latch composed of a single rod twisted to form a loop in its body part, said latch extending through the entire gate-frame, and curved downward and forward at its rear end, a stop at the rear of said loop to limit the movement of the latch and open the gate, and means to operate the same, as set forth.

4. A swinging gate having a reciprocating latch provided with a loop, a stop on said gate against which the loop strikes to open the gate and means connected with the loop to operate the gate, as set forth.

5. A vertically-adjustable swinging gate provided with a collar and a retaining-hook and a gate-post having a staple and a graduated inclined holder having seats, all arranged and combined as set forth.

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

WILLIE DURFFEE WILSON.

Witnesses:
JAMES M. JOHNSTON,
J. W. BOCOCK.