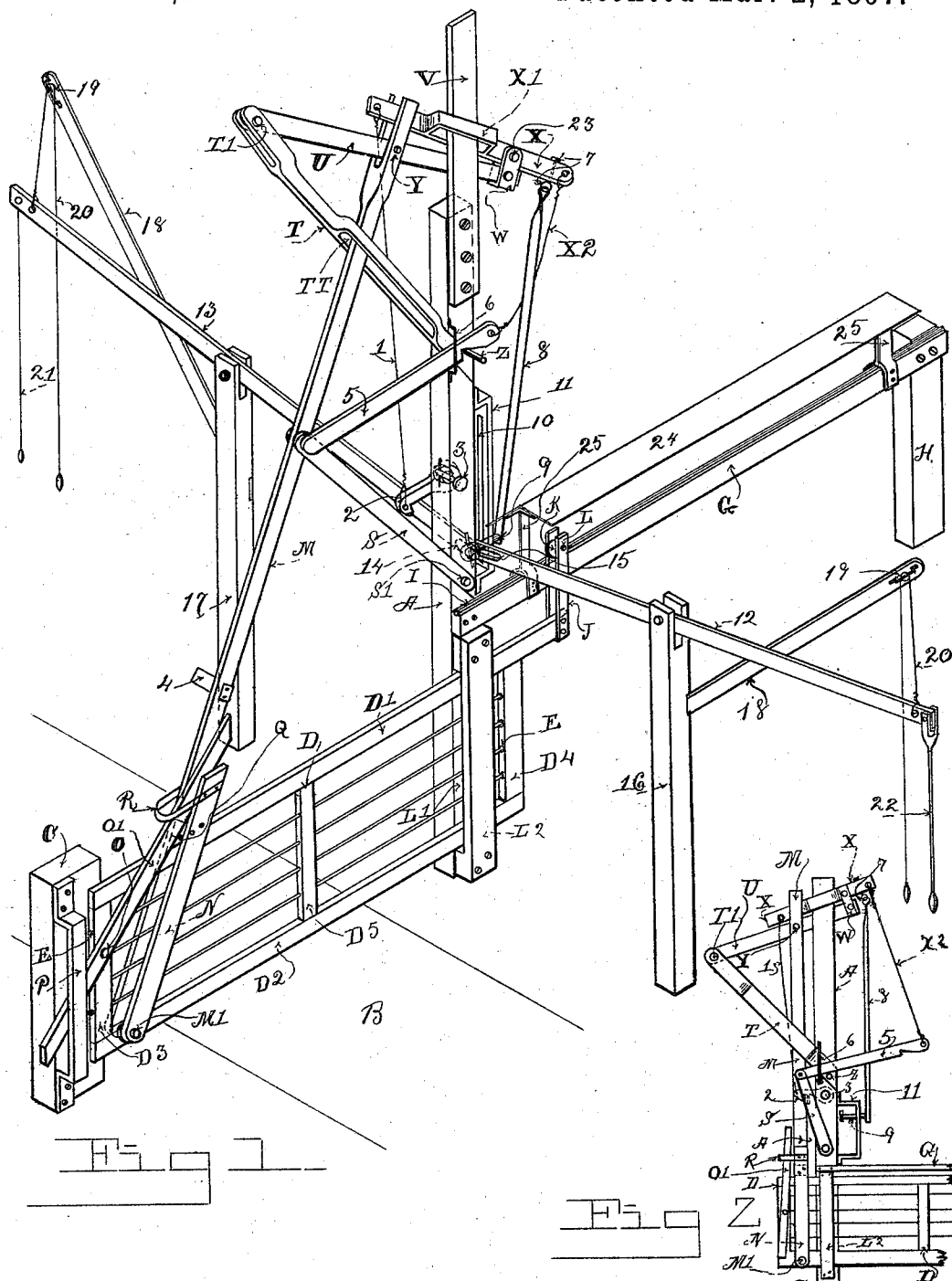


(No Model.)

J. ALLEN.
SLIDING GATE.

No. 577,908.

Patented Mar. 2, 1897.



Witnesses
J. Van Meter
J. Morgan

Inventor
John Allen
By his Attorney
A. S. Bailey

UNITED STATES PATENT OFFICE.

JOHN ALLEN, OF BOULDER, COLORADO.

SLIDING GATE.

SPECIFICATION forming part of Letters Patent No. 577,908, dated March 2, 1897.

Application filed March 9, 1896. Serial No. 582,420. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALLEN, a citizen of the United States of America, residing at Boulder, in the county of Boulder 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 sliding or rolling farm-gates; and the objects of my invention are to provide a simple, durable, cheap, and particularly a simple and easy sliding or rolling gate and gate opening, closing, and locking mechanism which can be manipulated from the road at opposite approaches to it. I attain these objects by the mechanism illustrated and described in the accompanying drawings and specification, in which—

Figure 1 represents in perspective my improved gate and its operative mechanism. Fig. 2 represents in side elevation a fragment of the gate.

Similar letters and figures of reference refer to similar parts throughout the several views.

Referring to Fig. 1, A represents the main supporting-post. It is located at one side of the roadway B.

C represents the terminal post at the opposite side of the roadway to which the gate moves to close the roadway.

D designates the gate. It comprises a rectangular frame composed of the top rail D', lower rail D², end rails D³ and D⁴, and middle rail D⁵. The frame is filled with iron rods, wire fencing, or, preferably, pieces of iron pipe, these several parts and their arrangement being substantially the same as those shown in a former application dated June 10, 1896. These pieces of pipe are threaded at both ends and extend through the end rails of the gate-frame. Nuts E are turned on the ends and arranged one on each side of the end rails to secure, tighten, and lock the pipes to the frame.

G designates a track-support which extends rearward from the supporting-post A, to which

one end of it is secured. The opposite end is secured to a post H. A track I is secured to the top of the support G. This track may consist of a half-round piece of iron or piece of pipe embedded about half of its diameter in the top of the support. The top rail D' of the gate extends beyond the rear end of the gate a short distance. To the end of this extension I secure a yoke-shaped strap J, which is arranged to extend upward on each side of the track-support, and above it between its upper ends I pivot a roller K by a pin L, which passes through the ends of the yoke and loosely through the center of the pulley. The pulley runs on the track and supports the rear end of the gate. I arrange the track and support at a slight incline to the horizontal, the end at the post H being the higher, in order that the gate may start and run down the incline and across the roadway when it is released from the locking and operating mechanism. The gate runs through a slot L', formed on the side of the post A by a strap L². The front of the gate is supported and the gate is carried across the roadway by an arm m, which I term the "carrying-arm." This carrying-arm is pivoted to one side of the front end of the gate's lower rail D² by a pin M', and in order to secure the gate and carrying-arm firmly together in working relation I secure a strap N to the carrying-arm above the gate at one end and pivot its opposite end to the same pin M'. I arrange the strap-piece on the carrying-arm to form a space between it and the carrying-arm intermediate of the points where the strap connects with said arm, in which the gate is confined against lateral swaying and is free to move backward and forward.

To the front end rail of the gate I pivot by a pin or bolt O a latch O', which consists of a strip of any suitable material. This latch is long enough to extend through a slot formed by securing a strap P to the side of the terminal post in a position to form a space between it and said post in the path of said latch. The opposite end of the latch O' extends into a space formed between the strap N and the carrying-arm M above the block or projection Q, which separates the two. This member Q prevents the latch from swinging down too far and out of alinement with the locking-slot. I secure a strap R to

the strap N and to the carrying-arm M, extending it around the upper end of the latch to form a space in which it is free to move to a vertical plane, as shown in Fig. 2, when the gate is fully opened, but which confines and secures it against normal displacement and moves it into operative relation with its locking-slot as the gate moves toward the terminal post. To the main post and to the carrying-arm I pivot a swinging guide-arm and brace S. Above the bracing-arm S, I rigidly secure to the main post a supporting-arm T, which is provided with a slot T T, in which the carrying-arm is supported and in which it is free to move. To the outer end of this supporting-arm I pivot with a bolt T' a lever U, which extends by a vertical guide-rod V, which is secured to the main post and is pivoted at its end by a suitable strap W, which is arranged to allow a slight predetermined movement on its pivot independent of the lever to a controlling-lever X. This lever is loosely secured to move up and down on the vertical guide-rod V by means of a slot or sleeve portion X', which is formed in it and through which the said rod passes. The carrying-arm M is pivotally secured to the lever U at a point between the main post and its connection with the end of the supporting-arm T by a bolt Y. The end of the carrying-arm is bifurcated. Its bifurcated end straddles the lever U and also extends to and straddles the controlling-lever X and loosely holds and secures the controlling-lever to the carrying-arm and parallel with the lever U. The guide-rod V is secured to the main post, and may be of any suitable cross-section to form a loose slideway for the controlling-lever X. To that end of the controlling-lever X which projects toward the roadway B, I secure a rope 1, which extends and is secured to a latch-hook 2. This latch-hook is pivoted to the main post by a bolt 3 and extends toward the carrying-arm, to which is secured a latch-plate 4 in a position to engage the hook when the gate is rolled open and thereby lock the gate in an opened position. At the union of the bracing-arm S with the carrying-arm I pivot with the pivoting-bolt of these pieces a second latch-hook 5, which is made to extend beyond the main post and is confined by a strap 6 against it. I secure a latch-pin Z to the post and arrange the latch-hook to engage the said pin when the gate is fully closed, as represented in Fig. 1, thus locking the gate in both closed and opened positions.

From the free end of the latch-hook 5 I extend a rope X² to the end of the controlling-lever X that is farthest from the road. In this end of the controlling-lever I also place an eyebolt 7, to which is connected by a ring one end of a rod 8. The opposite end of said rod is provided with a laterally-projecting pin 9, which extends through a slot 10, formed in a strap 11, which is secured at its ends to the main post and is formed to make a space or

slideway between it and said post for the ends of the operating-levers 12 and 13. The ends of these last-named levers are pivoted to the pin 9, which extends through slots 14 and 15 in them, the slots 14 and 15 allowing clearance for the ends to move on the pin laterally as they are moved upward by a downpull of an operator on their opposite ends while the pin moves vertically in the slot 10 of the strap 11. On the inner end of the pin a washer or nut is placed to secure it to the levers. The operating-levers extend from the main post in opposite directions approximately at right angles to the run of the gate and parallel with the roadway. They are pivoted intermediate of their ends to posts 16 and 17, erected by the roadway. An arm 18 extends from each post toward and above the end of each operating-lever. These arms support the rope-sheaves 19. A rope 20 is secured to the outer ends of the operating-levers and is passed over the sheave, and the opposite end, which is provided with a handle, hangs down within reach from the roadway. A second rope 21 is secured to the end of said operating-levers, which also hangs down within reach of the roadway, but in place of this rope 21 a rod 22 may be used, as shown at the end of operating-lever 12. This rod 22 or the rope 21 are used to pull the outer ends of the operating-levers down, while the ropes 20 are used to raise the outer ends of the operating-levers.

The operation is as follows: A traveler desiring to pass through the gate pulls down on the rope 21 or rod 22 and thus draws both outer ends of the operating-levers down and raises their inner ends as they are connected together by the pin 9. The upward movement of their inner ends raises the rod 8 through the medium of the pin 9 and the end of the controlling-lever X, to which it is connected, and immediately raises the latch-hook 5 through the medium of the rope X² from the latch-pin Z' and releases the gate. By this time the opposite end of the controlling-lever has moved downward on top of the lever U, and both the controlling-lever X and lever U are carried upward, and with them the upper end of the carrying-arm, the lower end and the gate rolling back through the slot on the main post on the track. A continuous easy pull by the traveler is necessary to roll back the gate until the latch-plate 4 is engaged by the latch-hook 3, when the gate is locked open and the carrying-arm, the lever U, and the controlling-lever X, and the terminal post gate-latch, &c., arrange themselves as shown in Fig. 2, which is a fragmentary view, the operating-levers not being shown and but a fragment of the gate and tracks. After the traveler passes through the gate he pulls down on rope 18, which raises the outer ends of the operating-levers and lowers their inner ends, and thus through the medium of the rod 8 draws the controlling-lever down, causing it to swing on the pivot 23, by which it is secured to the strap

W. This movement causes its opposite end to pull the rope 1, which connects it to the latch-hook 2, thereby raising the said hook and releasing the gate, which starts itself to roll on its track across the roadway the moment it is released, but should it stick a continued pull on the rope 18 will draw down the controlling-arm and the lever U and force the carrying-arm and gate out across the roadway. Should the movement of the gate across the roadway be too fast, it can be checked by taking hold of the rope 21 or rod 22, or the outer end of the track can be adjusted to allow the gate to run slowly. The gate will run to the terminal post and the lower end of the latch will swing on its pivot in front of the gate as it moves across the roadway and enter the slot formed by the strap W to receive it and thus lock the gate against lateral displacement, while the latch 5 engages the pin X² as the gate closes and locks it against retraction except by manipulation of the ropes on the controlling-levers.

24 designates a housing which I secure by braces 25 over the track to prevent ice from accumulating thereon.

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

1. The combination with the gate, of the carrying-arm having a loop in which the front end of said gate moves and is supported, a terminal post having a slot, a gate-latch pivoted to said gate and connected to said carrying-arm and arranged to be moved by said carrying-arm as the gate closes in front of said gate into the slot of said terminal post, substantially as described.

2. The combination with the gate, the inclined track, the carrying-arm, the lever pivoted to the top of said carrying-arm, the stationary support for said lever, a guide and bracing-lever, a post supporting said levers, and said gate, a controlling-lever journaled to said post to reciprocate vertically thereon and arranged to operate said carrying-arm, a rod pivoted at one end to said controlling-lever, two oppositely-disposed operating-levers extending along the roadway in opposite directions pivoted to a post and connected together at their inner ends with said rod, means connected with said controlling-lever, for locking said gate both in an open and closed position, a terminal post on the opposite side of said roadway, means connected with said carrying-arm and gate and said terminal post for locking said gate to said terminal post against lateral displacement, and means connected with the outer ends of said operating-levers for moving them to open and close said gate, substantially as described.

3. The combination with a gate of a carrying-arm pivoted thereto, a guide and bracing-lever pivoted at one end to said carrying-arm, a post by the roadway adapted to slidably support said gate and to which the opposite

end of said guide and bracing-lever is pivoted, a supporting-arm rigidly secured to said post, a lever pivoted to the upper end of said carrying-arm and to the outer end of said rigid arm, an extension secured to said post adapted for a guideway, a controlling-lever having a sleeve portion slidably secured to said extension, a pivoted connection between the one end of said lever and said controlling-lever whereby they are moved together and adapted to permit a slight predetermined movement of said controlling-lever on its pivot independent of said lever, and means substantially as herein described for tilting said controlling-lever and for reciprocating the same on said extension to move said lever and carrying-arm to open, close, and lock said gate.

4. The combination with a gate of a rearward extension thereto, a roller-hanger having a roller journaled therein secured to said extension, an inclined track arranged in operative engagement with the roller of said hanger and adapted to support the rear end of said gate, a post by the roadway, a guide-slot in said post in which said gate is confined, a carrying-arm pivoted to the lower front portion of said gate, a vertical extension to said post adapted for a guideway a controlling-lever having a sleeve portion adapted to slide on said extension, a lever pivotally connected at one end to a stationary arm secured to said post, a lever pivotally secured at one end to said stationary arm, and at the opposite end pivoted to said controlling-lever in a manner to allow said controlling-lever a slight predetermined swinging movement independent of said lever, a pivotal connection between said carrying-arm and said lever intermediate of its ends, and means substantially as herein set forth connected with said controlling-lever for operating it to reciprocate said gate across the roadway and lock it to its terminals.

5. The combination with a rolling gate of a supporting-post for said gate, a carrying-lever pivoted to said gate at one end and at its opposite end to a lever pivoted to a stationary arm secured to said post, a controlling-lever pivotally secured to the opposite end of the lever, to which said carrying-arm is pivoted and having a predetermined movement on its pivot independent of said lever, an extension on said post adapted for a guideway, a sleeve portion on said controlling-lever adapted to said guideway, a rod pivotally secured at one end to one end of said controlling-lever, a pin projecting from the opposite end of said rod, a strap on the side of the main post arranged and adapted to form a slideway-space between it and said post, a slide-slot in said strap through which said pin extends, operating-levers pivoted to posts by the roadway oppositely disposed from one another and operatively connected together at their inner ends by said pin, a hook-latch pivoted to said post, a rope connecting said hook-latch to the

opposite end of said controlling-lever, a latch-plate on said carrying-arm arranged in the path of said hook-latch, a second hook-latch
5 pivoted to said carrying-arm, a rope connecting its free end to the end of said controlling-lever adjacent to said rod, a pin secured to said post in the path of said second-named hook-latch and ropes or rods connected to the outer ends of said operating-levers whereby

they may be manipulated to open and close said gate from the roadway, substantially as described.

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

JOHN ALLEN.

Witnesses:

SEYMOUR DOSS VAN METER,
J. F. MORGAN.