

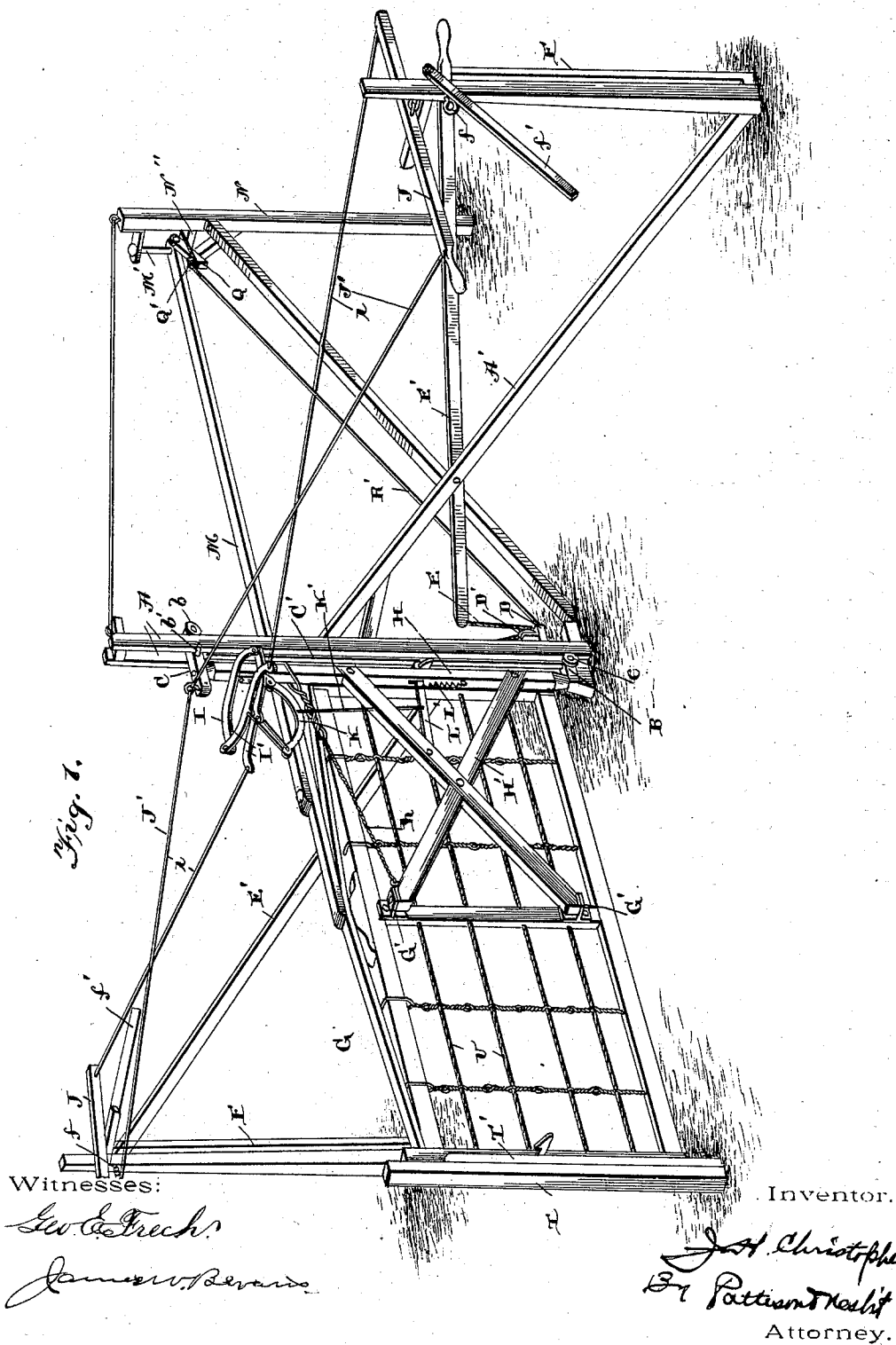
(No Model.)

2 Sheets—Sheet 1.

J. H. CHRISTOPHER.
GATE.

No. 560,776.

Patented May 26, 1896.



(No Model.)

2 Sheets—Sheet 2.

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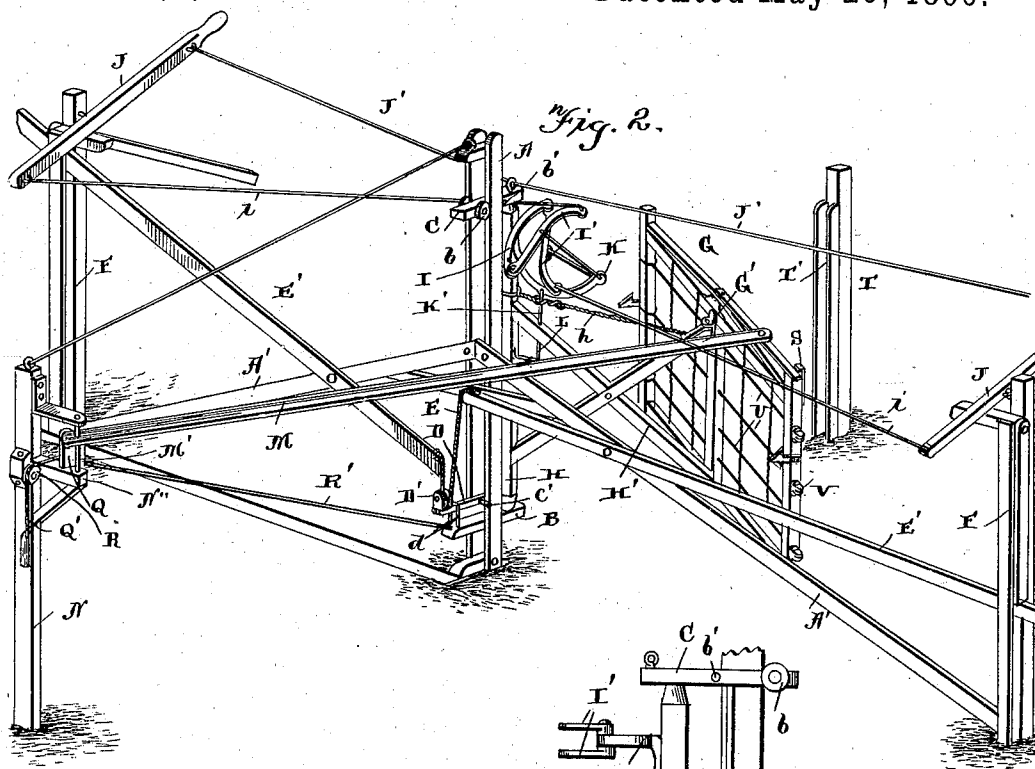


Fig. 4,

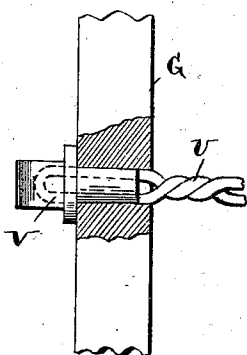
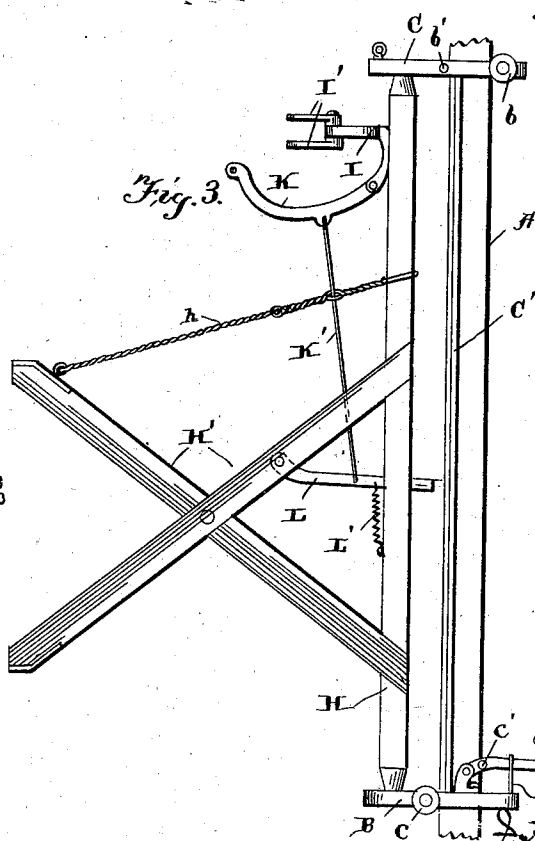


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES H. CHRISTOPHER, OF MORRISONVILLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES H. EDWARDS, OF SAME PLACE.

GATE.

SPECIFICATION forming part of Letters Patent No. 560,776, dated May 26, 1896.

Application filed April 11, 1895. Serial No. 545,348. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. CHRISTOPHER, of Morrisonville, in the county of Christian and State of Illinois, have invented certain new and useful Improvements in 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in gates; and the object of the same is to provide an improved opening and closing mechanism.

A further object is to provide the gate with an improved vertical adjustment.

A further object is to arrange the operating devices for opening and closing the gate and for controlling its vertical position, so that the same may be actuated without alighting from the vehicle.

A further object is to provide an improved latch and latch-operating mechanism.

Still a further object is to provide an improved device for holding and twisting the gate-forming wire strands.

With these objects in view my invention consists in the novel features of construction hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the gate when closed. Fig. 2 is a similar view taken from a different point of view with the gate ajar. Fig. 3 is an elevation of the vertically-adjustable gate-supporting derrick. Fig. 4 is a detail view of the wire-twisting head.

A designates the double gate-post, preferably supported upon the ground-surface by a block or other device and held from lateral displacement by braces A'. A lower bearing-block B and upper bearing-block C move vertically in the double post, the same being connected by rod C'. The upper block is provided upon its outer end with the friction-rollers b and upon its inner end with the cross-pin b', which bears on the inner side of the post, while block B has the friction-rollers c upon its inner side and the cross-pin c' bearing against the outer side of the post,

the said cross-pin being secured between the ends of an arm D, which latter is pivoted at its inner end to the upper surface of block B, while at its outer end it is provided with the vertically-disposed sheaves D'. The outer portion of the said pivoted arm is confined to block B by staple d. The gate-supporting mechanism is carried by blocks B and C, and the latter, besides forming bearings for the gate-support, secure to the same vertical adjustment through the medium of chain E, having its ends secured to the inner ends of levers E', fulcrumed between their ends to braces A' and at their outer ends extending through guide-posts F, as shown. Said posts are provided with removable pins f, which are insertible through the post and lever, so as to hold the outer end of the latter in a raised position, while each post is also provided with a pivoted latch f' for locking the lever down with its forward end in a raised position, as indicated in Fig. 2.

For supporting the gate G, I pivot between bearing-blocks B and C the derrick-post H, provided with the extended cross-arm H', to which the gate G is pivotally secured between its ends, as indicated at G'. Arms H' are braced to post H by the twisted wire h. A bracket I, which is curved forward at its extremities, is secured horizontally to post H and provided with the pivoted cross-arms I', which latter at their free ends are connected by lines i to the ends of operating-levers J, loosely secured between their ends to posts F. The opposite ends of said levers J are connected directly together by the line J'. Arms I' are connected between their ends to the free ends of the vertically-swinging arm K, as shown, and the said arm is connected between its ends by line K' to latch L. Said latch is pivoted at its outer end to one of the derrick cross-arms H' and at its free end is extended through a recess in post H and held normally in a depressed position by the coiled spring L'.

In order to have the gate swing around to an open position when the derrick is turned by the operating-line and arms just described, I pivotally connect thereto at a point midway between the center and rear end of the gate the arm M, pivotally secured at its rear end

on vertical bolt M', supported by post N directly back of main post A, as shown. By means of this arm connection it will be seen and understood that when the derrick is turned to one side the gate will have a pivotal movement on arms H' thereof and will be caused to fold back flatly against the derrick. The gate is pivoted centrally on the derrick and is provided at each end with a notched catch O, so that when the gate is closed, as in Fig. 1, one of the catches will be engaged by latch L, while when the gate is entirely open the other catch will be in engagement with the latch. By this arrangement one and the same latch serves to hold the gate both open and closed. The gate, when being operated, having a longitudinal as well as swinging movement, is readily projected between strips T' on the inner side of the outer gate-post T, so that when closed across the road the free or outer end of the gate is securely held from movement in either direction, the longitudinal retracting motion secured from the operating mechanism just described being necessary to remove it from between said strips. It will be understood that the operating-line when drawn upon for either opening or closing the gate exerts such a pull upon the pivoted cross-arms I' as to raise pivoted arm K, thus lifting latch L through the medium of line K' from engagement with the catch carried by the gate.

In order that the movement and operation of arm M may be entirely accurate, the same is so arranged as to move vertically with the gate when the latter is either raised or lowered, and for this reason the outer end of the arm is allowed a vertical movement on the bolt M', before mentioned. In order to support the outer end of the arm when the gate is in a raised position as well as to assist in the elevation of the end of said arm, the depending latch Q is provided, which is connected at its free end to the upwardly-extending weighted chain Q', which depends over roller R, while line R' extends from the point of connection of said chain Q' to the lower derrick bearing-block, so that when the gate and arm are raised the weighted chain Q' will exert an upward pull upon latch Q and cause it when raised to engage the laterally-extending bracket N'' on post N, while when the gate is lowered line R' will draw the said latch inward and out of engagement from said bracket, and thus permit the outer end of arm M to descend along with the gate. An upwardly-extending intumed catch S is secured to the upper edge of the gate and adapted to engage arm M when the gate is closed for the purpose of bracing together the gate and arm, and thus making the structure more rigid and secure.

By means of the mechanisms and devices herein shown and described it will be seen and understood that the gate may be adjusted either upward or downward in a closed or open position or when partially opened. The

connections are such that the outer end of the long guiding-arm M has its movement controlled automatically.

The gate G is made up of an outline framework provided with a series of vertical and transverse wire strands U. Each strand is a doubled wire having one end secured to the gate-frame, while the opposite end surrounds the twisting-head V, having an axially-formed bearing at one end and a wrench-hold at its outer projecting end. This twisting-head is slotted longitudinally on opposite sides, around which the wire is looped, so as to secure a firm hold for twisting.

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

1. The combination of a gate-post provided with a guideway, a gate-support movable vertically in said guideway, and the levers extended in opposite directions and connected at their adjacent ends to the support so as to adjust the same, substantially as shown and described.

2. The combination of the swinging derrick, the gate pivoted centrally thereon, the catches projected longitudinally from the gate ends, bracket I carried by the swinging derrick and positioned thereon above the gate, the oppositely-extended arms I', vertically-swinging arm K carried by the derrick and positioned beneath bracket I, the lines connecting arms I' with arm K, vertically-swinging latch L carried by the derrick with its free end projected from the axial post of the derrick to engage said catches, line K' connecting arm K and latch L, and the operating-line leading to arms I', whereby when one of said lines is drawn upon the gate will be released from the derrick and the latter will swing carrying with it the above-described mechanism, substantially as set forth.

3. The combination of a gate-post provided with a guideway, bearings movable vertically therein, the derrick mounted in the bearings, the gate carried by the derrick, the levers extended in opposite directions and connected at their adjacent ends to the bearings so as to adjust the same, and the gate-operating mechanism, substantially as shown and described.

4. The combination of a gate-post provided with a vertical guideway, bearings adjustable therein, a derrick mounted in the bearings, the gate carried by the derrick, the gate-operating mechanism, the sheave carried by the bearings, levers extended in opposite directions, and a chain connecting their adjacent ends which extends around said sheaves, substantially as shown and described.

5. The lower bearing for the derrick and gate described, comprising the vertically-movable block, the outwardly-extending arm pivoted at its inner end to the block, the pin extended transversely through the arm and adapted to engage the post and hold the bearing thereto when the latter is elevated independently of the arm, a device for preventing

the arm from being raised independently of the bearing, and an elevating means connected to the outer end of the arm, substantially as shown and described.

5 6. The combination of a gate, a vertically-adjustable support and carrier therefor, a device for turning the gate upon its carrier comprising an arm pivotally secured to the gate at its inner end, the fixed vertically-arranged
10 bolt upon which the outer end of the arm is adapted to turn and move vertically, a mechanism for assisting the vertical movement of the outer end of the arm, and a gate-operating mechanism, substantially as shown and
15 described.

7. The combination of a gate, a gate support and carrier adjustable vertically, a device for swinging the gate upon its support comprising an arm pivotally secured at its inner
20 end to the gate, the fixed vertically-arranged bolt upon which the outer end of the arm is adapted to turn and move vertically, the depending latch pivoted to the arm adjacent to its turning-point, a weighted line connected to the latch so as to exert an upward and
25 lateral pull thereon, a rest for the latch when supporting the arm, a means for automatically disengaging the latch from the rest when the gate-support is lowered, and a gate-operating mechanism, substantially as shown and
30 described.

8. The combination of a gate, a support therefor adjustable vertically, a device for swinging the gate upon its support, said device consisting of an arm pivotally secured
35 at its inner end to the gate, the fixed vertically-arranged bolt upon which the outer end

of the arm is adapted to turn, the depending latch pivoted to the arm adjacent to its turning-point, the rest for the latch, the weighted
40 chain extended upward over the rest and downward to the latch to which it is connected as shown, whereby the upward movement of the outer end of the arm will be facilitated and the latch brought in engagement with its
45 rest, the line connecting the latch with the vertically-adjustable gate-supporter, and a gate-operating mechanism, substantially as shown and described.

9. The combination of a vertically-adjust-
50 able gate, a lever pivoted between its ends and connected at its inner end so as to adjust the gate, a vertical guide for the operative end of the levers, the vertical pivoted latch
55 for holding the lever depressed, and the pin for locking the lever in a raised position, substantially as shown and described.

10. The combination of a gate having an outline frame, double wire strands extending
60 across the same and secured at one end to the frame, and revoluble twisting devices inserted in the gate-frame, and slotted longitudinally on opposite sides to engage the doubled wire
65 strands and confine the latter in the said slots, whereby when the said devices are turned, the doubled strands will be twisted, substantially as shown and described.

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

JAMES H. CHRISTOPHER.

Witnesses:

JOHN GOTLOB,
P. M. WARREN.