

(No Model.)

2 Sheets—Sheet 1.

W. R. WHITE.
SLIDING GATE.

No. 464,235.

Patented Dec. 1, 1891.

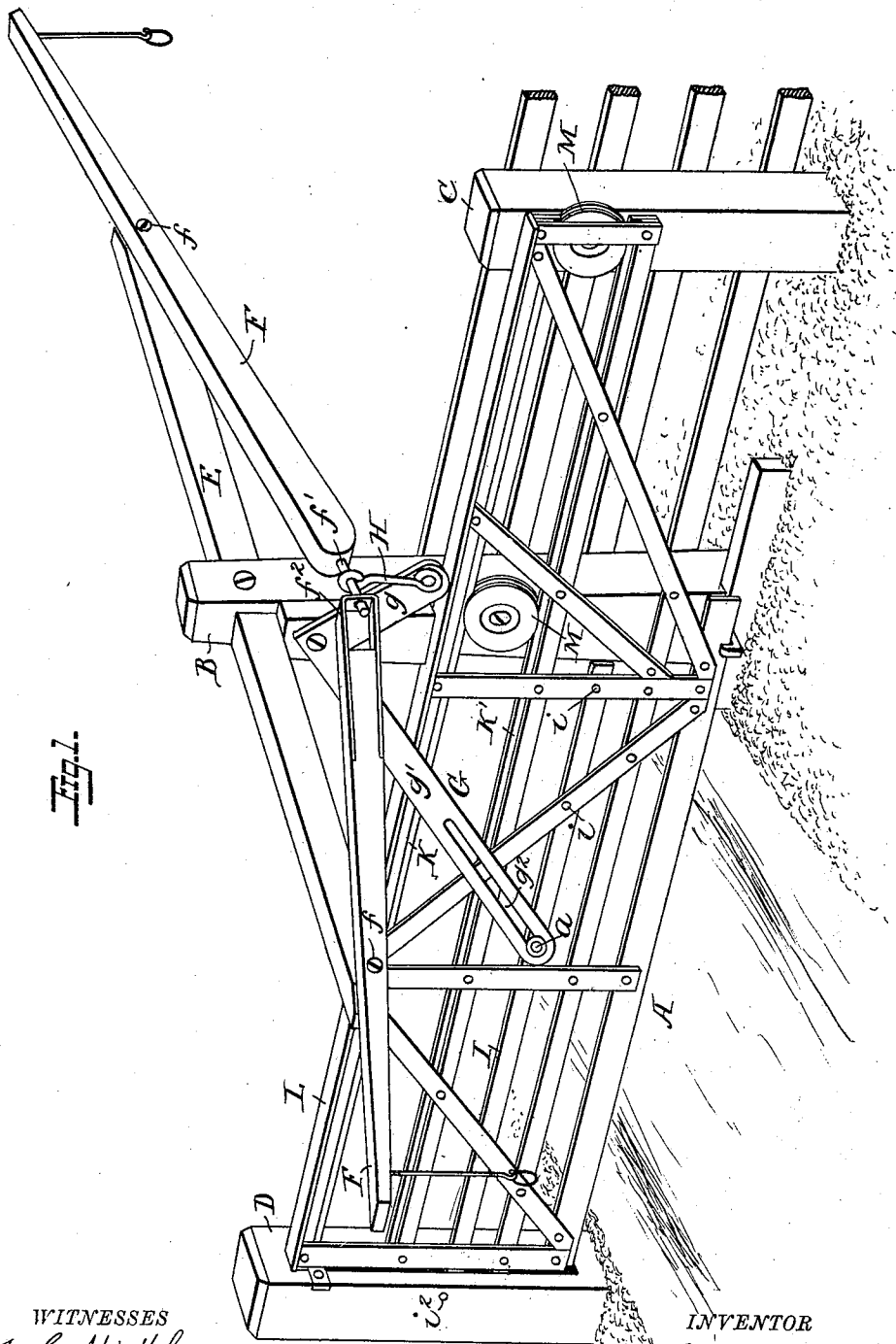


Fig. 1.

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM RICHARD WHITE, OF BLOOMINGTON, ILLINOIS.

SLIDING GATE.

SPECIFICATION forming part of Letters Patent No. 464,235, dated December 1, 1891.

Application filed May 7, 1891. Serial No. 391,980. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM RICHARD WHITE, a citizen of the United States, residing at Bloomington, McLean county, Illinois, have invented certain new and useful Improvements in Sliding Gates, of which the following is a specification.

My invention relates to sliding and rolling gates; and it consists in improvements in the operating devices for said gates, in the construction of said gates, and in the roller-bearings and ways upon which the gates travel.

In the accompanying drawings, in which like reference-signs refer to like parts throughout the several views, Figure 1 is a perspective view showing a gate embodying my improvements. Fig. 2 is a side elevation illustrating my improved latch-bar; and Fig. 3 is a vertical sectional view through a portion of the gate, showing the improved roller-bearing in side elevation and the rails in cross-section.

In the drawings, A indicates the gate-panel, and B and C the posts adjacent to the gate upon which the roller-bearings are mounted.

D indicates a post against which the gate abuts when closed, and to which it is latched.

Upon the post B is mounted a cross-beam E, to which the operating-levers F are pivoted by means of bolts or pins *f*. The operating-levers extend to a considerable distance to either side of the gate, and from their outer extremities are hung handles within easy reach of persons approaching the gate in wagons or upon horseback.

Upon the side of the post B at a short distance from the beam E is pivoted an angle-lever G, having a short arm *g*, which is connected with the operating-levers, and a longer arm *g'*, connected to the gate in some suitable manner, so that when the shorter arm is raised or lowered by the operating-levers the longer arm of the angle-lever will open or close the gate. The arms of the angle-lever are preferably arranged at right angles to each other and the lever is pivoted to the post at its angular point.

In connecting the operating-lever with the angle-lever I preferably use a link H, which is connected pivotally to the outer end of the shorter arm of the angle-lever at its lower end, and through its upper end passes a pin

f', which is securely fixed in the end of one of the operating-levers. This pin *f'* passes through a hole in a U-shaped bearing-piece *f''*, the arms of which are attached to the other operating-lever, the cross-piece of the U through which the pin *f'* passes is located at some distance from the end of the operating-lever to which it is attached, so that the pin *f'* may be free to move up and down with the arms of the U, thus forming a sliding universal joint between the operating-levers.

In connecting the lower arm *g'* of the angle-lever with the gate various devices may be employed. As shown, a slot *g''* is formed in the end of the arm *g'*, and a pin *a*, carrying an anti-friction roller, passes through the slot and is fixed to one of the bars of the gate. With the devices thus far described it will be seen that a downward pull upon the outer end of either of the operating-levers will raise the arm *g* of the angle-arm and throw the arm *g'* from left to right, thus opening the gate by means of the connection between the arm *g'* and the pin *a*.

The latch-bar I, to which the pin is attached, is fastened to the gate at two or more points *i i*, near its rear end, and its forward end is free to spring downward to a slight extent sufficiently to disengage the latch *i'* from the pin *i''*. In opening the gate the initial pull upon the operating-levers causes the arm *g'* to bear down upon the pin *a* with sufficient force to disengage the latch and in closing the gate, which is done by pushing up upon the operating-lever, the latch automatically engages with the pin *i''* by virtue of its elasticity. It will thus be seen that the gate when closed remains latched, and that it is automatically unlatched when the operating mechanism is worked to open the gate.

In Fig. 3 I have shown a large view of one of the rollers M upon which the gate runs, together with the rails above and below the rollers. In order to reduce to a minimum the amount of friction between the rollers and the rails which rest upon the rollers and carry the gate, I construct the rollers with the usual flanges *m*, which flare outward, and between these flanges I form a narrow peripheral groove *m'*.

Upon the rail K, above the roller, I attach

a metal strap *k*, which is preferably semi-elliptical in cross-section. The strap *k* is somewhat wider than the groove *m'* in the rollers, and in operation it rests upon the edges of the groove, as clearly shown in Fig. 2, thus reducing the contact between the strap and the roller to two points. By this arrangement the frictional resistance of the gate is reduced to a minimum. The upper edge of the rail *K'*, beneath the roller, may be faced with half-oval iron, same as above. The rails *K* and *K'* are preferably made L-shaped, as shown, of a single piece of material or two pieces fastened together.

Upon the rail *K*, which is the top rail of the gate, I fasten a cap-piece *L*, which may extend slightly beyond the rail at both sides. This cap-piece I find to be useful for the double purpose of stiffening the gate to enable it to resist wind-pressure, guiding the front end in a slot in front post, and to protect the rollers from snow and rain.

From the foregoing description the operation of my improved gate will be readily understood. I prefer to have the angle-lever arranged as shown, so that a downward pull upon the operating-lever will unlatch and open the gate, and an upward push upon either of the levers will close the gate; but

this arrangement may be reversed without departing from the spirit of my invention.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, with the sliding gate and the operating-levers, one being provided with a perforated U-shaped bearing-piece and the other with a pin extending through the perforation in said bearing-piece, of an angle-lever pivotally supported at its angle and having a sliding connection at one end with the gate, and a link connecting the other end of said angle-lever with said pin, substantially as described.

2. The combination, with the sliding gate having a latch rigidly connected thereto at one end and free at the other end, of the angle-lever having a slot which engages a pin upon the latch-bar near its free end, and operating-levers connected to said angle-lever, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM RICHARD WHITE.

Witnesses:

WILLIAM ECKERT,
JOHN F. WHITE.