(No Model.)

W. R. WHITE.

GATE.

No. 456,974. Patented Aug. 4, 1891.

Fig. 1.

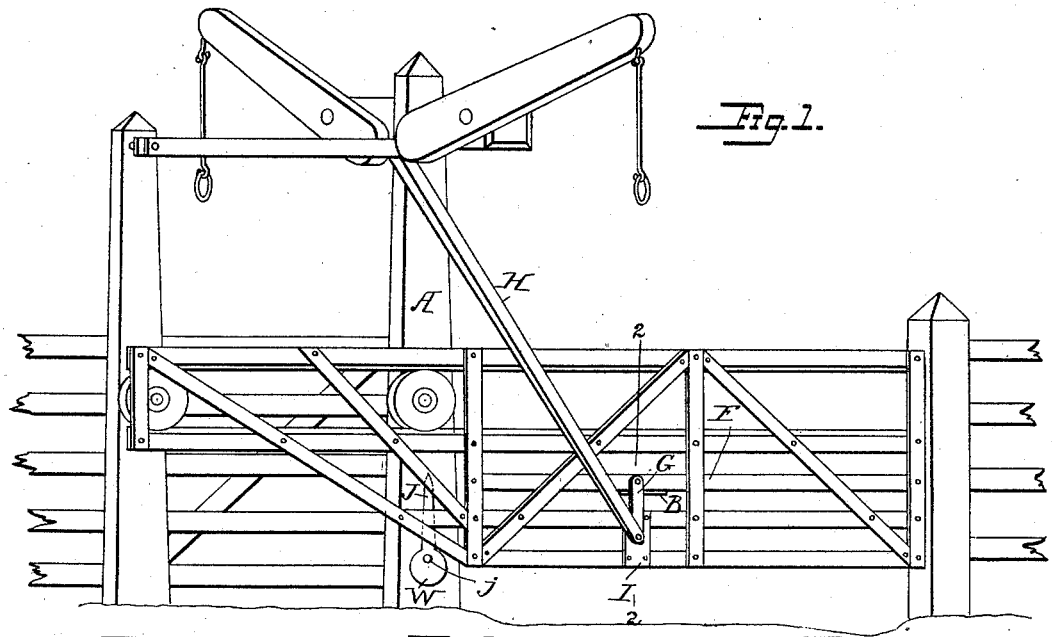


Fig. 2.

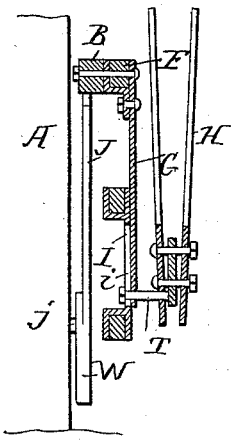


Fig. 3.

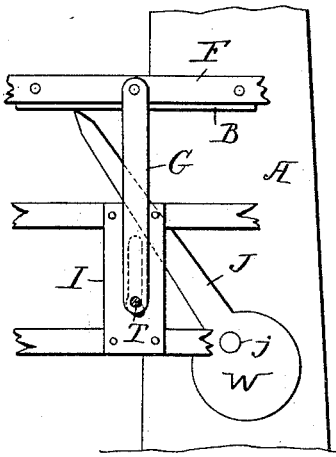


Fig. 4.

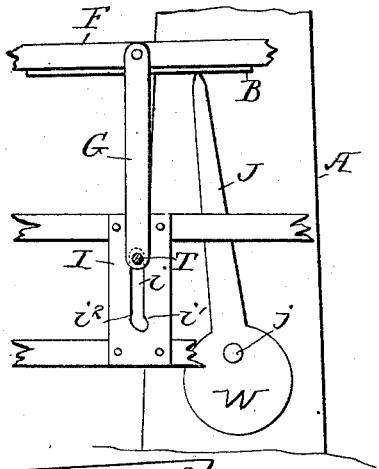


Fig. 5.

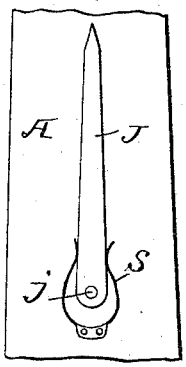
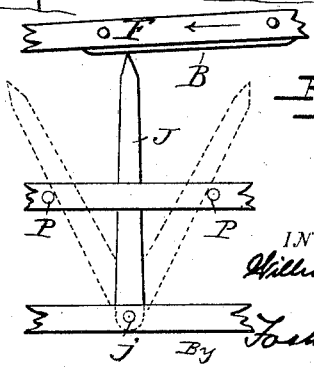


Fig. 6.



WITNESSES.

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WILLIAM RICHARD WHITE, OF BLOOMINGTON, ILLINOIS.

GATE.

SPECIFICATION forming part of Letters Patent No. 456,974, dated August 4, 1891.

Application filed February 20, 1891. Serial No. 382,266. (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, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification.

This invention relates to sliding gates; and it consists in various improvements in the operating devices of such gates, all as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my gate. Fig. 2 is a section on the line 2 2 of Fig. 1. Figs. 3 and 4 are partial side views showing the operating parts in different positions, and Figs. 5 and 6 are side views of modified forms of the tilting lever.

In operating gates of this class heretofore I have found that sometimes through accident or carelessness persons neglect to pull down the operating-lever with sufficient force to throw the gate over the dead-center.

My present invention consists in devices for preventing the gate from lodging upon the dead-center and for moving it off of the center in the direction in which it should go should it by any accident lodge on the said center.

The present invention is shown in connection with a gate heretofore patented to me on February 17, 1891, No. 446,605, and for a detailed description of the gate and so much of the operating devices as are old I will refer to the aforesaid patent.

In general the gate, which may be of any desired construction, slides backward and forward upon rollers or other suitable ways fixed upon the adjoining fence. In order to cause the gate to move from its closed position to its open one, and vice versa, I connect it near its middle portion with the overhead operating-levers L by means of swinging strips or connections H H, the strips being connected to the levers by universal joints. As in my former patent, the swinging strips H are preferably connected to the latch-bar of the gate through the medium of the connecting-arm G, so that when the upper ends of the strips are raised by the levers the latch-bar will first be raised to unlock the gate, and afterward the gate, by virtue of the tendency of the strips to swing into a vertical position, will be carried to the other extreme of its movement. Should the gate, however, by reason of an insufficient hold upon the lever, lodge upon the dead-center, or the position in which the swinging strips are vertical, I provide means as follows for throwing it off: To the gate-post A or some other fixed portion of the fence adjoining the gate I connect pivotally a tilting bar J by a screw, bolt, or other suitable pivot *j*, preferably passing through the lever near its lower end. In the forms shown in Figs. 1 to 5, inclusive, I have shown means for holding the bar in a vertical position normally, while permitting it to swing to either side for a purpose which I will hereinafter describe. Thus in Figs. 1 to 4 the lower end of the bar is provided with a weight sufficient to make it hang normally vertical, as shown in Fig. 1, while in Fig. 5 the same effect, practically, is accomplished by the use of a plate-spring S, rigidly attached to the fence or post. As before stated, the connecting-strips H move the latch vertically through the medium of an arm G. In order to relieve the connecting-arm G from the lateral strain which would be put upon it in starting the gate, I provide a guide-plate I, having a slot *i*, through which passes the bolt T, connecting the swinging strips and the arm G. This plate I is fastened to the lower bars of the gate and takes all the lateral strain off the arm G in starting the gate.

Upon the latch-bar, at a point near the middle of the gate, is secured a block, strip, or other suitable bearing B. The bearing-block B is located so that when the gate is on the dead-center it will be over the pivotal point of the tilting lever, and the lever is of such length that its upper end will be in the path of the bearing and will be moved to one side or the other, as shown in Fig. 3, when the gate is opened or closed, as the bearing-block passes over it. The plate I is provided with internal shoulders i' i^2, which prevent the pin T from rising in the slot *i* while the swinging strips H are in an inclined position and the gate is being started from one of its extreme positions; but when the gate is in its mid-position the vertical slot *i* permits the pin T to rise, carrying with it the latch-bar and bearing-block. The length of the slot *i* is so

limited that the bearing-block can rise sufficiently to permit the tilting bar to assume a nearly vertical position, as shown in Fig. 4, but will not allow it to become entirely vertical.

The operation of the improvements thus far described is as follows: Presuming that the gate is closed and that it is desired to open it, a downward pull upon the outer end of one of the operating-levers will raise the upper ends of the swinging strips, and, through the tendency of the strips to swing into a vertical position, will ordinarily throw the gate from one extreme position to the other. In opening the gate the first movement of the strips H causes the latch to rise sufficiently to unlock the gate, the shoulder i^2 being high enough to allow this movement, after which the gate moves bodily. Should the gate lodge on the dead-center, the tilting bar will assume an inclined position, as shown in Fig. 3. Now by giving the operating-lever an additional downward pull the corresponding upward movement of the now vertical strips H will raise the bearing-block and permit the bar to assume a nearly vertical position, as shown in Fig. 4. If the operating-lever is now released, as the weight of the latch-bar, strips H, and other vertically-movable parts is considerable, the tendency of the tilting bar will be to swing again into the position shown in Fig. 3 and carry the gate off of the center. The same effect will be produced by pushing upward upon the outward end of the operating-lever, thereby bringing a downward pressure to bear upon the block or bearing B. It will thus be seen that the gate can always be readily moved off of the dead-center and invariably in the direction in which it is desired it should go. After the gate is off the center an upward push upon the operating-lever will obviously complete its movement.

In Fig. 6 I have illustrated another form in which the bar lies normally against a stop P, instead of being held in a vertical position. The bearing-block B may be upon the latch-bar or other vertically-movable part of the gate, as in the devices above described, or, if the gate is not a heavy one, it may be upon a fixed part, in which latter case the gate will be moved bodily upward when the bearing is passing over the lever. This device is intended to prevent the gate from lodging upon the dead-center. Thus when the gate is moving from right to left the left end of the bearing will come in contact with the point of the bar, which is lying in an inclined position against the stop P, and the further movement of the gate will bring the bar to a vertical position with the bearing-block and the parts connected to it resting upon the now vertical bar, as shown in Fig. 6. It is highly improbable that the gate would rest thus balanced upon the unstable pivoted bar. Should it swing in the direction in which it is desired it should go, the further movement of the gate is accomplished, as usual, by an upward pressure on the operating-lever. Should, however, the initial pull upon the gate be insufficient to bring it to the central position, the tilting bar will throw it backward sufficiently to permit a new impetus to be given it by another pull upon the lever sufficient to throw it over the center. Thus in this modified form the desired object can always be accomplished.

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

1. In a sliding gate, the combination of a bar pivotally connected to a fixed part, such as a gate-post, and normally vertical, but free to swing to either side, with a bearing-block upon the gate, said bar being disconnected from the gate and having its free end located in the path of the bearing-block, substantially as set forth.

2. In a sliding gate, the combination of a vibrating bar mounted upon a fixed pivot, and means for holding said bar normally vertical, with a bearing upon a vertically-movable part of the gate, arranged to engage the free end of the bar when the gate is in its mid-position, substantially as set forth.

3. In a sliding gate, the combination, with a bar having a fixed pivot, of a bearing-block upon the latch-bar, and means for moving the latch-bar vertically to shift the gate when the block is resting on the bar, substantially as set forth.

4. In a sliding gate, the combination of a bar having a fixed pivot and a weight to cause it normally to remain vertical, with a bearing upon a vertically-movable part of the gate, and means for moving said part vertically for the purpose of shifting the gate, substantially as set forth.

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

WILLIAM RICHARD WHITE.

Witnesses:
HARMON GREGG,
JOHN F. WHITE.