

(No Model.)

W. R. WHITE.
GATE.

2 Sheets—Sheet 1.

No. 584,280.

Patented June 8, 1897.

Fig. 6.

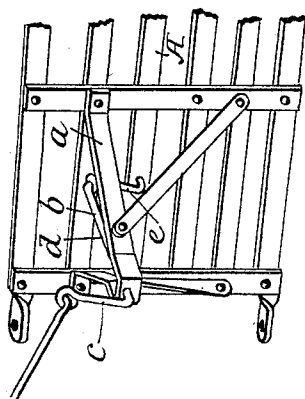
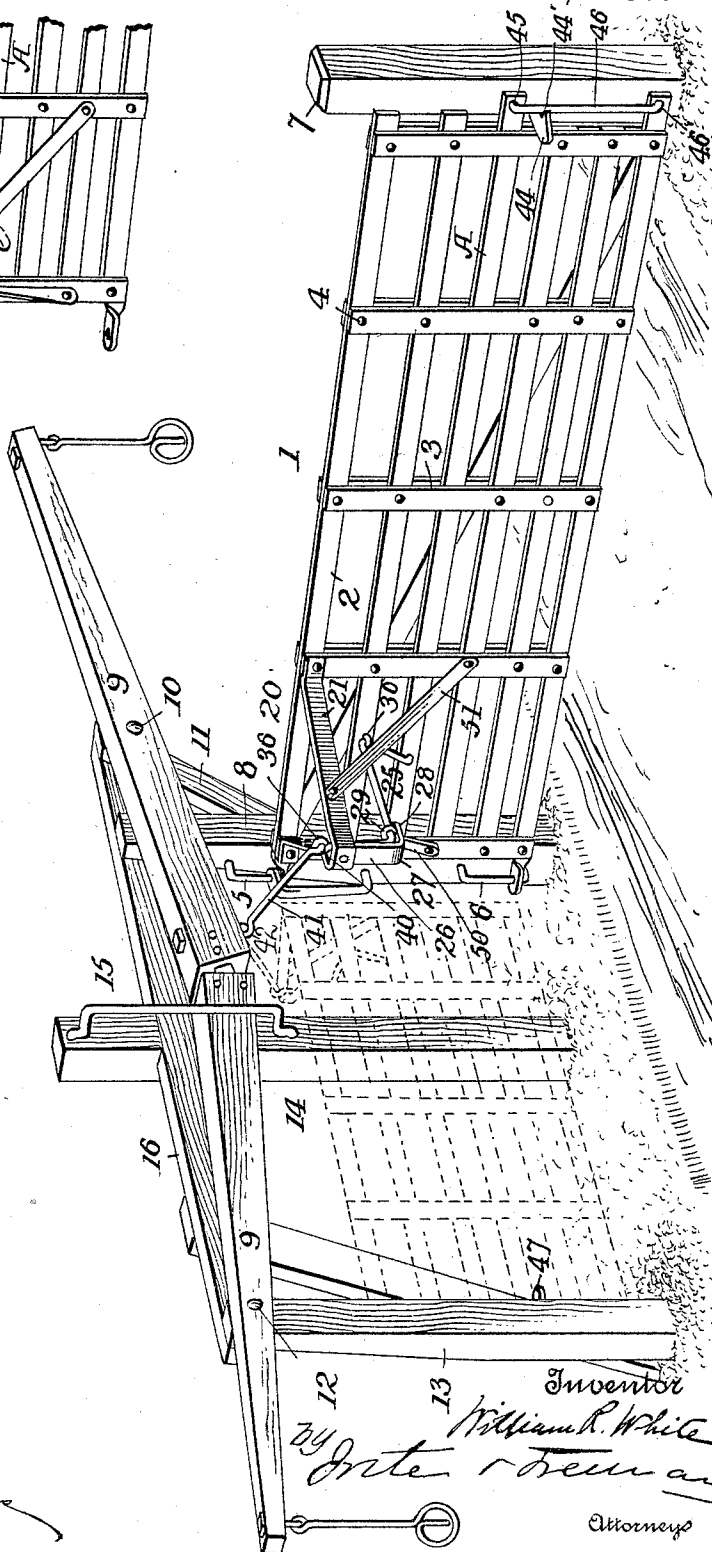


Fig. 1.



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2 Sheets—Sheet 2.

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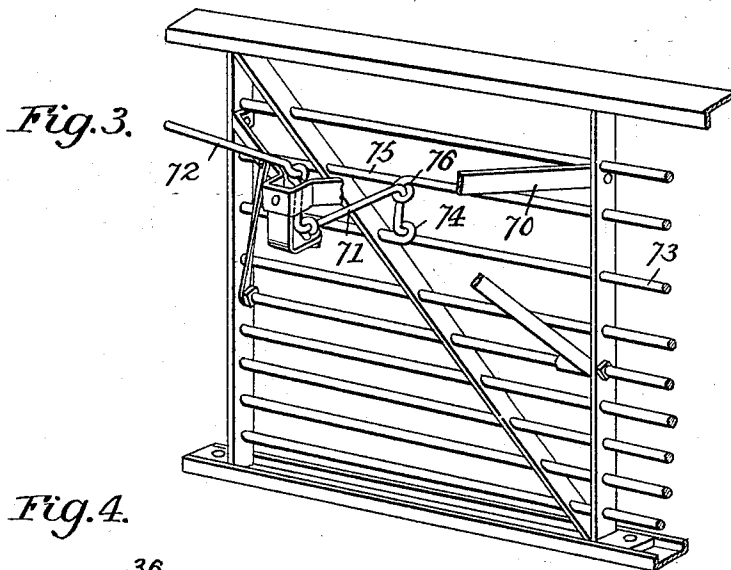
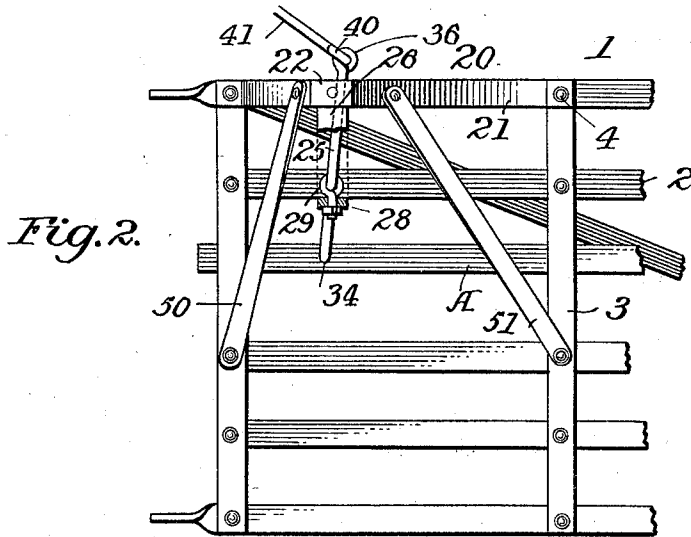


Fig. 4.

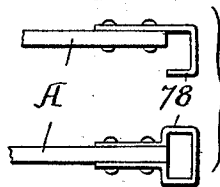
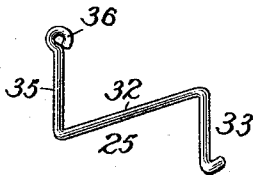


Fig. 5.

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UNITED STATES PATENT OFFICE.

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GATE.

SPECIFICATION forming part of Letters Patent No. 584,280, dated June 8, 1897.

Application filed March 26, 1897. Serial No. 629,414. (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 certain new and useful improvements in swinging gates; and it consists, substantially, in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

The invention has reference more particularly to that class of swinging gates in which the gate is operated to be opened and closed through the medium of suitable devices connecting the gate with operating hand-levers suitably fulcrumed or disposed on supporting-posts arranged on one side of the roadway and which hand-levers serve by the weight of their inner ends to maintain the latch of the gate in locked engagement both in the open and closed positions of the gate.

I have heretofore patented a number of different constructions of gates of this general character, but in most instances the latch-bars and operating connections have been so disposed that in order to unlock or release the gate from its fastening in either position the latch-bar had to be withdrawn or retracted longitudinally, and then as soon as the gate was released the latch-bar would be caused to again project itself and become engaged. In most of the gates which I have patented the results have been eminently satisfactory as regards their effectiveness in operation, but in other constructions it has been found that the devices directly connected with the latch-bar would either of themselves bind or else the latch-bar itself would bind, due either to indirectness of action or to distortion, or possibly to other causes. My experiments finally led up to the adoption of a gate embodying a latch-bar normally in a retracted position to maintain the gate locked and which had to be projected rather than withdrawn by which to release the gate, since with this form I found also that very satisfactory results were to be had. Thus in the several embodiments herein shown the latch-bar is preferably in a nor-

mally-retracted position when the gate is closed and locked, but when the gate has been thrown to its open position and locked the latch-bar is in a projected or reverse position. This effect is necessarily brought about by the position assumed by the connecting-bar between the operating-levers and the latch-bar-operating devices, but it has its advantages in that the greater and more secure locking effect is produced when the gate is in its closed position at a less expense.

My present invention will therefore be understood to relate principally to the devices or connections between the gate and operating-levers by which the latch-bar is caused to be operated in the manner explained, and while I have devised a number of different specific constructions of devices for the same purpose I intend that they shall form the subject of separate applications which I am about to file, the present application relating, broadly, to a particular form in several embodiments which are the substantial equivalents of each other.

In the accompanying drawings, Figure 1 is a view in perspective of one embodiment of my improved gate, the gate being shown by full lines in its closed position and by dotted lines in its opened position. Fig. 2 is a front elevation of a portion of the gate. Fig. 3 is a view in perspective of a portion of gate comprising another or slightly-different form of connection between the inner end of the rocking lever and the gate, the bars of the gate in this instance being preferably of rod iron or wire and a portion of the supporting-frame on the gate being broken away. Fig. 4 is a perspective view in detail of the rocking lever. Fig. 5 represents several different constructions of engaging portions for the latch-bar, and Fig. 6 is a view in perspective of a portion of gate and its supporting-post and showing a modification in the arrangement of the support for the rocking lever.

As before stated, I have devised a number of different forms of operating devices for the latch-bar, but the present invention relates more particularly and broadly to a special form, and while this special form is herein shown in certain preferred embodiments it will be understood that it, too, is subject to changes or immaterial alterations to meet the

requirements or exigencies of particular conditions. Thus in Fig. 1 the gate is designated at 1, and said gate may be constructed in any suitable or preferred way. As a convenient
 5 construction I have shown the same as constructed of a number of longitudinal flat bars 2, united and maintained a suitable distance apart by means of the pairs of vertical connecting-strips 3 and the rivets or bolts 4.
 10 The said gate is mounted to swing on suitable hinges 5 and 6, which do not possess any special feature of improvement, and at the opposite or closing end of the gate is a post 7, on the opposite side of the road to the post
 15 8, on which the hinges of the gate are held or supported.

The operating hand-levers are represented at 9 9, one being fulcrumed at 10 on a diagonal brace 11, extending upward from the
 20 side of post 8, and the other being fulcrumed at 12 on an additional post 13, situated on the same side of the roadway in alignment with said post 8. Intermediate of the said posts 8 and 13 is another post 14, on which is held
 25 or supported a guide 15, comprising a piece of wire bent into the form of a vertical rectangular loop, through which passes the inner end of one of the operating-levers. The said
 30 posts 8, 13, and 14 are strengthened in position by means of a horizontal brace 16, and there is no unsteadiness in operation.

The inner ends of the operating-levers are slightly heavier than their outer ends, so as to hold the gate to either one of its positions, and the said levers are movably joined together at their inner ends by any suitable
 35 form of joint that will permit the proper rise and fall of said levers when they are operated. I have shown a form of connection
 40 which has already been patented to me, and hence no special mention thereof need herein be made.

Now it is of course apparent that when the gate is open the position of the connecting-bar
 45 and the rocking lever will be reversed and the swinging rod will be engaged by passing behind a shoulder on a catch 47, secured to the post 13, and the latch-bar will thus be held withdrawn or retracted while the gate is
 50 locked in its open position. Now it is evident that by pulling on either one of the operating hand-levers 9 9 while the gate is closed the rocking lever will first be rocked in its bearings, so as to carry the upper and
 55 lower arms thereof to an opposite position, and this movement of the lever will project or advance the latch-bar in such manner as to swing the rod 46 and release the gate. By a continued pull on the lever 9 the upper arm
 60 of the rocking lever is carried to the opposite side of the offset portion or pull 22 of the lateral frame, and it is then that the direct action of the pulling effect is had upon the gate and the latter is carried to its open position. To close the gate, it is simply necessary
 65 to pull upon either one of the operating hand-levers, and the reverse is the operation of the

several parts. If desired, the lateral frame on the gate may be braced at 50 and 51, and said frame is secured upon the gate in any
 70 suitable manner.

From the above it will be noted that the latch-bar is operated by a very slight turn of the rocking lever and that immediately said operation takes place the upper arm of the
 75 lever is carried against the combined stop and pull portion of the lateral frame, and then the strain is taken from the latch-bar and communicated directly to the gate through the medium of said lateral frame and the
 80 rocking lever and connecting-bar. In this way the parts do not become bent or distorted. They never bind and the gate can always be relied upon to operate perfectly under all conditions. It is evident that I am
 85 not limited to the precise nature of the bearings for the said rocking lever.

In Fig. 3 the gate and hand-levers are mounted in substantially the same manner as before, and the laterally-projecting frame
 90 70 is also constructed the same, as is also the rocking lever 71 and its bearings, together with the connecting-bar 72. In this connection, however, the gate is a wire gate or of iron rods in a frame of flat or channel iron,
 95 and the latch-bar 73 is also of rod-iron. The simple difference in construction possessed by this form consists in bending the latch-bar 73 to constitute the eye 74 and to similarly bend the gate-wire or iron rod 75 above
 100 the said bar in a similar manner, so as to form an eye 76, which is arranged above said eye 74, and the position of the said eye 74 being vertical, while that of the eye 76 is horizontal. The lower bent arm of the rock-
 105 ing lever passes through these eyes substantially as in the construction first described, and the operation of the parts is such that as the lever is turned one way the latch-bar will be projected and when turned the other way
 110 said bar will be retracted.

In the second construction described the engaging end 78 of the latch-bar is rectangular in shape and engages the catches on the posts in an obvious manner. I might
 115 form such ends of the said bar into various shapes to effect the desired locking or engagement of the gate in either position. (See, for instance, the several constructions shown in Fig. 5.)
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Projecting from the side of the gate 1, at the hinged end thereof, is a lateral frame 20, which, as herein shown, is constructed of an upper laterally-projecting portion 21, being substantially triangular in shape when viewed
 125 in plan, and formed therewith is the offset portion 22, which subserves the function of a "stop" for limiting the movement of the rocking lever 25, hereinafter described, as well as a "pull" for receiving the strain necessarily exerted to both open and close the
 130 gate. Pendent from said triangular part 21 is a bracket or cradle 26, in which the rocking lever is supported to rock, the said cradle

or bracket extending down for a short distance only, so as not to be interfered with by stock, and being bent or turned inwardly at 27 to constitute an arm 28, in which is inserted an eye 29. Said eye is in substantial alinement with, but in a position at right angles to, a similar eye 30 on the gate, and the rocking lever 25 has its bearings in said eyes in the manner shown—that is to say, the said rocking lever is constructed of a straight horizontal connecting portion 32, having a downwardly-projecting crank-arm 33, leaning slightly in the direction of the hinged end of the gate when the gate is closed, and being fastened in an opening in the longitudinally-movable latch-bar A at 34, (which opening is to one side of the eye 30,) and also having an upwardly-bent crank-arm 35, terminating in an eye 36, the said arm 35 leaning or inclining in the opposite direction or slightly in the direction of the closing end of the gate. As thus arranged the rocking lever is held in the eyes with its lower end entering the opening in the latch-bar, as explained, and when the gate is in its closed position the lever rests in the cradle 26, with its upper bent portion or arm 35 resting against the side adjacent to the closing end of the gate and the lower bent portion or arm thereof extending in the direction of the hinged end of the gate. The eye at the upper end of the upper arm of the rocking lever is in movable connection with a similar eye 40, formed in the lower end of the connecting-bar 41, which has its upper end linked to or movably connected with one of the operating hand-levers at 42. It will thus be seen that from the connections described the weight of the operating-levers will serve to hold the rocking lever to the position just indicated, and that in consequence the latch-bar will be held in a retracted position and the forward end of such bar will be securely held in locked engagement with the catch 44 on post 7. The forward end of said bar could be constructed in various ways to be engaged by said catch, but, as herein shown, the latch-bar is supported to slide back and forth between the upright portions of the gate, and the forward end thereof is in pivotal connection at 45 with a short upright rod 46, pivoted at its lower end in the projecting end 46' of the lower bar of the gate. Said rod is so pivoted that as the latch-bar is moved it will swing back and forth. This swinging rod effects engagement with the catch 44 by moving behind a shoulder 44' thereon.

From the foregoing it will be seen that my present invention is directed principally to the device which directly operates the latch-bar, and while I have hereinbefore described certain means for supporting this device in proper relation to said latch-bar it is evident that the same could be supported in various ways. Thus in Fig. 6 I show a modification wherein the cradle 26 of the other constructions is dispensed with. In said figure the

supporting-frame *a* could be of any desired shape, but preferably is of approximately triangular form, and the rocking lever *b* is supported at the apex of the frame at or near to the point where the upwardly-extending arm *c* of said lever branches from the straight or horizontal portion *d* thereof. The connection of the downwardly-projecting arm *e* of the lever with the latch-bar is substantially the same, as is also the connection of the upwardly-projecting arm with the connecting-bar from the hand-levers; but it is evident that the form of these connections could be considerably varied.

With this last construction and arrangement described the upwardly-projecting arm of the lever could be supported in such manner as to be disposed either inside or outside of the frame with equal results.

What I claim is—

1. In a swinging gate, the combination of a latch-bar, operating hand-levers for the gate, a rocking lever in movable connection with the latch-bar, a laterally-projecting frame on the gate, a cradle on said frame arranged at an angle thereto and supporting one end of said rocking lever, and a connecting-bar between said rocking lever and one of the hand-levers, substantially as described.

2. In a swinging gate, the combination of a latch-bar, operating hand-levers for the gate, a rocking lever in movable connection with the latch-bar and having a bearing on the gate, a laterally-projecting frame, a cradle pendent from said frame and forming a bearing for one end of said lever, and a connecting-bar between said rocking lever and one of the hand-levers, substantially as described.

3. In a swinging gate, the combination of a latch-bar, operating hand-levers for the gate, a rocking lever in movable connection with the latch-bar, a cradle having a bearing for the said rocking lever, means for limiting the movements of this lever and for receiving the pulling strain on the gate, and a connecting-bar between said lever and one of the hand-levers, substantially as described.

4. In a swinging gate, the combination of a latch-bar, operating hand-levers for the gate, a rocking lever having a bearing on the gate and being in movable connection with the latch-bar at a point nearer the hinged end of the gate, a lateral frame constituting in part a pull for the gate and a limiting-stop for the rocking lever, a cradle having also a bearing for said rocking lever, and a connecting-bar between this lever and one of the hand-levers, substantially as described.

5. In a swinging gate, the combination of a latch-bar, operating hand-levers for the gate, a rocking lever in movable connection with the latch-bar and comprising a straight horizontal portion having an arm bent downward and another arm bent upward, a cradle for the lever, and a bearing therefor both on the gate and cradle, a limiting-stop and pull, and a connecting-bar between the upper arm of

4
said rocking lever and one of the hand-levers, substantially as described.

6. In a swinging gate, the combination of a latch-bar normally in a retracted position
5 when the gate is closed, and a latch comprising a swinging vertical rod in movable connection with said latch-bar, catches for engaging this latch in both the open and closed position of the gate, a rocking lever having a
10 bearing on the gate and being in movable connection with the latch-bar at a point nearer the hinged end of the gate, a cradle also having a bearing for said rocking lever, and a connecting-bar between this lever and one of
15 the hand-levers, substantially as described.

7. In a gate, the combination of a longitudinally-movable latch-bar, operating-levers for the gate, and a rocking lever having arms extending in different directions to en-

gage the latch-bar and the connections from 20 the operating-levers, substantially as described.

8. In a gate, the combination of a longitudinally-movable latch-bar, operating-levers for the gate, a rocking lever having 25 arms extending in different directions to engage the latch-bar and the connections from the operating-levers, and a support for said rocking lever on the side of the gate, substantially as described. 30

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

WILLIAM RICHARD WHITE.

Witnesses:

G. C. WHITE,
CHAS. F. RIECKHOFF.