

(No Model)

W. R. WHITE
GATE.

No. 583,350.

Patented May 25, 1897.

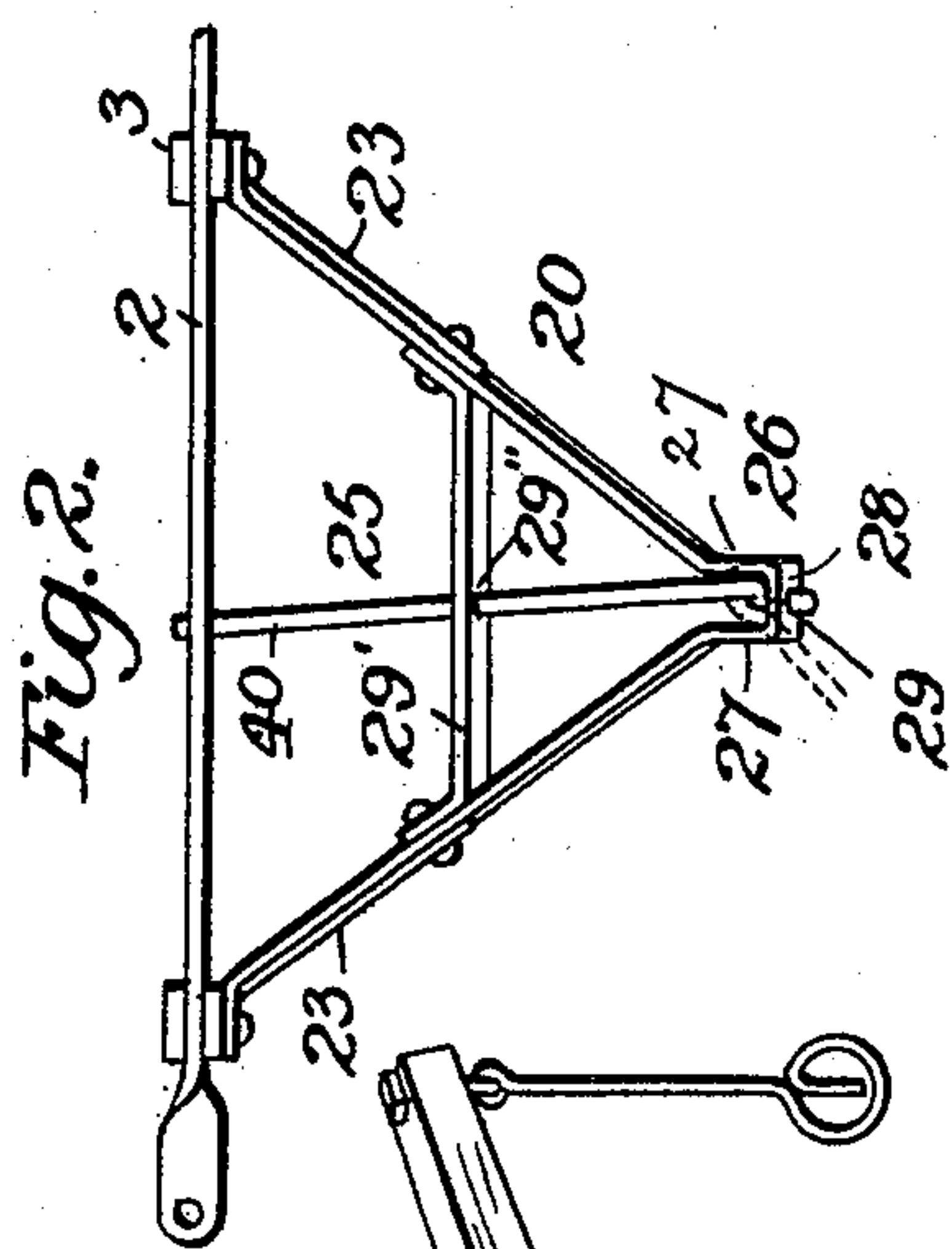
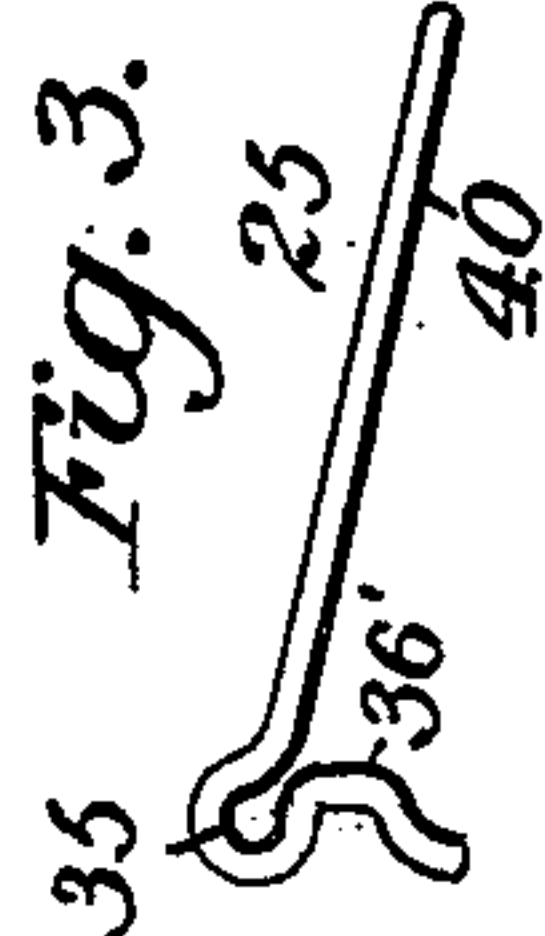
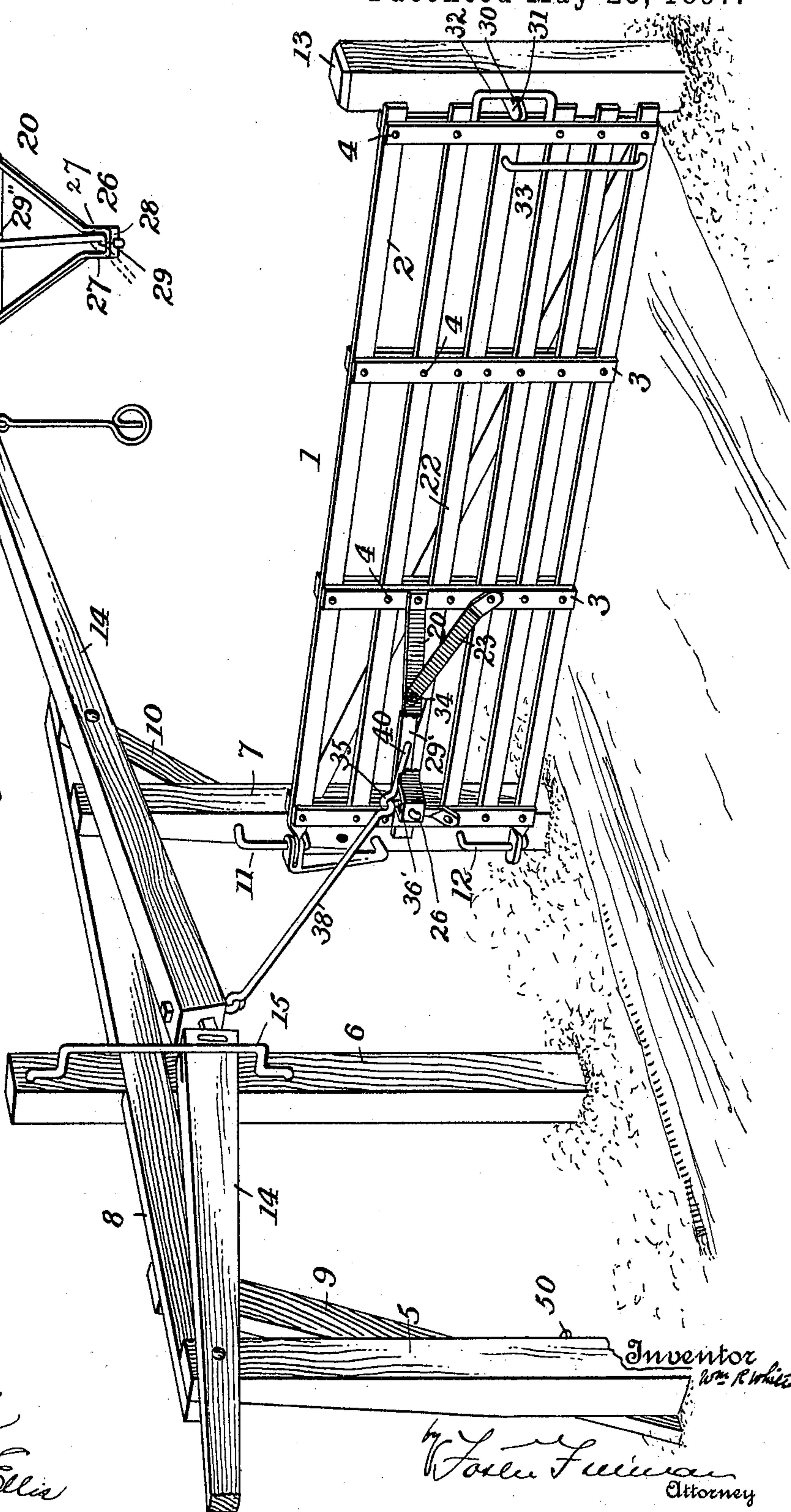


Fig. 1.



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UNITED STATES PATENT OFFICE.

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GATE.

SPECIFICATION forming part of Letters Patent No. 583,350, dated May 25, 1897.

Application filed March 24, 1897. Serial No. 629,065. (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 hand-levers and suitable devices connecting the same with the gate. As distinguished from a number of former patents granted me on this subject the present invention comprises a longitudinally-movable latch-bar that is normally in a retracted position when the gate is closed and locked, instead of the reverse, and it therefore becomes necessary in the present instance to so construct and arrange the operative connections that the said latch-bar will be caused to be projected to release the gate instead of retracted for that purpose. I will not attempt to enumerate the advantages of a latch-bar thus disposed, but will simply state the object of the present invention to be to provide means whereby while the gate is always securely maintained in a locked position it requires the exercise of but little force or strength to release the latch-bar in either position of the gate.

The present invention comprises a special form and arrangement of movable lever for operating the latch-bar and for transferring the pulling strain upon the gate from said latch-bar to the laterally-projecting frame on the gate which supports or holds the said lever. The parts are so disposed that the movement of the latch-bar is always in a direct line, and no strain is exerted thereon other than the small amount required to move the same longitudinally for releasing the engaging end thereof from the catches. Immediately the bar is released the strain is directly received by the lateral frame and indirectly by the gate itself, and in virtue of the ex-

ceeding lightness of the structure the inner ends of the operating hand-levers are not required to be made so heavy as heretofore. 55

In the accompanying drawings, Figure 1 is a view in perspective of a swinging gate embodying my improvements, a part of the laterally-projecting frame on the gate being broken away to more clearly indicate the construction and arrangement of the operative parts. Fig. 2 is a top or plan view, and Fig. 3 is a perspective view of the rocking oscillating lever detached. 60

While my present invention is a special form of device for operating the latch-bar, it will of course be understood that it is capable of change or alteration in immaterial respects in order to meet the requirements or exigencies of any particular case. Thus in the drawings 1 represents the gate, which is shown in its closed position and which, it will be understood, may be constructed in any suitable way. I have shown the same constructed of a number of flat bars 2, united and held at suitable distances apart by the duplicate vertical strips 3 and rivets or bolts 4. 75

Arranged on one side of the roadway and in alinement with each other are the posts 5, 6, and 7, held together by a cross-piece 8 and braces 9 10, so as to give steadiness to the structure. The gate is mounted to swing on hinges 11 12, secured to the post 7, and opposite the said post 7 on the other side of the roadway is another post 13, against which the gate closes. 85

The operating hand-levers are designated at 14 14, one being fulcrumed on the side of the post 5 and the other on the side of the brace 10; and the inner ends of said levers are movably joined together in any suitable way, so as to be capable of rising and falling together at their inner ends whenever they are pulled upon at their outer ends to open or close the gate. Some form of guide is necessary for said levers, and I have shown a simple rectangular wire guide 15, fastened to the side of the central post 6. 95

Projecting from the side of the gate at the hinged end thereof adjacent to the movably-connected ends of the operating hand-lever is a lateral frame 20, preferably of an approximately triangular shape in plan view, although it could be modified in different ways 100

as regards its particular shape. Said later-
ally-projecting frame is secured to the gate
in any suitable manner, preferably a short
distance above the movable latch-bar 22, and
5 it is braced in position by means of the braces
23. At the point where the two side portions
of the lateral frame meet or intersect it is de-
sirable to provide some means for supporting
and limiting the movements of the rocking
10 oscillating lever 25, that operates the latch-
bar, and while different means could be em-
ployed I preferably construct the frame at the
point mentioned with a three-sided offset or
box-like extension 26, the sides 27 thereof
15 serving between them to limit or stop the
movements of the rocking oscillating lever,
as well as to receive the pulling strain neces-
sary to either open or close the gate, while
the third or outer side 28 thereof is provided
20 with an opening 29 for receiving the outer
end of the lever as a bearing therefor. Con-
necting the two sides of said frame is a strip
29', having an opening 29''.

The movable latch-bar 22 is supported to
25 move longitudinally between the duplicate
vertical strips 3 of the gate, and at its outer
end the said bar is constructed in any suit-
able manner to be engaged by a shoulder 30
on the catch 31, that is secured to the post 13.
30 To be so engaged, the end of the latch-bar
could be provided with a T-shaped portion
or else with a loop of either a round, oblong,
or other preferred shape, or instead of this
the latch-bar could be slotted or else provided
35 with a substantial hook or other engaging de-
vice. In fact, so many different constructions
could be resorted to that it is unnecessary to
mention them all, but as a convenient con-
struction I employ a simple rectangular loop
40 32 of a height sufficient to engage the catch
at whatever vertical adjustment to which the
gate may be mounted. At or near its outer
end the said latch-bar is in movable connec-
tion with the upper end of a short rod 33, the
45 lower end of which is pivoted at or near the
outer end of the lower bar of the gate. Other
means than this could be provided as a swing-
ing support for said latch-bar, but the present
one has been employed by me in several for-
50 mer instances, and I have found the same to
be simple and convenient. At a suitable
distance from the inner end of the latch-bar
an opening 34 is formed, which is arranged
slightly nearer the hinged end of the gate than
55 is the opening 29'' of the connecting-strip 29'
of the laterally-projecting frame.

The laterally-projecting frame is preferably
arranged higher than the latch-bar, so that
the outer end of the rocking oscillating lever
60 25 is carried up high enough to be out of the
way of small stock, and also for the purpose
of imparting to said lever a certain degree of
inclination, by which the desired effect is pro-
duced upon the latch-bar with but slight
65 movement to the lever. Thus the said lever
25 is bent or formed at its upper and outer
end with an eye or loop 35, and also with a

short member 36', that is inserted through the
opening 29 of the offset or extension 26 of the
lateral frame, it being noted that the said eye 70
or loop 35 is in movable connection with the
lower end of the connecting-bar 38, the upper
end of which is in movable connection with
the inner end of one of the operating hand-
levers. The said eye or loop 35 and member 75
36' of the lever are so proportioned that the
former is elevated above the upper edge of
the limiting-stop of the lateral frame, and in
this way the connection with the connecting-
bar is never prevented from working prop- 80
erly, and the short member 36' is permitted
to rock from side to side, so as to impart the
proper oscillating movement to the longer arm
or member 40 of the lever. This said longer
arm of the lever passes down through the 85
slightly-enlarged opening 29' of the connect-
ing-strip 29' of the frame on the gate, and the
end of the same enters the opening in the
latch-bar. As thus disposed the lever is in-
clined downwardly in the direction of the side 90
of the gate, as well as having its inner end in-
clined slightly in the direction of the hinged
end of the gate, or to an extent sufficient to
impart movement to the latch-bar necessary
to release the same. 95

The post 5 is also provided with a catch-
plate 50, having a shoulder by which the latch-
bar is engaged when the gate is opened, and
while in its open position the latch-bar is in
its projected or advanced position in virtue 100
of the fact that the position of the rocking
oscillating lever and the connecting-bar is
then reversed.

On pulling upon one of the hand-levers to
open the gate the latch-bar will be projected 105
forward by a simple rocking of the shorter
member of the lever from one side to the
other of the stop or extension on the lateral
frame, the longer member being oscillated by
this movement. The pulling strain is then 110
taken almost entirely from the lever and im-
parted to the gate indirectly through the
frame. On closing the gate the reverse is
the action, as is obvious.

As distinguished from either a rocking 115
lever or an oscillating lever *per se*, it will
be observed that the lever 25 combines both
movements, in that the shorter vertical arm
or member thereof simply rocks in its bear-
ing, while to the end of the longer arm there- 120
of an oscillating movement is imparted in
the direction of length of the latch-bar.

Without limiting myself to the precise con-
struction and arrangement of parts shown,
what I claim as my invention is— 125

1. In a gate, the combination of a movable
latch-bar, operating hand-levers for the gate,
a combined rocking and oscillating lever for
operating the latch-bar, and connections be- 130
tween said lever and the operating-levers,
substantially as described.

2. In a gate, the combination of a movable
latch, operating hand-levers for the gate, a
combined rocking and oscillating lever for

operating the latch-bar, a stop for limiting the movements of the lever in both directions, and for receiving the pulling strain upon the gate, and connections between said lever and the operating-levers, substantially as described.

3. In a gate, the combination of a movable latch-bar, a laterally-projecting frame on the side of the gate, operating hand-levers for the gate, a combined rocking and oscillating lever having a longer inclined arm in movable connection with the latch-bar and a shorter vertical arm movably supported by the frame, and connections between the lever at the union of its two arms, and the hand-levers, substantially as described.

4. In a gate, the combination of a movable latch-bar, a laterally-projecting frame on the side of the gate, and constructed with a connecting-strip having an opening and a three-sided offset or stop extension, operating hand-levers for the gate, a combined rocking and oscillating lever having a longer inclined arm

passing through the opening in the connecting-strip and being in movable connection with the latch-bar, and a shorter vertical arm having its bearing in said stop extension, and a bar connecting the lever at the union of its two arms and being in movable connection with the inner end of one of the operating-levers, substantially as described.

5. In a gate, the combination of a movable latch-bar, operating hand-levers for the gate, a frame on the side of the gate, a lever constructed with one arm to rock in the frame and another arm to oscillate the latch-bar, and connections between said lever and the hand-levers, 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:

G. C. WHITE,

CHAS. F. RIECKHOFF.