

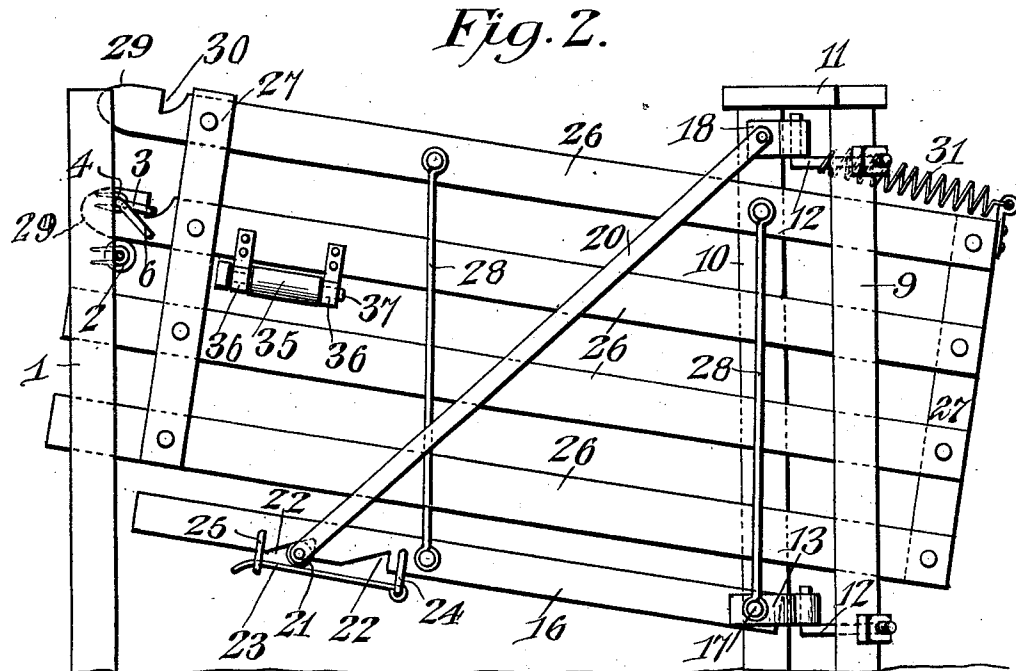
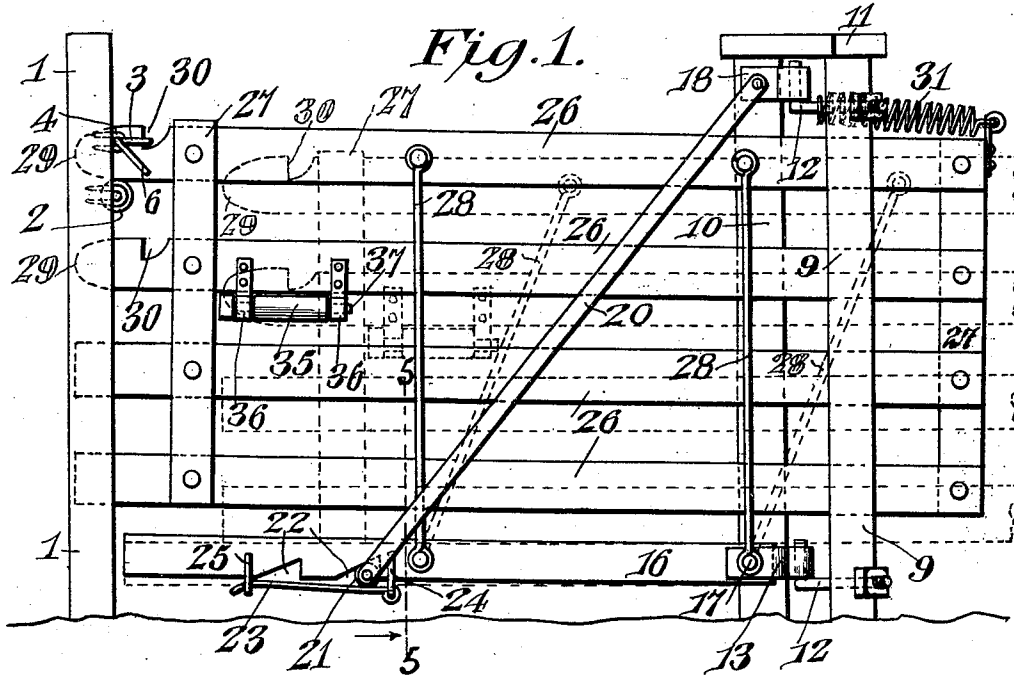
P. N. SWANSON.
GATE.

APPLICATION FILED JULY 26, 1910.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.

999,906.



WITNESSES

James McLaughlin
R. Bishop

Peter N. Swanson, INVENTOR
BY

E. G. Siggers

ATTORNEY

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2 SHEETS-SHEET 2.

Fig. 3.

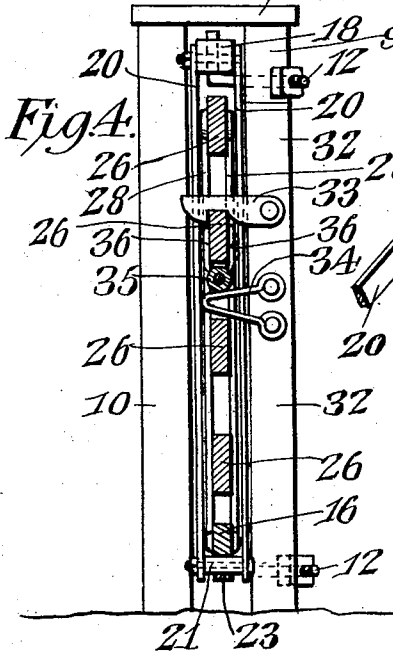
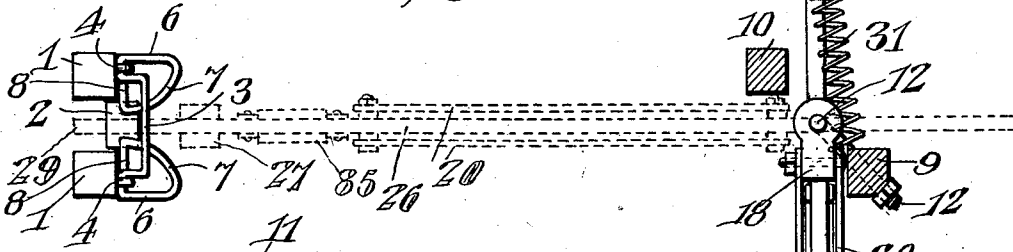


Fig. 6.

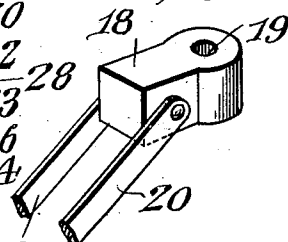


Fig. 7.

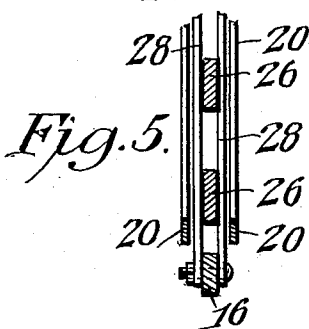
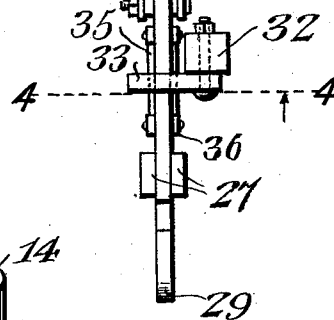
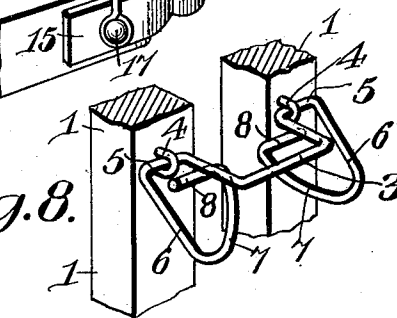


Fig. 8.



WITNESSES

Jas. E. McEachran
R. H. Bishop

Peter N. Swanson, INVENTOR
BY

E. G. Siggers

ATTORNEY

UNITED STATES PATENT OFFICE.

PETER N. SWANSON, OF KEWANEE, ILLINOIS.

GATE.

999,906.

Specification of Letters Patent.

Patented Aug. 8, 1911.

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To all whom it may concern:

Be it known that I, PETER N. SWANSON, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented a new and useful Gate, of which the following is a specification.

This invention relates to improvements in gates, and has for its object the provision of simple means whereby a gate may be given an oscillatory movement to be partly opened to permit the passage of pedestrians, or may be swung around to one side so as to permit the passage of vehicles or live stock.

A further object of the invention is to provide means whereby the gate may be tilted to permit the passage of small stock or to clear deep snows.

A further object of the invention is to provide means whereby the gate will be supported in its closed position in such a manner that the strain upon the main supporting post will be reduced.

These several objects, and such other objects as will hereinafter appear, are attained in the use of the device illustrated in the accompanying drawings, and the invention consists in certain novel features of the same which will be hereinafter first fully described and then more particularly pointed out in the appended claims.

In the drawings,—Figure 1 is a side elevation showing the gate in its closed position in full lines and in its partly opened position in dotted lines. Fig. 2 is an elevation of the gate showing it adjusted to permit the passage of small stock or to enable the gate to be swung over snow drifts. Fig. 3 is a plan view showing the gate closed in dotted lines and fully opened in full lines. Fig. 4 is a vertical section taken on the line 4—4 of Fig. 3. Fig. 5 is a detail vertical section taken on the line 5—5 of Fig. 1. Fig. 6 is a detail perspective view of the upper hinge bracket and the ends of the hangers secured thereto. Fig. 7 is a detail perspective view of the lower hinge bracket and the parts immediately adjacent thereto. Fig. 8 is a detail perspective view of the latch.

In carrying out my invention, I set up, at one side of the road, a pair of latch posts 1 which are spaced apart and have a roller 2 journaled thereon so as to bridge the space

between the said posts near the upper ends thereof. A latch is hung upon these posts above the said roller 2 and consists of a rod bent to form a central bail 3 having its ends journaled in eyes or brackets 4 on the posts and extended laterally beyond the said eyes or bearings, as shown at 5. From these extensions or pivots 5 the rod is bent forwardly, as shown at 6, and then carried inward to provide the deflecting arms 7 which converge toward the posts and terminate in outwardly bent pins or stops 8 adapted to bear against the sides of the posts below the brackets 4, as shown most clearly in Fig. 8, so as to hold the latch in position to be easily engaged by the gate. The converging deflecting portions 7 also serve as guides to assure the ends of the gate rails passing between the posts instead of striking against the same, as will be readily understood on reference to Fig. 3.

At the side of the road opposite the latch posts 1, I set up the hinge post 9 and adjacent the said hinge post, but near the edge of the road I set up a stop post 10. The gate is arranged to move between the posts 9 and 10, as clearly shown in the drawings, and the two posts are connected at their upper ends by a cap plate or brace 11 to maintain them in their relative positions. Pivot pins or hinge members 12 are secured in the hinge posts 9 near the upper and lower ends of the same, and the lower pin 12 is engaged by a bracket 13 having an eye 14 fitting over the pin and having side arms or branches 15 which straddle the end of a carrying bar 16 which is pivotally secured between the said branches 15 by a bolt or pin 17, as will be readily understood. A block 18 is provided with an eye 19 to engage the upper pivot pin 12, and to the sides of this block 18 I pivotally secure the upper ends of a pair of hangers 20 which depend from the said block and pass on opposite sides of the carrying bar 16, while between the lower ends of the said hangers 20, I mount a bolt or pin 21 which is adapted to engage one of a series of notches 22 in the lower edge of the carrying bar 16 and thereby hold the said bar at any desired angle. A leaf spring 23 is arranged below the said pin or bolt 21 and has one end pivoted on a loop 24, while its free end plays within a guard 25, the spring being thus held in intimate contact with the pin or bolt 21 so as to maintain

the same in engagement with the notch 22 to which it is adjusted. In order to reduce the frictional wear of the parts, a roller may be fitted upon the pin or bolt 21 between the
5 hangers 20, as will be readily understood.

The gate is composed of a series of rails or bars 26, and a pair of end bars or braces 27 secured thereto, and is arranged between the hangers 20 and the posts 9 and 10, as
10 clearly shown. The gate is supported from the carrying bar 16 by means of links 28 which have their lower ends pivotally attached to the said bar and their upper ends pivoted to the upper rail or bar 26, as
15 clearly shown. For convenience, the link 28 near the hinge post has its lower end pivotally mounted on the bolt 17 by which the carrying bar is pivoted to the bracket 13. The links 28, of course, are arranged in
20 pairs, the members of each pair being disposed on opposite sides of the gate. The upper bars or rails 26 of the gate have their front ends beveled or rounded off, as shown at 29, so that they may readily engage the
25 roller 2 and thereby guide the gate into a slightly inclined position when the same is closed, and also to facilitate the engagement of the latch with notches 30 in the upper edges of the said rails. The front bar or
30 brace 27 is extended somewhat above the upper gate rail or bar 26 so as to serve as a stop against which the bail 3 of the latch will impinge when the gate is being moved to its closed position so that the latch will
35 be positively caused to drop into the notch 30 to hold the gate closed.

To facilitate the closing of the gate, a spring 31 is secured to the upper hinge pin 12 and to the rear end of the gate, as shown
40 clearly in Figs. 1 and 2, so that the tension of the spring will tend to hold the gate toward the latch posts.

When the gate is to be fully opened, it is disengaged from the latch and is then
45 pushed endwise sufficiently to clear the latch posts. It is then swung around to the side of the road upon the pivotal engagement of the bracket 13 and the block 18 with the pivot pins 12 so as to assume the position
50 shown in full lines in Fig. 3. A retaining post 32 is provided at the side of the road, and this retaining post is equipped with a latch 33 adapted to engage one of the bars or rails of the gate, and also with a guide 34
55 below the said latch which is adapted to coact with a roller 35 on the gate to guide the gate or rail into engagement with the latch. The roller 35 is arranged between loops or brackets 36 secured to and depending from
60 the gate bar or rail, and a pivot pin or axle 37 is inserted through the said loops or brackets to support the roller therebetween and permit the roller to readily rotate. When the gate is swung to its fully opened
65 position, the roller will ride up on the guide

or deflector 34, and the upper edge of the gate rail or bar will be thus caused to engage the latch 33 so that the gate will be held open, as shown in Fig. 4, while live stock may be driven through the gate way. 73

It is thought the use and advantages of my gate will be readily understood from the foregoing description, taken in connection with the accompanying drawings. When the gate is in its closed position, shown in
75 full lines in Fig. 1, its front end will be slightly raised and partly supported by the roller on the latch post so that the hinge post is relieved from strain. When the gate is in the full open position the latch 33 and
80 guide 34 also relieve the hinge post of strain. The elevated position of the front of the gate when closed also reduces the labor of opening the gate, inasmuch as the weight of the gate will tend to carry it in the direction of its length away from the latch
85 posts so that when the latch is lifted out of engagement with the gate, the latter may be readily moved lengthwise away from the latch posts. The spring 31 tends to move
90 the gate lengthwise toward the latch posts overcoming the gravitating action of the gate in the other direction, so that should the person using the gate fail to fully close the same after he has passed, the gate will
95 of itself move across the road to the closed position, so that the passage of live stock will be prevented. Should the ends of the gate rails, in closing, be to one side of the space between the latch posts, the gate rails
100 or bars will strike against the deflecting portions or guides 7 of the latch and will be thereby guided to the space between the latch posts and be prevented from striking against the said posts. Moreover, the gate
105 being locked in either the open or closed position cannot be swung to and fro by wind or stock. The hangers 20 are so adjusted that in the normal position of the gate the pin or bolt 21 will engage the notch 22
110 nearest the hinge post, but if it should be desired to tilt the gate so that it may swing clear of deep snow or it be desired to permit small stock to pass while shutting out large stock, the hangers are adjusted to a different
115 notch 22 so that the gate will be tilted, as shown in Fig. 2. In this position of the gate, the gate rail below the top rail will be engaged by the latch just as the top rail is engaged in the ordinary adjustment. Be-
120 cause of the capability of the gate structure for being swung to an inclined position there is no danger of the gate freezing to the ground in winter. When the gate is being moved from the latch posts, it will oscillate
125 upon the links 28, as clearly shown by the dotted lines in Fig. 1, so that the weight of the gate will not be thrown upon the operator and the opening or closing of the gate may be easily accomplished. The gate 130

may be readily pushed toward the open position, a single impulse being sufficient to cause it to move. The gate is supported solely by the links 28 which are pivoted to
 5 and rise from the carrying bar 16, and this construction will be found to positively prevent sagging of the gate.

The several parts of the device may be constructed of any suitable material and
 10 the posts, the carrying bar, and the gate proper will preferably be constructed of wood, while the links and hangers may be constructed of bars or rods or strap iron.
 15 as may be most convenient. The device is composed of few parts which are arranged in a simple manner and operate easily and efficiently.

While I have described the principle of operation of the invention, together with
 20 the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the
 25 scope of the claims appended hereto.

Having thus described my invention, what I claim is:—

1. The combination of a latch post, a latch mounted thereon, a gate movable in the
 30 direction of its length toward and from the said latch post and adapted to be engaged by the latch, and yieldable means for holding the gate normally projected toward the latch post.

35 2. The combination of a support, a gate hung upon the said support, a latch post, and a spring secured to the support and to the end of the gate and acting on the gate to move it longitudinally and to hold it nor-
 40 mally projected toward the latch post.

3. The combination with a hinge post, of a carrying bar having one end mounted on the said hinge post, hangers having their upper ends mounted on the hinge post and
 45 their lower ends adapted to engage and support the said carrying bar, links pivoted at their lower ends to the said carrying bar, and a gate pivotally secured to the upper ends of the said links.

50 4. The combination of a hinge post, a gate, a carrying bar underneath and supporting the gate and on which latter the gate is adapted to oscillate, said bar having one end connected with the hinge post near
 55 the lower end of the same, a pair of pivoted hangers having their upper ends connected with the hinge post and at their lower ends adapted to engage the carrying bar near the free end thereof, and means on the carrying
 60 bar for holding the hangers in engagement therewith.

5. The combination of a hinge post, a carrying bar mounted thereon near the lower end of the same, hangers supported by the
 65 hinge post at the upper end thereof, notches

in the under edge of the carrying bar, means at the lower ends of the hangers to engage with said notches, and a spring on the carrying bar arranged to hold said engaging means in the notches. 70

6. The combination with a hinge post, of hinge pins therein at the upper and lower ends of the same, a bracket having an eye engaging the lower hinge pin, a block provided with an eye engaging the upper hinge
 75 pin, a carrying bar having one end pivotally mounted between the sides of the bracket and having a series of notches in its under edge, a pair of hangers having their upper ends pivoted to the said block, a pin carried by
 80 the lower ends of the said hangers and adapted to engage the notches in the carrying bar, and a gate supported by the said carrying bar.

7. The combination of a hinge post, a gate
 85 supported therefrom, a retaining post spaced from the hinge post, a gate elevating guide on the retaining post in the path of the gate, and a latch for the gate mounted on said retaining post above the guide
 90 and adapted to engage the gate when elevated by the guide.

8. A gate structure comprising a gate, a carrier therefor having a member wholly
 95 underriding the gate, said member being hinged at one end to move about two axes at right angles one to the other, means for holding the underriding member at different tilted positions, gate upholding members
 100 rising from the carrier and supporting the gate pendently, and means for constraining the gate in one direction of longitudinal movement.

9. A gate structure comprising a supporting post carrying spaced hinge mem-
 105 bers, a gate, a carrier for the gate having a member connected at one end to one of the hinge members and movable with relation thereto about an axis at right angles to the axis of its movement about the hinge, said
 110 carrier member wholly underriding the gate, an upholding member for the carrier member connected to the other hinge and in adjustable relation to the first named carrier member, and gate upholding members
 115 rising from the underriding carrier member and supporting the gate pendently.

10. A gate structure comprising a gate, a carrier therefor underriding the gate and in which the gate is movable in the direction
 120 of its length, a constraining means tending to maintain the gate in predetermined relation to the carrier, and supporting members for the gate carrying the latter pendently
 125 and rising from the carrier.

11. A gate structure comprising a gate, a carrier therefor underriding the gate, and in which the gate is movable in the direction
 130 of its length, a constraining means tending to maintain the gate in predetermined rela-

tion to the carrier, and supporting members for the gate carrying the latter pendently and rising from and pivoted to the carrier.

5 12. A swinging gate structure comprising a gate, an underriding carrier therefor, and gate supporting members rising from the carrier and supporting the gate pendently, the gate and carrier being tiltable
10 about an axis perpendicular to the swinging movement of the gate.

13. A gate bodily movable longitudinally in opposite directions, said gate tending to move in one direction by gravity and constrained to move in the other direction by a
15 force superior to the gravitating tendency to move in the first named direction.

14. A swinging gate structure tiltable on an axis transverse to the axis about which
20 the gate structure will swing, and elevating means for the end of the gate, remote from the hinge about which it will swing, at both

the open and closed positions of the gate structure.

15. A swinging gate structure tiltable on 25 an axis transverse to the axis about which the gate structure will swing, means for holding the gate in different tilted positions, and separate elevating means at respective limits of the swing of the gate active to said
30 gate structure when in the lowered position.

16. A gate structure tiltable in a perpendicular plane to different degrees, and an elevating means for the gate when in the closed position active to said gate irrespec- 35 tive of its degree of tilting.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PETER N. SWANSON.

Witnesses:

HENRY ECKLUND,

CHESTER S. HOLZMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
