

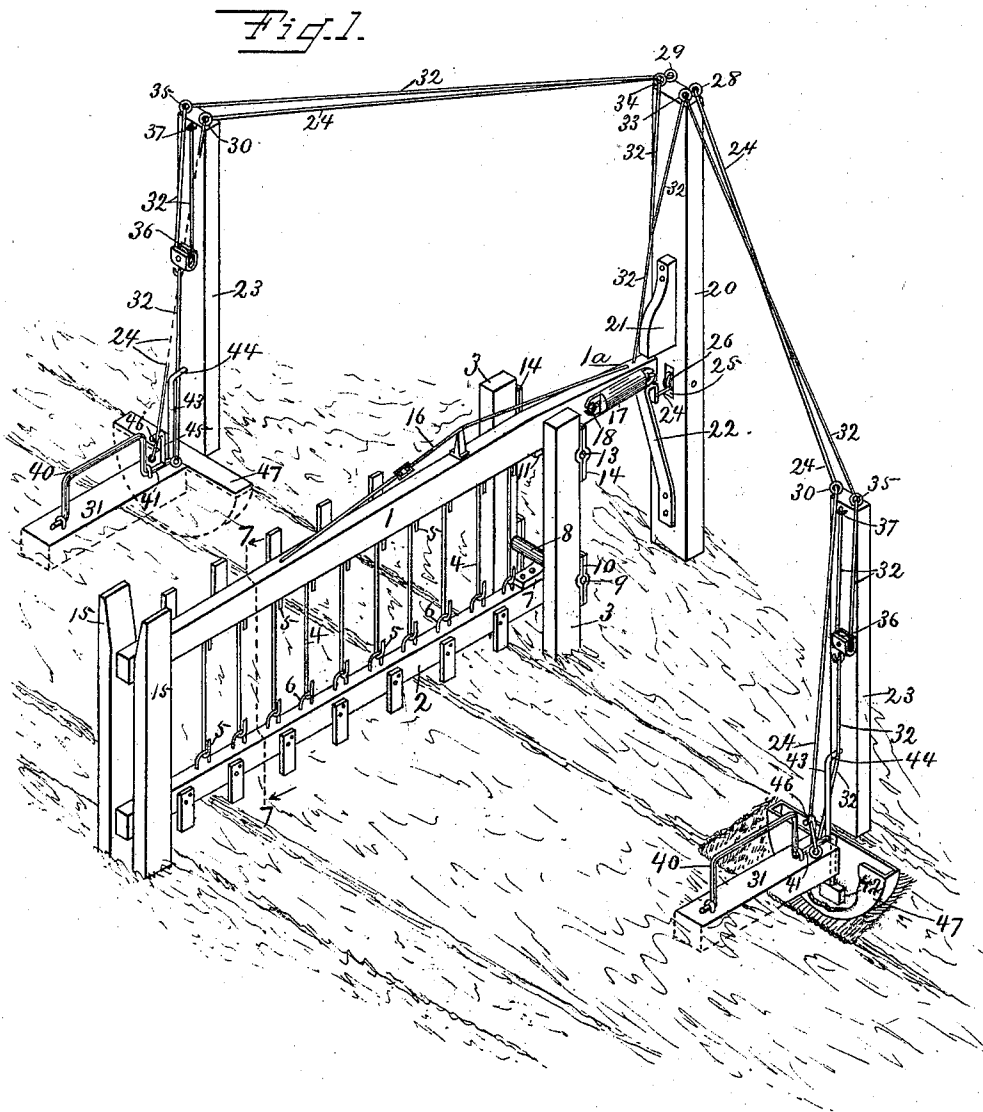
(No Model.)

2 Sheets—Sheet 1.

W. R. GOWDY.
TILTING GATE.

No. 585,470.

Patented June 29, 1897.



Witnesses:
G. R. Richards.
H. M. Richards.

Inventor:
Wm. R. Gowdy.
By H. B. Richards,
Atty.

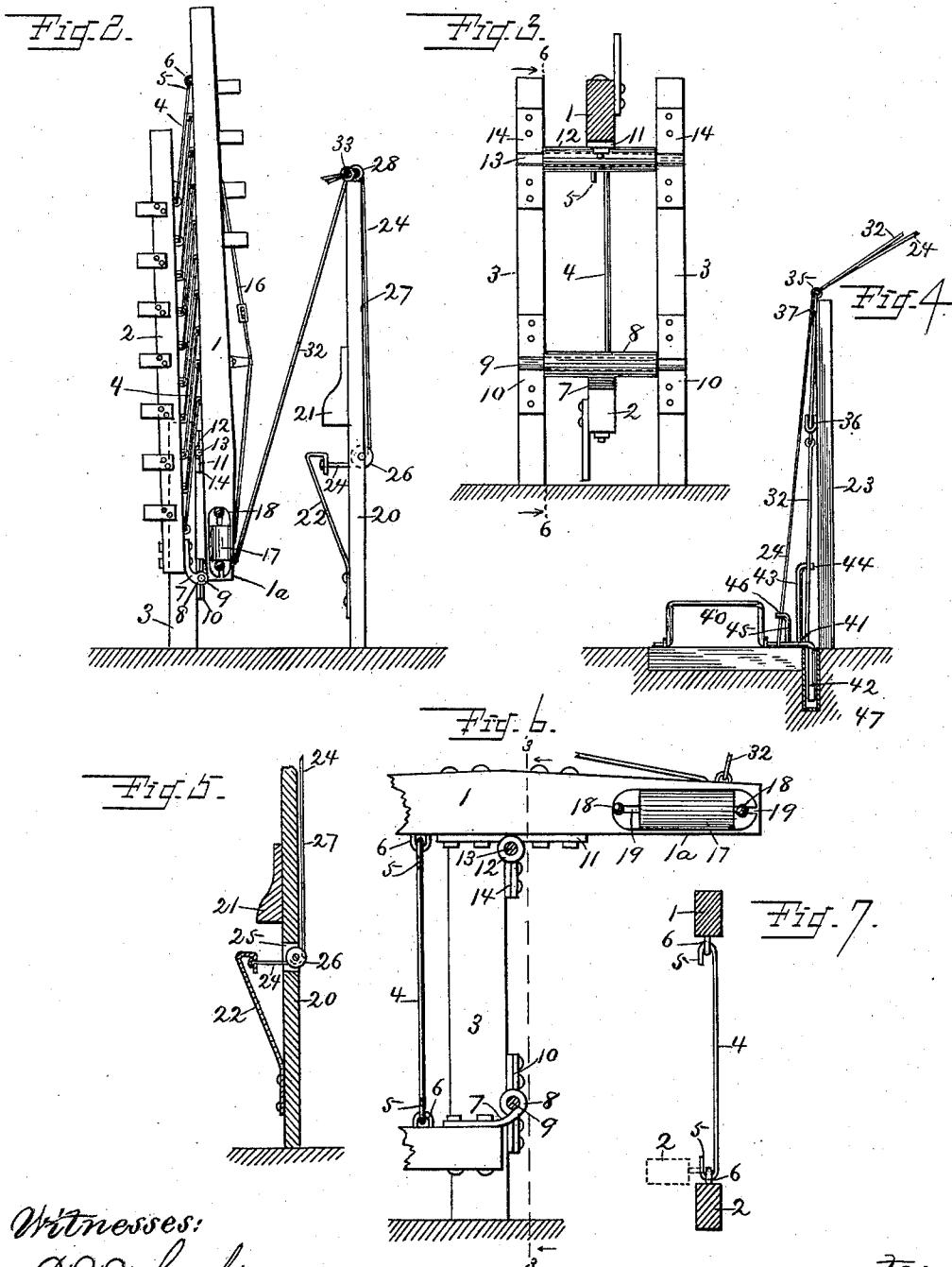
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UNITED STATES PATENT OFFICE.

WILLIAM R. GOWDY, OF KIRKWOOD, ILLINOIS.

TILTING GATE.

SPECIFICATION forming part of Letters Patent No. 585,470, dated June 29, 1897.

Application filed March 29, 1897. Serial No. 629,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. GOWDY, a citizen of the United States, residing at Kirkwood, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Tilting Gates, of which the following is a specification.

My invention has relation to tilting gates.

One object of the invention is to provide improved means for opening and closing the gate.

Another object is to provide improved means for connecting the top and bottom rails of the gate.

A further object is to provide improved means for hinging or pivoting the gate to the posts.

Further objects of the invention are hereinafter specified.

These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts, more fully described hereinafter, and particularly pointed out in the claims.

A gate embodying the different parts with their structural peculiarities and the combinations forming the subject-matter of my improvements is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of the gate and its actuating mechanisms, showing the gate in its closed position; Fig. 2, a side elevation of the gate, a hinge or pivot post, and the latch-post. The gate-operating cords are only partly shown in this figure. Fig. 3 is an elevation of the hinge or pivot posts; sectional elevation of the top gate-rail in line 3 3 in Fig. 6, and end elevation of other parts of the gate; Fig. 4, an elevation of one of the gate-approach posts or side posts and adjacent parts; Fig. 5, a vertical sectional elevation of the latch-post and adjacent parts; Fig. 6, a sectional elevation in the line 6 6 in Fig. 3 and side elevation of one end of the gate and other adjacent parts; Fig. 7, a transverse sectional elevation of the gate in the line 7 7 in Fig. 1.

The reference-characters herein used indicate, respectively, the same parts in the different figures of the drawings.

The gate is formed of a top rail 1 and lower or bottom rail 2 and rail-connecting parts hereinafter described. The rail 2 extends through between the pivot-posts or gate-sup-

porting posts 3 and there terminates, while the rail 1 has an end 1^a extended beyond said posts. A series of hook-rods 4 are pivotally connected with the rails 1 and 2 by a hook 5 on each end of said rods, which hooks are engaged with eyes or staples 6, which are fixed in the confronting sides of said rails. The staples 6 on both rails are alined or are located so that the openings through them are transversely of the gate in order that the series of hooks 5, after being engaged with the staples of one rail, may be engaged with the staples of the other rail by turning said rail into the position shown by dot lines at Fig. 7.

Should it become necessary at any time for shipment or other purposes to separate the rails 1 and 2 and the hook-rods, it can be done easily and quickly by turning one of the rails into the position shown by same dot lines. When the gate is mounted for use, the rails cannot be so separated from the hook-rods without first removing the gate from its hinges or pivots.

A strap 7, fixed to the upper side of, extends beyond the end of the lower rail and has an eye 8, Fig. 6, in its outer end, which carries a hinge-bolt or pivot-bolt 9. Both ends of the bolt 9 project beyond the ends of the eye 8 and are journaled in bearing-boxes 10, which are fixed to the rear sides of the gate-supporting posts 3. A strap 11, fixed to the under side of the top rail, has an integral eye 12, which carries a hinge-bolt or pivot-bolt 13. Both ends of the bolt 13 extend beyond the ends of the eye 12 and are journaled in bearing-boxes 14. The outer ends of the eyes 8 and 12 rest against the posts 3, and thus aline the gate in tilting or swinging to its open position or closed position, and the posts 15 act as keepers in guiding the gate to and retaining it in its closed position. The top rail 1 is stayed by a truss-rod 16 and has counterweights 17 on its extended end. The weights 17 are adjustable endwise of the rail and are held after such adjustments by screw-bolts 18, which pass through slots 19 in the ends thereof and into the rail. The weights 17 are adjusted to slightly overbalance the other end of the gate in its normal condition and can be further adjusted to overbalance said end when loaded with snow or otherwise loaded.

A latch-post 20 is located in rear of and in

same vertical plane as the gate, and in such position relatively to the gate that when the gate is closed its extended end 1^a will be near to said post. The gate is locked in its closed position by a stop-block 21 above its extended end 1^a, which stop-block is fixed to the post 20, and by a spring-latch 22 below its same end. The spring-latch 22 is fixed at its lower end to the post 20 and inclines outwardly therefrom to its upper end. In its normal position the upper end of said latch is a short distance from the post 20, Fig. 2, so that it can be drawn toward the post to remove it from beneath the extended end 1^a of the top rail.

Side posts 23 are located, one on each side of the gate, substantially in line with the posts 3 and at suitable distance therefrom. A gate-opening cord 24, fixed at one end to the upper end of the latch or detent 22, passes through an aperture 25 in the post 20, partly around a pulley 26, and thence upwardly a short distance to where it is bifurcated and forms two branches or continuations of the cord 24, one of which branches passes through the eye 28 and the other through the eye 29, and thence each extends to and passes through an eye 30 on the top part of its respective side post 23, and thence downwardly to where it is secured at its lower end to a block 31 hereinafter described.

A gate-closing cord 32 is fixed at one end to the outer end of the extended end 1^a of the top rail and passing upwardly a short distance is bifurcated to form two branches or continuations of the cord 32, one of which branches passes through an eye 33 on top of the post 20 and the other through an eye 34 on top of same post. Thence each extends to its respective side post 23 and to its operating mechanism as follows: Each branch 32 extends to and through an eye 35 on top of a side post 23, thence downwardly to and partly around a pulley 36, and thence upwardly to near the top of the side post, where its end is fixed to said post at 37. What may be termed an "extension" of the cord 32 is connected at its upper end to the pulley-frame which carries the pulley 36, extends downwardly, and is fixed at its lower end to the block 31. Thus looping the cord around the pulley 36 and fixing its end as described, in connection with the other arrangements of the cord, produces a differential closing mechanism by means of which only one-half the movement of the cord 32 below the pulley 36 is required to close the gate which would be required if said loop in the cord was dispensed with.

On the upper side of each block 31 is pivotally mounted an ordinary double crank-shaped lever 40, each of which levers has one of its ends 41 extended, to which extended end is fixed the upper end of a weighted pendulous rod 42 for the purpose of sustaining the lever 40 in its normally upright position in an ordinary manner and as shown. A

longer radius-arm 43, fixed at one end to the extended end 41 of the lever 40, projects upwardly and has its upper end bent to form an arm 44, which extends across and in contact with the cord 32. A shorter radius-arm 45 also projects upwardly from the extended end of the lever 40 and has its upper end bent to form an arm 46, which extends across and in contact with the cord 24. The weighted pendulous rod 42 swings in a suitable box 47.

Assuming the gate to be in its closed position, as shown at Fig. 1, when a vehicle approaches it from either side the wheel next the side post 23 coming in contact with the adjacent lever 40 will force and turn said lever over toward the gate and thereby force the end 46 of the arm 45 against the cord 24, so as to draw on said cord and thereby draw the detent or latch 22 from beneath the extended end 1^a of the top gate-rail 1. The gate thus released, the weights 17, acting by gravity, will tilt or turn the gate upwardly on the hinge-bolts or pivot-bolts 9 and 13 into its upright or open position. (Shown at Fig. 3.) When the vehicle-wheel passes from the lever 40, the weight 42 will restore said lever to its upright normal position. The gate will now remain in its upright position until the vehicle passes through and its wheel comes in contact with the other lever 40 and forces or turns it in a direction away from the gate and thereby forces the end 44 of the arm 43 against the cord 32, thereby drawing on said cord and upwardly on the end 1^a of the top gate-rail turns or tilts the gate again into its closed position. As the gate closes, its extended end 1^a acts as a cam to press the detent or latch 22 toward the post 20 until the end 1^a passes the upper end of the latch and permits said latch to spring outwardly beneath it and thereby lock the gate in its closed position.

The differential action of the cord 32, hereinafter described, is such that the arm 43 without objectionable length will give the necessary movement to said cord to close the gate. The block 21 limits the descent of the free end of the gate. When the vehicle-wheel passes off of the last-described lever 40, the weight 42, connected therewith, will right said lever.

If preferred, or if the vehicle-wheel should miss the lever 40 in approaching the gate, the driver may grasp the cord 24 and drawing thereon will draw back the latch 22 and thereby permit the gate to swing or turn into its upright or open position. The gate may then be closed, as hereinbefore described, or the driver may miss the lever 40 after the vehicle passes through the gate and grasping the cord 32 draw thereon and close the gate in a now evident manner.

It will be evident from the foregoing that the gate may, if preferred, be operated by the cords 24 and 32 without the lever 40, arms 43 and 45, or weighted arm 42.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post located substantially as described, and a spring-latch adapted to be actuated by said extended end of the top rail, in closing the gate, substantially as described.

2. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post, a spring-latch mounted on said latch-post to hold the gate from movement in one direction, and a block fixed thereto to hold the gate from movement in an opposite direction, substantially as described.

3. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts and provided with counterweights, of a latch-post, a spring-latch mounted on said latch-post, side posts, and a gate-opening cord connected at one end with said latch, and formed into branches, one of which extends to each of the side posts, substantially as described.

4. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post, side posts, and a gate-closing cord connected at one end with the extended end of the top rail, then bifurcated and its branches threaded through guide-eyes on the latch-post, thence each branch to and threaded through a guide-eye on a side post, thence downward to and partly around a pulley, and thence upwardly to a fixing-pin, and a continuation of said cord from the pulley-frame downwardly, substantially as described.

5. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post, spring-latch, side posts, a gate-closing cord connected at one end with the extended end of the top rail, then bifurcated and its branches threaded through guide-eyes on the latch-post, thence each branch to and threaded through a guide-eye on a side post, thence downward to and partly around a pulley, and thence upwardly to a fixing-pin, a continuation of said cord from the pulley-frame downwardly, and a gate-opening cord connected at one end with said spring-latch and formed into branches, one of which extends to each of the side posts, substantially as described.

6. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post, adjacent to said extended end, side

posts, a gate-closing cord connected at one end with the extended end of the top rail, then bifurcated and its branches threaded through guide-eyes on the latch-post, thence each branch to and threaded through a guide-eye on a side post, thence downwardly to and partly around a pulley which it carries, and thence upwardly to a fixing-pin, a continuation of said cord from the pulley-frame downwardly and fixed at its lower end, a pivotally-mounted lever, a weighted pendulous arm connected with said lever, and a radius-arm projecting from one end of said lever and bent to contact with the cord extending from the pulley-frame downwardly, substantially as described.

7. In a tilting gate, the combination with the supporting-posts, and the gate pivotally connected with said posts and having the end of its top rail extended beyond said posts, of a latch-post adjacent to said extended end, a spring-latch, side posts, a gate-closing cord connected at one end with the extended end of the top rail, then bifurcated and its branches threaded through guide-eyes on the latch-post, thence each branch to and threaded through a guide-eye on a side post, thence downwardly to and partly around a pulley which it carries, and thence upwardly to a fixing-pin, a continuation of said cord from the pulley-frame downwardly, and fixed at its lower end, a gate-opening cord connected at one end with said spring-latch and formed into branches, one of which extends to each of the side posts, and thence downwardly to where fixed at its lower end, and a pivotally-mounted lever with a pendulous arm connected therewith, a radius-arm projecting from one end of said lever and bent to contact with the gate-closing cord extending from the pulley-frame downwardly, and another radius-arm projecting from the end of said lever and bent to contact with the gate-opening cord, substantially as described.

8. In a tilting gate, the combination comprising a top rail, a bottom rail, a series of staples in the confronting sides of said rails, all of which staples have the openings through them transversely of said rails, and a series of rail-connecting rods with hook-shaped ends, substantially as described.

9. In a tilting gate, the combination comprising a top rail, a bottom rail, rail-connecting rods pivotally connected at their ends with said rails, pivot-posts, pivot-bearings fixed to said posts, and strap-hinges fixed to said rails, each hinge having eyes extended laterally beyond its sides, and a pivot-pin mounted in each of said eyes and extended beyond the eye, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM R. GOWDY.

Witnesses:

H. M. RICHARDS,
B. F. HOLCOMB.