

No. 842,805.

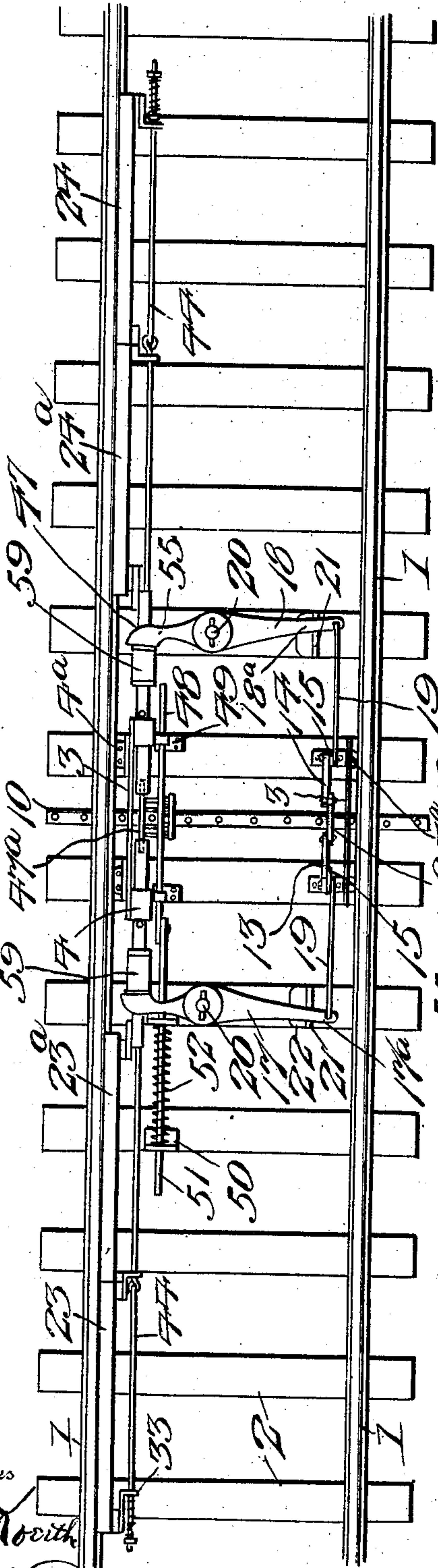
PATENTED JAN. 29, 1907.

W. H. MYERS.
RAILROAD GATE.

APPLICATION FILED FEB. 6, 1904.

3 SHEETS—SHEET 1.

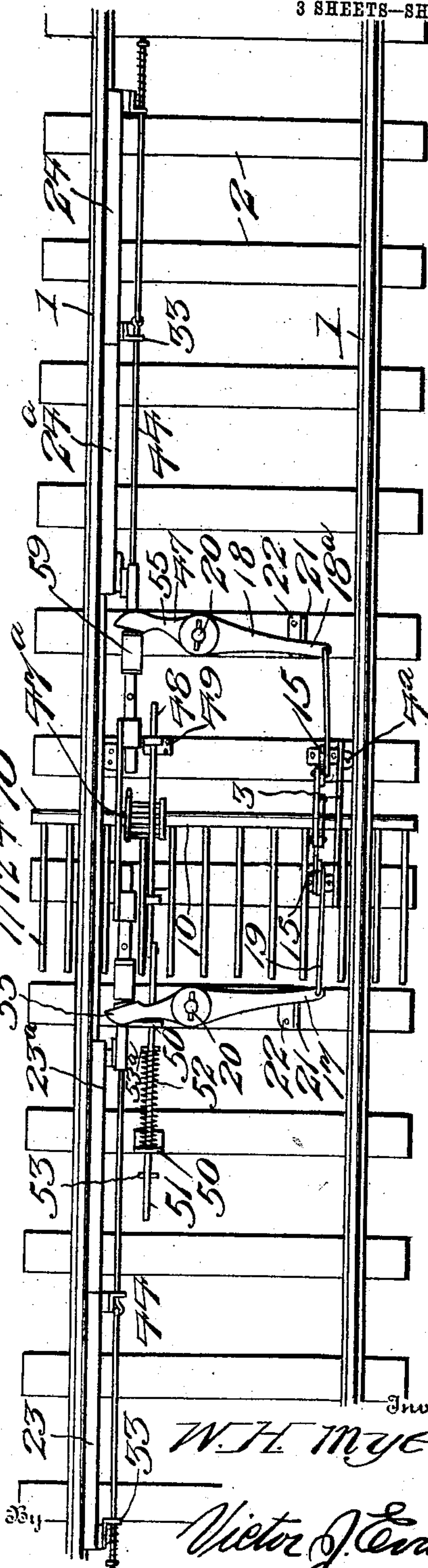
Fig. 1.



Witnesses

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Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 7.

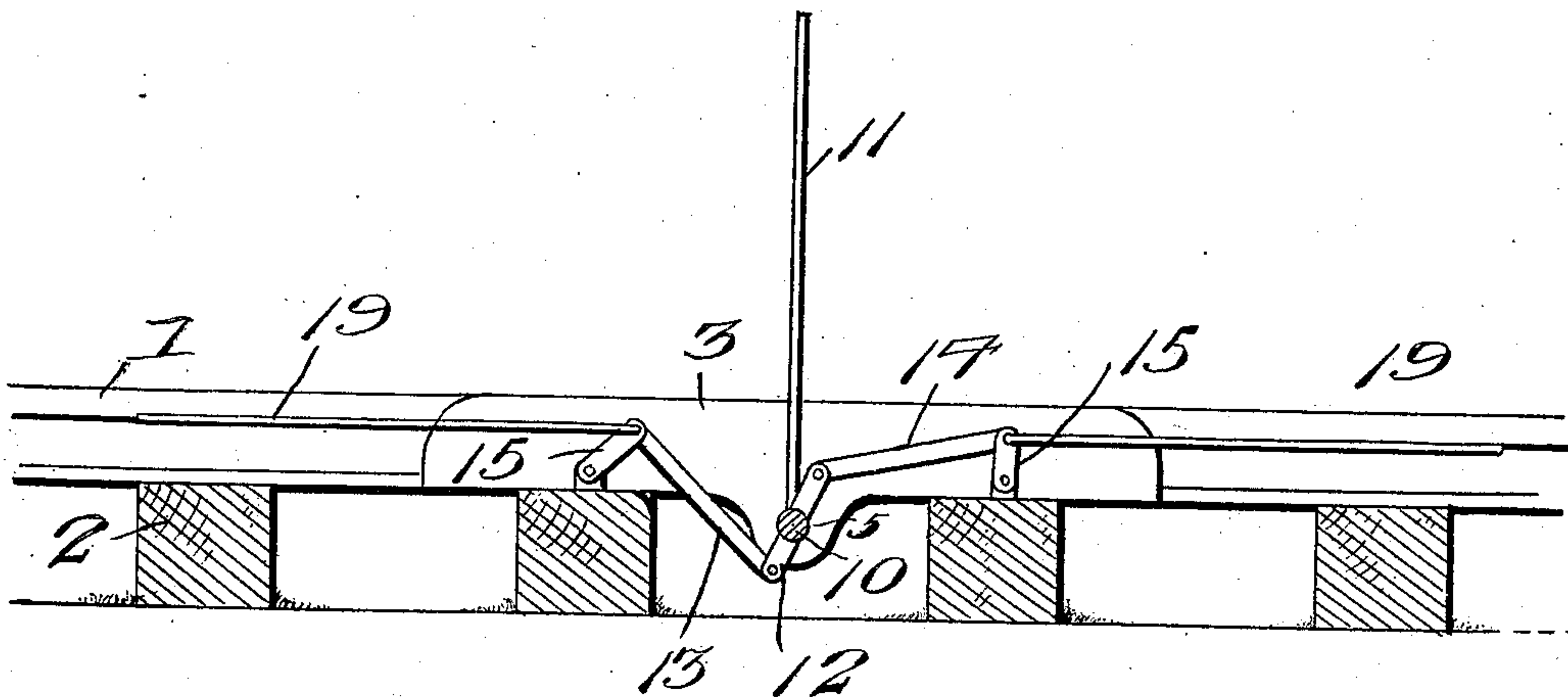
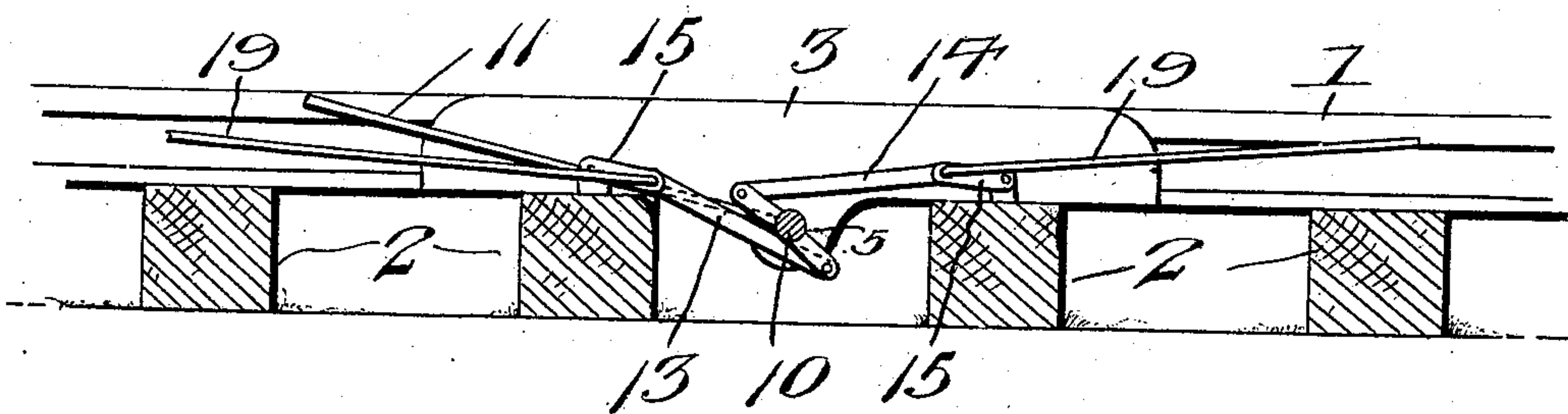


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM H. MYERS, OF HARRISONBURG, VIRGINIA.

RAILROAD-GATE.

No. 842,805.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed February 6, 1904. Serial No. 192,364.

To all whom it may concern:

Be it known that I, WILLIAM H. MYERS, a citizen of the United States, residing at Harrisonburg, in the county of Rockingham and State of Virginia, have invented new and useful Improvements in Railroad-Gates, of which the following is a specification.

My invention relates to railroad-gates; and its primary object is to provide a novel and highly-useful device of this character which is adapted to be used at railway-crossings and to normally close the space made by a railroad passing through an inclosed field, thereby preventing cattle from passing therefrom by means of the railroad, and to be automatically operated by an approaching train, so as to be swung downwardly to permit the train to pass, and which will automatically return to its normal closed position after the train has passed.

With the above and other objects and advantages in view the invention consists in the construction, combination, and arrangement of parts more fully hereinafter described, claimed, and illustrated in the accompanying drawings, which disclose the preferred form of my invention, and in which—

Figure 1 is a top plan view of a portion of a railway-track embodying the improved gate construction and showing the gate in closed position. Fig. 2 is a view similar to Fig. 1, showing the gate opened. Fig. 3 is a longitudinal vertical section through the railroad-track and gate structure as arranged in Fig. 1. Fig. 4 is a detail perspective view of a portion of one of the tracks, illustrating a part of the gate-operating mechanism. Fig. 5 is an enlarged detail longitudinal section through a portion of the gate - operating mechanism and supporting means therefor, particularly showing the means for locking the gate against accidentally assuming an opened position. Fig. 6 is a detail perspective view of a modified form of part of the gate-operating mechanism. Fig. 7 is a longitudinal vertical section through the railroad-track and gate structure, as shown arranged in Fig. 1, illustrating particularly the means for lowering the gate, said means being shown in the position assumed when the gate is in its normally closed position. Fig. 8 is a view similar to Fig. 7, illustrating the position the means for lowering the gate assume when the

gate has been thrown into its open position thereby. Fig. 9 is a detail perspective view of one of the supports, and Fig. 10 is a detail perspective view of one of the guides in which the rack-bar is mounted.

Referring to the drawings by reference-numerals, 1 1 designate the track-rails, and 2 the ties of an ordinarily-constructed railway. Supports 3 3 are rigidly secured upon two of the ties and consist of bars or elongated plates arranged in edgewise position. These supports are arranged parallel to the track-rails, and one of the supports is provided with terminal guides 4, arranged on its inner side and at each end thereof. Each of the supports is provided with horizontally-disposed flanges or plates 4^a, by means of which it may be secured in applied position. Each of the supports is provided with a depending bearing 5, in which is journaled a shaft 10 transversely of the railway. This shaft has an oscillating movement in the bearings, and it is provided with a series of parallel arms 11 of equal length.

The shaft 10 and arms 11 constitute the gate proper, and the arms are of a length sufficient to obstruct the passage of cattle or pedestrians over the tracks at the point where the gate is located. The shaft 10 is provided with a lever 12, projecting in opposite directions therefrom, and secured to the opposite ends of said lever are links 13 and 14, the opposite ends of said links being hinged to the upper ends of levers 15, which are fulcrumed upon the ties on opposite sides of the shaft 10. Levers 17 and 18 are fulcrumed upon the ties on opposite sides of the shaft 10, and connecting the reduced portions of said levers and the levers 15 are shifting-rods 19. The fulcrums of the levers 17 and 18 are located at intermediate points, as at 20, and may be of any suitable construction. The reduced extremities of the levers bear loosely on upstanding flanges 21 of angle-plates 22, which are secured to the ties upon which the levers are fulcrumed, and by this means the levers are prevented from becoming depressed below a normal plane or disarranged in such manner as to interfere with the sensitive operation of said levers. Each of said levers is adapted to have its end thrown inwardly toward the shaft 10 to oscillate said shaft to throw the

gate downwardly into open position. The levers are thus turned upon their fulcrums to open the gate by means of track devices, which are adapted to be acted upon by an approaching train. Numerous kinds of track devices may be employed for lowering the gate from either side of the latter and conjointly serve to lower the gate and retain the gate in its lowered or opened position, and it will be understood that the track devices may be located at any distance on opposite sides of the gate when the improved mechanism is applied to a single-track line, whereby the gate may be operated by a train coming from either direction.

The track devices preferred include pairs of tread rails or members 23 23^a and 24 24^a, these pairs being arranged on opposite sides of the gate and in close proximity to one of the track-rails. Each of the rails 23^a and 24^a is conterminously disposed with its rail 23 or 24, respectively, and hinged or movably mounted in such manner as to permit the free end thereof to be depressed, and thereby avoid shock or jar and liability of breakage of the several parts of the improved mechanism when the wheels of a car first strike or engage the primary operating mechanism. At each end of sections 23 and 24 is a hanger comprising a pair of depending arms 26, connected by a pin 27 to one arm of a bell-crank lever 28, fulcrumed by a pin 29 to the depressed extremity of a plate 31, secured to the upper side of the adjacent tie. The ends of the tread-rail sections 23^a and 24^a nearest the shaft 10 are also provided with similar hangers connected to bell-crank levers like those just described. The remaining arms of the bell-crank levers, which normally project upwardly, have inwardly-extending angular offsets 33 with openings therethrough for a purpose which will be presently explained. The ends of the tread-rail sections 23^a and 24^a, which abut upon the ends of the tread-rail sections 23 and 24, have depending connecting-straps 35, which are attached at their lower ends to cross-pins 36, held in the arms 26 of the hangers above the pins 27. The bell-crank levers 28^a nearest the shaft 10 are provided with slots 36 and are devoid of the angular offsets 33.

Instead of plates 31, carrying the bell-crank levers 28, the modified form of connecting devices shown by Fig. 6 may be used, and said form consists of two parallel plates 38, disposed longitudinally close to the tread-rail sections and spaced apart from each other. The plates 38 have bearings 39, in which is movably mounted a crank-shaft 40, the latter being provided with a terminal crank 41, secured to the tread-rail 23. Rising from the shaft 40 is a crank-arm 42, having an upper projecting offset 43, this offset 43 being provided with an opening.

Extending loosely through the offsets 33 or 43 are controlling-rods 44 44, jointed at intermediate points to give them sufficient freedom to avoid jamming. The inner ends of these controlling-rods are connected to the terminals of shanks 45 of locking bars or bolts 46, said shanks having connection with the ends 55 55 of the levers 17 and 18 in order that when either pair of track devices is depressed the inner end of the lever 17 or 18 may be forced toward the shaft 10. For instance, if the inner end 18^a of the lever 18 is forced inwardly toward the shaft 10 by the depression of the track devices 24 24^a the shifting-rod 19 will turn the arm 15 upon its fulcrum inwardly toward said shaft 10. Through virtue of the disposition of the lever 12 upon the shaft 10 and its connection with the lever 15 by the link 14, said shaft will be so oscillated as to throw the gate toward the left to open the same. A depression of the track devices 23 23^a would cause said gate to be swung downwardly in the same direction, as is apparent.

In order to return the gate to its normal closed position after the car has passed, I provide the shaft 10 with a lantern-wheel 47^a and mount a spring-controlled rack-bar 48 in guides 49, secured to the ties on either side of said shaft. Secured to one end of the rack-bar 48 and slidably mounted in guides 50 is a link 51. Mounted upon the link 51 and interposed between the guides 50 is an expansion-spring 52, which is adapted to be compressed between the pin 53^a and the remote guide 50 when the gate is lowered, and which when the train has passed is adapted to expand and operate the rack-bar 48. This operation of the rack-bar 48 will return the gate to its normal closed position in a manner that is apparent to those skilled in the art. In order to limit this movement of the rack-bar 48, I provide the link 51 with a pin 53, which is adapted to engage the adjacent guide 50.

The lantern-wheel 47^a is provided with diametrically-disposed shoulders 54, with which the inner ends of the locking-bars 46 are adapted to engage to prevent the shaft from having any movement, thereby locking the gate in its normal closed position against accidental or unauthorized opening. The ends 55 of the levers 17 and 18 are provided with depending heads 56, through which the shanks 45 of the locking-bars 46 loosely pass. Between washers 57 58, carried by the shanks 45, are tubular closures or sleeves 59, and interposed between the closed ends of the sleeves 59 and the washers 58 are springs 60. The springs and coöperating parts just described throw the locking-bars into normal position after the train has passed from the track devices, and, as before stated, these locking devices will retain the gate in its normal closed position after it has been returned

to such position by the mechanism just described.

The operation of the device may be stated in the following manner: When a train has reached the point where the flanges of its wheels will engage the track devices, the bell-crank levers 28 are caused to move the offsets 33 away from the shaft 10. This movement of the offsets will cause the controlling-rods to withdraw the locking-bar to which they are attached from engagement with one of the shoulders 54. After the locking-bar is withdrawn from engagement with said shoulder a further movement of said bar will cause the closure or sleeve 59 to come into engagement with the washer 58, which in turn will engage the depending portion 56 of the lever 18, thus turning said lever upon its fulcrum. The turning of the lever 18 upon its fulcrum will cause the gate to be swung downwardly in the manner hereinbefore pointed out. The movement of the track devices on one side of the gate will cause a corresponding movement of the track devices on the other side.

Having thus fully described the invention, what is claimed as new is—

1. The combination with track-rails, of tread-rail sections arranged close to one of said track-rails, a gate movably disposed in transverse relation to the track-rails and having a lock device thereon, a slidable locking means cooperating with said device and connected to the tread-rail sections, and shifting-levers engaging said means and also connected to the gate.

2. The combination with track-rails, of tread-rail sections arranged close to one of said track-rails, a gate movably disposed in transverse relation to the track-rails and having a lock device thereon, a slidable locking means cooperating with said device and connected to the tread-rail sections, shifting-levers engaging said means and also connected to the gate, and a spring-actuated resetting-bar for restoring the gate to normal position.

3. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, tread-rail sections arranged in proximity to one of the track-rails, a locking means slidably cooperating with a portion of the gate and connected to the tread-rail sections, shifting-levers loosely engaging a part of the locking means and also connected to the gate, and a resetting mechanism for restoring the gate to normal position.

4. The combination with track-rails, of a gate oscillatably mounted in transverse relation thereto and having a shouldered locking device thereon, oppositely-disposed locking-bars normally engaging the said locking device, tread-rail sections arranged adjacent to one of the track-rails and connected to the said bars, transversely-extending shifting-le-

vers engaging portions of the locking-bars and connected to the gate for throwing the latter, and means for restoring the gate to normal position.

5. The combination with track-rails, of an oscillatable gate arranged in transverse relation thereto and having a gear device thereon with a shouldered head, a crank on the gate, oppositely-disposed slidable locking-bars normally held in engagement with the said shouldered head, tread-rail sections in proximity to one of the track-rails having cooperating means connected to the locking-bars, transversely-extending shifting-levers on opposite sides of the gate, engaging portions of the locking-bars and also connected to the crank on the gate, and a spring-actuated resetting-bar having teeth engaging said gear device.

6. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, a series of fulcrumed bell-crank levers, each of said bell-crank levers having one of its arms provided with offsets, tread-rail sections pivotally secured to said bell-crank levers, each tread-rail being loosely connected to the other, a locking means slidably cooperating with a portion of the gate, means for connecting the locking means with the offsets of the bell-crank levers, and shifting-levers engaging said locking means and also connected to the gate.

7. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, fulcrumed levers, tread-rail sections pivoted to said levers, each tread-rail section being loosely connected to the other, a slidable locking means cooperating with said tread-rail sections, and shifting-levers engaging said means and also connected to the gate.

8. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, tread-rail sections pivotally mounted, each section being loosely connected to the other, a slidable locking means connected to said tread-rail sections, and shifting-levers engaging said means and also connected to the gate.

9. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, tread-rail sections, a locking means slidably cooperating with a portion of the gate and connected to the tread-sections, a shifting-lever engaging said means and also connected to the gate, and a spring mounted upon the locking means and engaging the shifting-lever.

10. The combination with track-rails, of a gate movably disposed in transverse relation thereto and having oscillating movements, fulcrumed levers, one of said levers being

provided with a slot, while another is provided with an offset, tread-rail sections pivotally connected to said levers, each section being loosely connected to the other, a sliding locking means cooperating with a portion of the gate, said locking means having connection with the slot of said lever, means for connecting said locking means to the offset of the other lever and a shifting-lever en-

gaging said locking means and also connected to the gate.

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

WILLIAM H. MYERS.

Witnesses:

JOHN L. FLETCHER,
DAVID L. GILL.