

(No Model.)

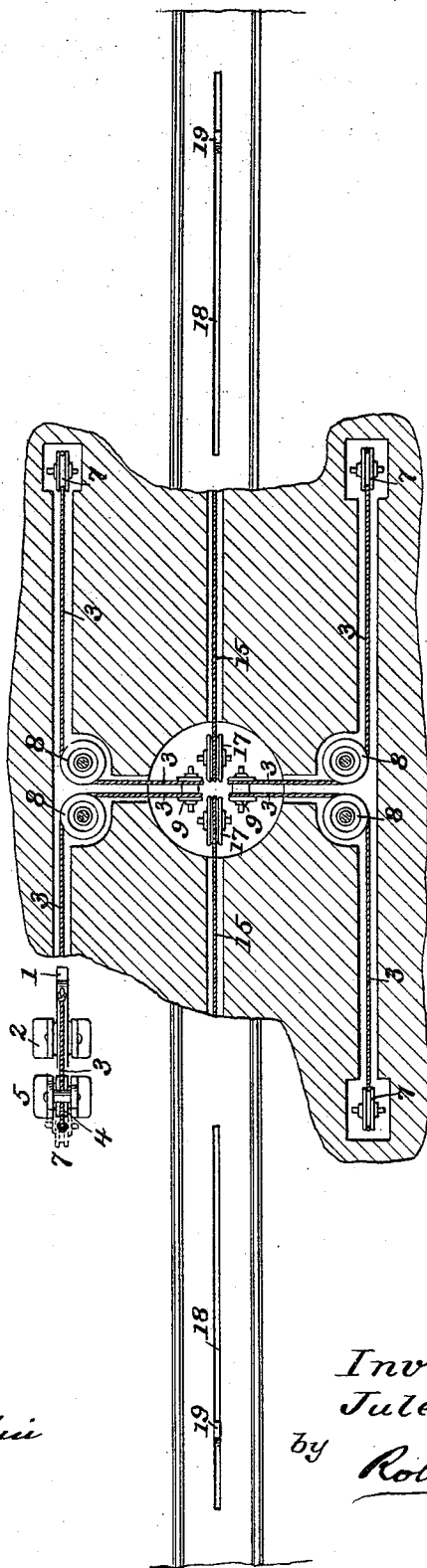
2 Sheets—Sheet 2.

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AUTOMATIC RAILWAY GATE.

No. 542,123.

Patented July 2, 1895.

Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

JULES WEILL, OF CHICAGO, ILLINOIS.

AUTOMATIC RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 542,123, dated July 2, 1895.

Application filed February 4, 1895. Serial No. 537,293. (No model.)

To all whom it may concern:

Be it known that I, JULES WEILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Railway-Gates; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to that type of gates for railway-crossings in which the gates are raised and lowered or opened and closed in an automatic manner by a train of cars passing in either direction; and the objects of the present improvement are to provide a simple and efficient mechanism for such use which is adapted to operate in an automatic manner either a single gate or a series of gates, and is capable of operation by a railway-train passing in either direction along the railway-tracks. I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation illustrating my present invention; Fig. 2, a plan view of the same with portions broken away to illustrate the operative underground connections of the present invention; Fig. 3, an enlarged detail transverse section of one of the longitudinal sliding heads or trucks by which the gate mechanism is actuated.

Similar numerals of reference indicate like parts in the different views.

As represented in the drawings, the gates proper will each consist of a long bar 1, of wood or other suitable material, pivoted in a suitable standard 2 at the side or sides of the wagon-roadway and adapted when lowered to bar or close said wagon-roadway.

3 is the rope or flexible connection by which gate-bar 1 is raised or lowered. This rope or flexible connection 3 passes over a sheave or pulley 4 on the carrying-shaft of the alarm-bells 6 at the upper end of an upright 5, that may form a part of the gate-bar standard 2, if desired, and from thence down to an underground sheave or pulley 7, as shown in Figs. 1 and 2. From the pulley 7 the flexible connection or rope 3 passes along in a horizontal direction to and around a pulley or sheave 8, to and around a pulley or sheave 9, and then

downwardly, to be connected to an operating-weight 10 or other equivalent means by which a pull can be effected upon the rope or flexible connection 3—such, for instance, as a spring or air cylinder and piston. This arrangement of rope or flexible connection and sheaves or pulleys will be duplicated, in accordance with the number of gates employed at a crossing. In the drawings I have illustrated four gates in use with a corresponding number of such flexible connections or ropes and pulleys or sheaves, the whole series of flexible connections being connected in common to the actuating or operating weight 10, which preferably has a central arrangement, as shown in Fig. 1, with relation to the gates and tracks.

11 is a sliding block or truck adapted to move in a guideway 12, preferably by means of the upper and lower bearing-wheels 13 and 14. This truck or block 11 is attached to one end of a flexible connection or rope 15 that passes around a pulley 16, then in a return horizontal direction to a sheave or pulley 17, and then downward to be connected to the common operating-weight 10.

The guideway 12 is arranged between the railway-tracks, as shown, and extends parallel therewith, its upper end being slotted so as to form a longitudinally-extending way 18 for the movement of the trigger or catch 19 of the sliding block or truck 11. This is engaged by any suitable part or projection on the railway-train, so as to be carried along by the same as such train approaches the crossing, and in so doing to raise the operating-weight 10 and release the different gates 1, so that they will descend by gravity and close or bar the wagon-roadway, such gates being of an overbalanced or loaded nature for such purpose.

The trigger or catch 19 is pivoted in the sliding block or truck 11, and is engaged at one side only by a stop-pin 20, so that it can only be engaged by the railway-train in passing toward the roadway or crossing, the construction being such that it will be merely tilted down by the railway-train in passing in the opposite direction, to wit: in running away from the crossing, after which it will be returned to its usual upright position by its weighted lower end 21.

In order that the block or truck 11 may

only be carried a specified distance along with the train, and that just sufficient to raise the common operating-weight 10 to allow the crossing-gates 1 to descend or close, the guideway 12 is formed with a downwardly deflected portion 22 down which the sliding truck or slide 11 moves, so as gradually and finally to remove the upper end of the trigger 19 out of the path of the projection or other part of the railway-train by which it had been previously engaged and carried along. Such arrangement of the guideway and truck or slide and its connections to the common weight 10 constitutes the automatically-operating portion of the apparatus, by which the railway-gates are lowered by an approaching train and raised by the departure of the same; and such automatic mechanism will be duplicated at each side of the crossing for each and every railway-track upon the railway road-bed. In the drawings I have illustrated a single railway-track, with a corresponding pair of such automatic mechanisms in proper position with relation to the wagon-roadway and the railway-track.

The operation of my invention is as follows: An approaching train before reaching the crossing moves the sliding block or truck 11 to raise the common weight 10 through the instrumentality of the flexible connection 15 and the sheaves or pulleys 16 and 17. The raising of the weight 10 releases the different flexible connections 3, so that the railway-gates will be free to descend and bar or close the roadway-crossing. After the passage of the railway-train past the sliding block or truck 11, the weight 10 is released to draw said block or truck 11 back to its original position, as well as to lift or open the gates.

In practical use the automatically-operating mechanism of the crossing-gate, of which the sliding block or truck 11 constitutes the operating part, may be located at any required distance away from the roadway-crossing, in which case the length of the guideway 12 and the amount of vertical movement of the operating-weight 10 will be correspondingly increased, with an increase in the distance of location away from the crossing, it being in all cases the intention that the railway-train shall reach the crossing during the time that elapses in the raising of the gates and the return of truck or slide to its original position, such return movement of the slide or truck being slow as compared with the speed of the train.

The raising of the gates may be made very tardy and in a controllable manner when desired by providing a retarding device, such, for instance, as the the ordinary dash-pot retarder used in steam-enginery and other well-known branches of the mechanical arts; and where the apparatus is used on roads in which the trains are run at an excessive speed, elas-

tic connections between the cords 15 and the weight 10 may be employed, so that the impact of the approaching train against the trigger 19 will not tend to rupture such cord.

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

1. An automatic railway crossing gate, comprising in combination, a pivotal gate 1, an operating weight 10, a flexible connection 3, between the gate and the weight, a sliding block 11, provided with a pivoted trigger 19, arranged in the path of the railway train, and a flexible connection 15, between such block 11, and weight 10, substantially as set forth.

2. An automatic railway crossing gate, comprising in combination, a pivoted gate 1, an operating weight 10, a flexible connection 3, between the gate and the weight, a sliding block 11, provided with a pivoted trigger 19, arranged in the path of the railway train, a guideway 12, for such block, having a depressed end portion 22, and a flexible connection 15, between the block 11, and the weight 10, substantially as set forth.

3. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, arranged in the path of the railway train, and at opposite sides of the wagon roadway, and flexible connections 15, between such blocks 11, and the weight 10, substantially as set forth.

4. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, provided with pivoted triggers 19, arranged in the path of the railway train, and at opposite sides of the wagon roadway, and flexible connections 15, between such blocks 11, and the weight 10, substantially as set forth.

5. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, provided with pivoted triggers 19, arranged in the path of the railway train, and at opposite sides of the wagon roadway, guideways 12, for such blocks 11, having depressed ends 22, and flexible connections 15, between the blocks, 11, and the weight 10, substantially as set forth.

In testimony whereof witness my hand this 30th day of January, 1895.

JULES WEILL.

In presence of—
ROBERT BURNS,
GEO. H. ARTHUR.