





# UNITED STATES PATENT OFFICE.

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## RAILROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 615,681, dated December 13, 1898.

Application filed December 2, 1896. Serial No. 614,205. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS M. COTTLE, a citizen of the United States, residing at Axtell, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Railroad-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railroad-gates of that class designed for use at crossings or bridges, as stock-guards, or in any other localities where such a gate is required, and more particularly relates to improvements in gates designed to be automatically operated by the passage of trains.

The object of the invention is to provide a railroad-gate which is simple, durable, and efficient and which may be erected at a less cost than the ordinary stock-guards, at the same time proving more durable than such devices.

The invention further contemplates a railroad-gate which shall obviate the necessity of any unevenness in the road-bed at its point of erection, and, furthermore, also aims to provide a gate which may be used on any curve.

With these objects in view the invention consists, substantially, in the construction, combination, and arrangement of parts, as will be hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a section of road-bed having the herein-described gate applied thereto. Fig. 2 is a transverse sectional view of the road-bed with the gate and means for operating the same in elevation, and Fig. 3 is a detail perspective view of the bracket for connecting the push-rod with the gate-standard.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 1 designates the rails of a track, which may be of any approved construction and are secured in any usual manner to the cross-ties 2. The ties 2 immediately adjacent to the point at which the gate is erected are preferably of a greater length than the ties of the bed, and secured

to one of said elongated ties are the supporting-frames 3 for the swinging gates 4. Each of the frames 3 has its ends bent at right angles to its body portion to form parallel ears 5, the lower of said ears passing beneath the tie to which the frames are secured, and thereby permitting such frames to be rigidly attached thereto by bolts or their equivalents. For the purpose of strengthening the frames 3 braces 6 are employed, and said braces may be of any suitable construction, so as to permit the same retaining the supporting-frames 3 in their proper position. The ears 5 of each of the frames 3 are provided with aligned openings, in which are disposed the vertical standards 7 of the gates 4, said standards having their upper ends contracted, so as readily to enter the upper ears. Adjacent to the lower ends of the standards 7 an annular recess is cut to enable the lower ends of said standards 7 to be journaled in the corresponding ears 5.

Arranged at the outer side of each of the rails 1 is a presser-bar 8, said presser-bars occupying an oblique position to the rails 1 and normally projecting above the upper edge of said rails. The upper edges of the presser-bars 8 are slightly beveled to present a flat surface to the tread of the wheels of a passing train, through which medium said presser-bars are operated, for a purpose to be presently described.

Disposed along the outer side of each of the rails 1 is a tumbling-rod 9, which tumbling-rods are substantially parallel with said rails, and for the purpose of connecting the presser-bars with said tumbling-rods hinges 10 are employed, whereby when the presser-bars 8 are forced downwardly by a passing train the tumbling-rods 9 will be rotated. In order that said tumbling-rods may remain in their proper operative positions, retaining-plates 11 are used, said plates comprising a flattened portion designed to be attached to the ties by any suitable means and also a securing-lip bent at right angles to said flattened portion and recessed to receive the tumbling-rods, whereby the latter are securely held from displacement.

The ends of the presser-bars 8 which are distant from the gates 4 are pivotally connected to securing-rods 12, which in turn



are pivoted to anchor-plates 13, the latter being spiked or otherwise secured to the ties, and thereby effecting a connection with the presser-bars which will admit of the latter being freely operated by a passing train.

Projecting downwardly from the tumbling-rods 9 immediately adjacent to the gates 4 are operating-arms 14, which arms have a rigid connection with said tumbling-rods, and the lower ends of said operating-arms 14 are provided with openings 15, in which are secured the ends of a coiled spring 16, the latter being designed to retract said operating-arms when the same have been forced apart by reason of the operation of the presser-bars 8.

Pivotally secured to the operating-arms 14 by means of pins 17 or their equivalent are push-rods 18, the outer ends of which are secured in brackets 19, rigidly connected to the lower ends of the gate-standards 7. Said brackets 19 are provided with spaced parallel lugs 20, which are provided with alined openings adapted to receive a swivel-eye 21, the ends of said eye being disposed in the alined openings of the spaced parallel lugs 20 and designed to slide in said openings during the operation of opening and closing the gates.

The central portion of the eye 21 is, however, enlarged and perforated to provide for the passage of a pivot-pin 22, said pin passing through an opening in the outer end of the push-rod 18, and thus effecting a connection between said rods and the brackets 19.

For the purpose of preventing the gates 4 from opening when the presser-bars 8 remain at rest a latch 23 is arranged between the rails 1, and said latch 23 comprises a pair of angle-levers 24, the upper ends of said angle-levers being bent at substantially an obtuse angle to their main portion, said upper ends lying substantially horizontal and having their extreme ends bent upwardly and at right angles thereto, thus insuring a positive preventive for the opening of the gates.

The angle-levers 24 are pivoted together by a pin 25 at the juncture of the upper ends and the main portion, and the lower ends of said angle-levers are provided with a series of openings 26, through which pass the pivotal pins 17, whereby at the swinging of the operating-arms 14 the lower ends of said angle-levers will be caused to recede from each other, thus lowering the latches 23 and permitting the same to descend below the path of the gates 4 as the same are swung open or closed. The purpose of the openings 26 is to enable the angle-levers 24 to be secured to the operating-arms 14 at any desired point, and thus regulate the position of their upper ends above the ties of the track-bed. Adjacent to the supporting-frames 3 and suitably secured to one of the ties 2 at each side of the rails 1 are stops 27, said stops projecting upwardly a sufficient distance to limit the inward movement of the gates. A guide-plate 28 is also disposed between the rails 1 in con-

tact with the angle-levers 24, so that said guide-plate will properly support said levers during their upward and downward movement.

The operation of the herein-described gates will be understood by those familiar with such devices. As the train approaches the gate the wheels of the former pass upon the beveled upper edges of the presser-bars 8, and as the wheels continue their passage over said presser-bars the latter are depressed and through the medium of the hinges 10 rotate the tumbling-rods 9 and cause the operating-arms 14 to recede from each other against the tension of the coil-spring 16. This movement of the operating-arms 14 causes the push-rods 18 to move outwardly, and by reason of the outer ends of said push-rods being connected to the brackets 19 the latter will swing the gates 4 open, thereby permitting the passage of the train through the same. As the operating-arms 14 are caused to recede from each other the angle-levers 24 are also operated and their upper ends lowered below the path of the gates 4, so that no obstruction is in the path of said gates and the same may readily swing open. During the outward movement of the push-rods 18 the ends of the swivel-eye 21 slide within the alined openings of the spaced parallel lugs 20, whereby friction is reduced and free operation of these parts is permitted. After the train has passed over the presser-bars 8, the ends of the latter terminating substantially beneath the gates 4, said presser-bars will return to their normal position above the track-rails 1 by means of the coil-spring 16 being connected to the operating-arms 14, and the tension of said spring will draw said arms toward each other, the push-rods being also drawn inwardly and the gates closed, the angle-levers being also raised, by reason of said coil-spring 16, to a position where said gates will be prevented from opening.

From the foregoing it will be obvious that I have provided a railroad-gate which is simple, durable, and efficient and which may be erected at a less cost than the ordinary stock-guard, at the same time proving more durable than such devices, and it will further be seen that the herein-described gate will obviate the necessity of any unevenness in the road-bed at the point of erection.

In the event that it is desired to apply the gate to a curve this may be accomplished by simply jointing the tumbling-rods 9, the latter thus conforming to the curved track and being permitted to operate freely.

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

1. In a gate of the class described, the combination with gates suitably supported so as to close across a track and adapted to be operated by a passing train, of presser-bars arranged adjacent to the rails, tumbling-rods also arranged adjacent to the rails and suit-



ably connected to the presser-bars, whereby the latter are adapted to operate said tumbling-rods, suitable connections between said tumbling-rods and the gates for opening and closing the latter when said tumbling-rods are operated, and a latch pivotally connected to the tumbling-rods and adapted to be operated thereby to permit the gates being operated, substantially as described.

2. In a gate of the class described, the combination with gates suitably supported and adapted to close across a track, of presser-bars arranged adjacent to the rails and adapted to be operated by a passing train, tumbling-rods also arranged adjacent to the rails and suitably connected to the presser-bars, operating-arms secured to said tumbling-rods, push-rods connected to said operating-arms and the gates, whereby the latter are opened and closed when the tumbling-rods are operated, a latch also connected to the operating-arms and adapted to be operated thereby, whereby said gates may be readily opened, and means for retracting said operating-arms and thereby closing the gates when pressure on the presser-bars has been removed, substantially as set forth.

3. In a gate of the class described, the combination with gates suitably supported and adapted to close across a track, of presser-bars arranged adjacent to the rails and adapted to be operated by a passing train, tumbling-rods also arranged adjacent to one of the rails and provided with suitable connections for retaining the same in their operative positions, said tumbling-rods being suitably connected to the presser-bars, whereby the former are adapted to be operated by the latter, operating-arms secured to said tumbling-rods, push-rods pivotally connected to said operating-arms and the gates and adapted to operate the latter when the tumbling-rods are operated, angle-levers arranged between the rails and pivotally secured together, said levers forming a latch whereby the gates are held in closed position, and means for retracting the operating-arms to close the gates when pressure on the presser-bars has been removed, substantially as set forth.

4. The combination with the standard of a gate, of a bracket rigidly secured thereto and provided with spaced parallel lugs, a swivel-

eye disposed between said parallel lugs having its ends slidably mounted therein, and a suitably-operated push-rod connected to said swivel-eye, whereby the gate may be opened or closed, substantially as set forth.

5. In a gate of the class described, the combination with gates suitably supported and adapted to close across a track, presser-bars arranged adjacent to the rails, tumbling-rods connected to the presser-bars so as to be operated thereby, operating-arms secured to said tumbling-rods, push-rods pivotally connected to the operating-arms and the gates, whereby the latter are operated by said tumbling-rods, angle-levers arranged between the rails and pivotally connected together, said angle-levers forming a latch for retaining the gates in closed position, and stops for limiting the closing of said gates, substantially as set forth.

6. In a gate of the class described, the combination with gates, presser-bars arranged adjacent to one of the rails and adapted to be operated by a passing train, tumbling-rods also arranged adjacent to said rails and connected to the presser-bars so as to be operated by the same, operating-arms secured to the tumbling-rods, push-rods pivotally secured to said operating-arms and having a suitable connection with the gates, whereby the latter are opened or closed by the operation of the presser-bars, and a latch disposed between the rails and adapted to retain the gates in closed position, said latch comprising a pair of angle-levers the upper ends of which are bent at an obtuse angle to their body portion, and pivotally connected at their angles, the lower ends of said levers having a pivotal connection with the operating-arms, whereby said arms are adapted to raise and lower the latch, and a spring connected to the operating-arms and adapted to retract the same when pressure on the presser-bars is removed to permit the closing of the gates, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS M. COTTLE.

Witnesses:

GEORGE DAVIS,  
L. G. FRAZIER.