

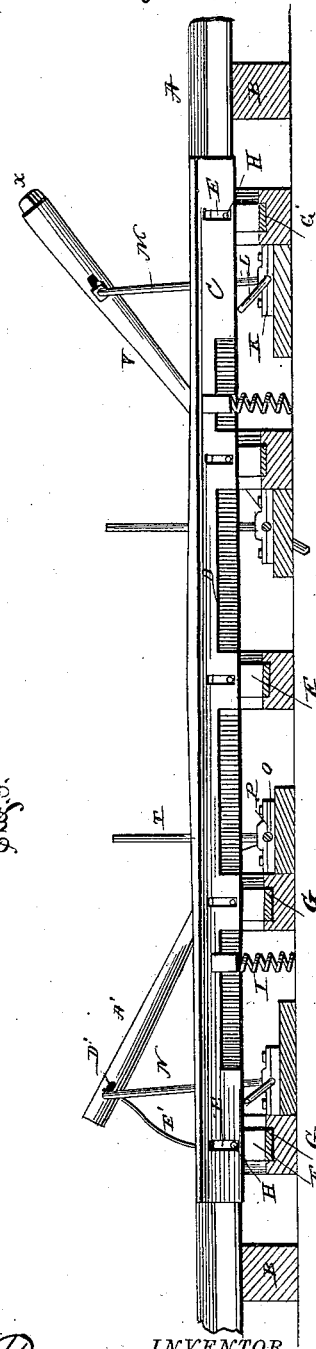
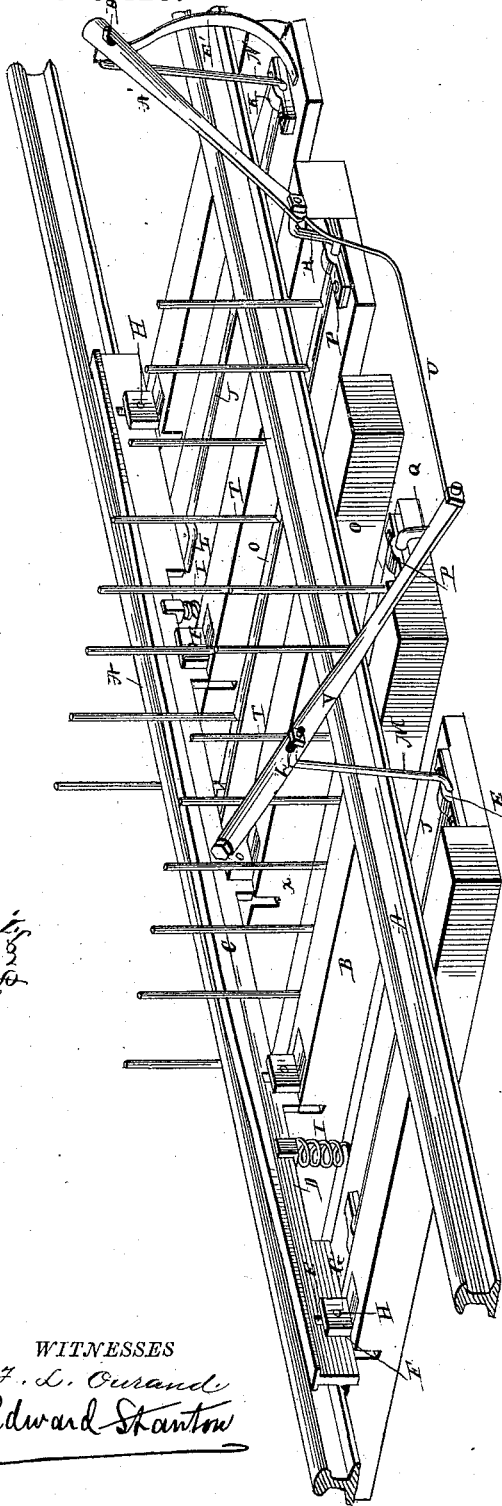
(No Model.)

2 Sheets—Sheet 1.

R. A. HARTMAN.
RAILWAY GATE.

No. 345,429.

Patented July 13, 1886.



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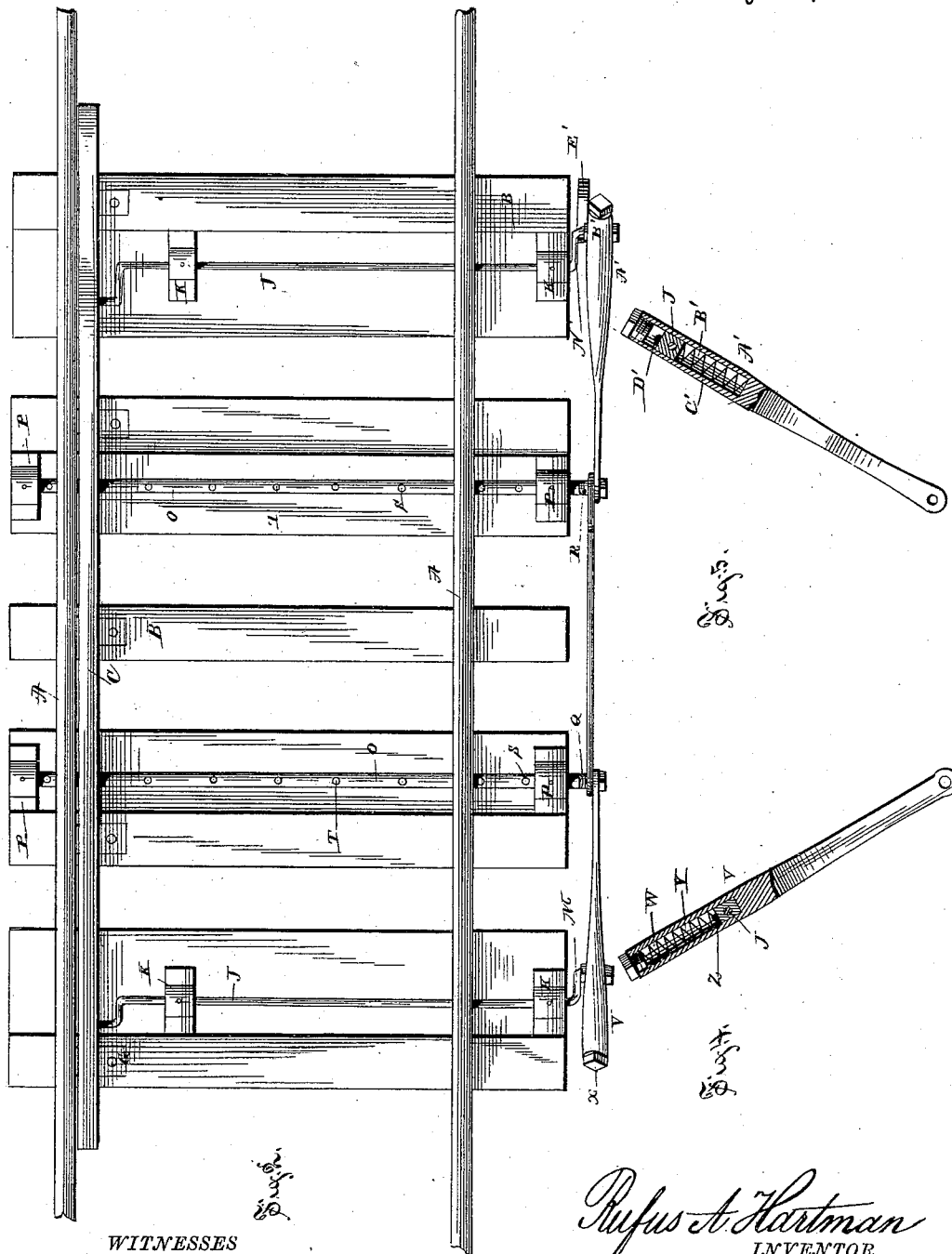
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UNITED STATES PATENT OFFICE.

RUFUS ALBERT HARTMAN, OF BERWICK, PENNSYLVANIA.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 345,429, dated July 13, 1886.

Application filed April 13, 1886. Serial No. 198,671. (No model.)

To all whom it may concern:

Be it known that I, RUFUS ALBERT HARTMAN, a citizen of the United States, and a resident of Berwick, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Gates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a railway-track provided with my improved gate. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal vertical sectional view on line *x x*, Fig. 2; and Figs. 4 and 5 are longitudinal vertical sectional views of the push-rods of the mechanism.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to that class of automatic railway-gates which are placed across the track at crossings of roads or streets for the purpose of preventing cattle or other animals from straying upon the track, and for the purpose of preventing any passage upon the track from the crossing; and it consists in the improved construction and combination of parts of such a gate; which is suitably connected to a rail placed parallel with the inner side of one of the rails of the track, which rail may be depressed by the flanges of the wheels of a passing train, opening the gates, as hereinafter more fully described and claimed.

In the accompanying drawings, the letters A A indicate the rails of the track, which rails are secured in the usual manner to the ties B, and a rail, C, having its middle portion higher than its ends, is placed parallel to the inner side of one of the rails of the track, in such a manner that it may be engaged by the flanges of the wheels running upon the said rail and be depressed by the same. The under side of the rail is provided with a longitudinal rib, D, which is formed with vertical slots E at intervals, and the slotted portions slide in slots F, formed in blocks G, secured upon the ties, the said slotted blocks having bolts H

between the lips formed by the slots, upon which the rail slides with the slots in its rib. The lower edge of this rib rests at intervals upon coiled springs I, or similar springs, which will raise the rail so as to bring its lower ends slightly below the level of the tread of the rail, and its raised central portion above the same, so that the flanges of the wheels may run smoothly upon the rail and gradually depress it. Two shafts, J J, are journaled in suitable transverse bearings, K, under the rails, and the inner ends of these shafts are formed into cranks L, projecting to one side and bearing with their pins against the lower edge of the rail, so that they may be tilted downward when the rail is depressed, and the outer ends of these shafts are provided with long arms M and N, projecting upward. The gates are composed of two shafts, O O, journaled in suitable bearings, P P, transversely under the track, and one of these shafts is formed with a downwardly-projecting crank, Q, at its outer end, while the other shaft is provided with an upwardly-projecting crank, R, at its end. The gate-shafts have suitable perforations, S, and the inner ends of the gate-pickets, T are inserted into these perforations, and the two cranks of the gate-shafts are connected by means of a connecting-rod, U. The lower end of a push-rod, V, is pivoted to the downwardly-projecting gate-crank, and the upper end of this push-rod is hollow, as shown at W, and provided with a plug, X, in its upper end, which confines a coiled spring, Y, within the hollow portion, and the lower end of this hollow portion is provided with two longitudinal slots, Z Z, through which the pin of one of the upwardly-projecting arms may project, bearing against the lower end of the spring. The lower end of another push-rod, A', is pivoted to the upwardly-projecting gate-crank, and projects obliquely in the direction opposite to the incline of the other rod, and this rod has its upper end, B', hollow, and provided with a coiled spring, C', and the sides of this hollow portion next the upper end of the same are formed with longitudinal slots D', through which the pin of the other upwardly-projecting arm passes, and in which it slides, bearing against the upper end of the spring. The upper free end of a curved

flat spring, E', bears against the pin of the said arm and forces it outward away from the opposite push-rod. It will now be seen that when a train arrives at one of the ends of the spring-cushioned bulged rail, which ends extend a considerable distance from the gates, the said rail will be depressed by the flanges of the wheels, and will depress the inner cranks upon the operating-shafts. The arms upon the operating-shafts will push against the springs within the push-rods, and will push or draw the said rods in the same direction, causing the upwardly-projecting crank upon one gate-shaft and the downwardly-projecting crank upon the other shaft to be tilted, respectively, downward and upward to the same side, tilting the gates toward each other, resting with their pickets upon the ties and allowing the train to pass over them. The ends of the pickets may be bent to allow the gates to be laid flat, with the bent ends resting upon the ties. The flanges of different wheels will be of different widths, according to the make of the wheels and to the wear they have suffered, and for the purpose of allowing for the greater depression by wider flanges the rail may be depressed farther than its normal depression, and the pins of the rocking arms slide in the slots in the push-rods bearing against springs, which will allow the arms to be tilted to a greater extent than the normal degree of tilting, the springs being of a sufficient stiffness to tilt the gates without being compressed, so that they will only be compressed when the gates have been tilted down and the operating-arms are tilted still farther by the extra depression of the rail. The rod connecting the two cranks of the gate-shafts will allow both the gates to be tilted if only one end of the rail is depressed, and the flat curved spring bearing against the pin of one of the operating-arms will serve to raise the gates after they have been tilted by the passing train.

The gates may be placed at a curve when the rail is curved.

I am aware that railway-gates have heretofore been operated by means of a rail parallel with the track, which in turn operated upon transverse crank-shafts and push-rods; and also that hollow push-rods having a spring within them have been used, and I do not claim such construction, broadly; but

I claim and desire to secure by Letters Patent of the United States—

1. In a railway-gate, the combination of a spring-cushioned rail placed at the side of one rail of the track, transverse shafts journaled under the ends of the spring-cushioned rail, and having cranks at their inner ends pointing in the same direction, and bearing, with the upper sides of their pins projecting in a horizontal plane, against the under side of the rail, arms projecting upward from the outer ends of

the shafts, a curved spring bearing under one of the arms, transverse gate-shafts journaled under the track, and having cranks at their ends, one projecting upward and the other downward, a connecting-rod connecting the cranks, and push-rods pivoted to the upper ends of the arms and to the cranks upon the gate-shafts, as and for the purpose shown and set forth.

2. In a railway-gate, the combination of blocks having upwardly-projecting lips with transverse bolts, and secured upon the ties, a rail having a longitudinal rib upon its under side, sliding with vertical slots upon the bolts between the lips, and having means for operating the gate when depressed, and springs bearing upward against the under side of the rail, said rail being curved upward, so that its ends are below and its middle above the top of the track, as and for the purpose shown and set forth.

3. In a railway-gate, the combination of a shaft provided with an arm, and having means for being tilted by a passing train, a push-rod having a hollow portion with a coiled spring inclosed, and longitudinal slots in one end of the hollow portion, having the pin of the arm passing through said slots and bearing against the spring, and means for operating the gate connected to the end of the push-rod, as and for the purpose shown and set forth.

4. In a railway-gate, the combination of a rail supported by springs parallel to a rail of the track, transverse shafts at the ends of the rail, having horizontally-projecting cranks at their inner ends bearing against the under side of the rail, and having upwardly-projecting arms with laterally-projecting pins at the outer ends, transverse gate-shafts having the gate-pickets, and having each a crank at the end, one projecting upward and one downward, a rod connecting the cranks, a push-rod having its lower end pivoted to the upwardly-projecting crank, and having its upper end hollow, and provided with a spring and with longitudinal slots for the pin of one arm, bearing against the spring, a push-rod having its lower end pivoted to the downwardly-projecting crank, and having its upper end hollow and provided with a screw-plug inclosing a spring, and formed with a slot in each side of the lower end of the hollow portion for the pin of the other arm, which bears against the lower end of the spring, and a flat curved spring bearing with its upper end against one of the pins of the upwardly-projecting arms, as and for the purpose shown and set forth.

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

RUFUS ALBERT HARTMAN.

Witnesses:

J. F. CHAMBLIN,
MINOR HARTMAN.