

No. 741,781.

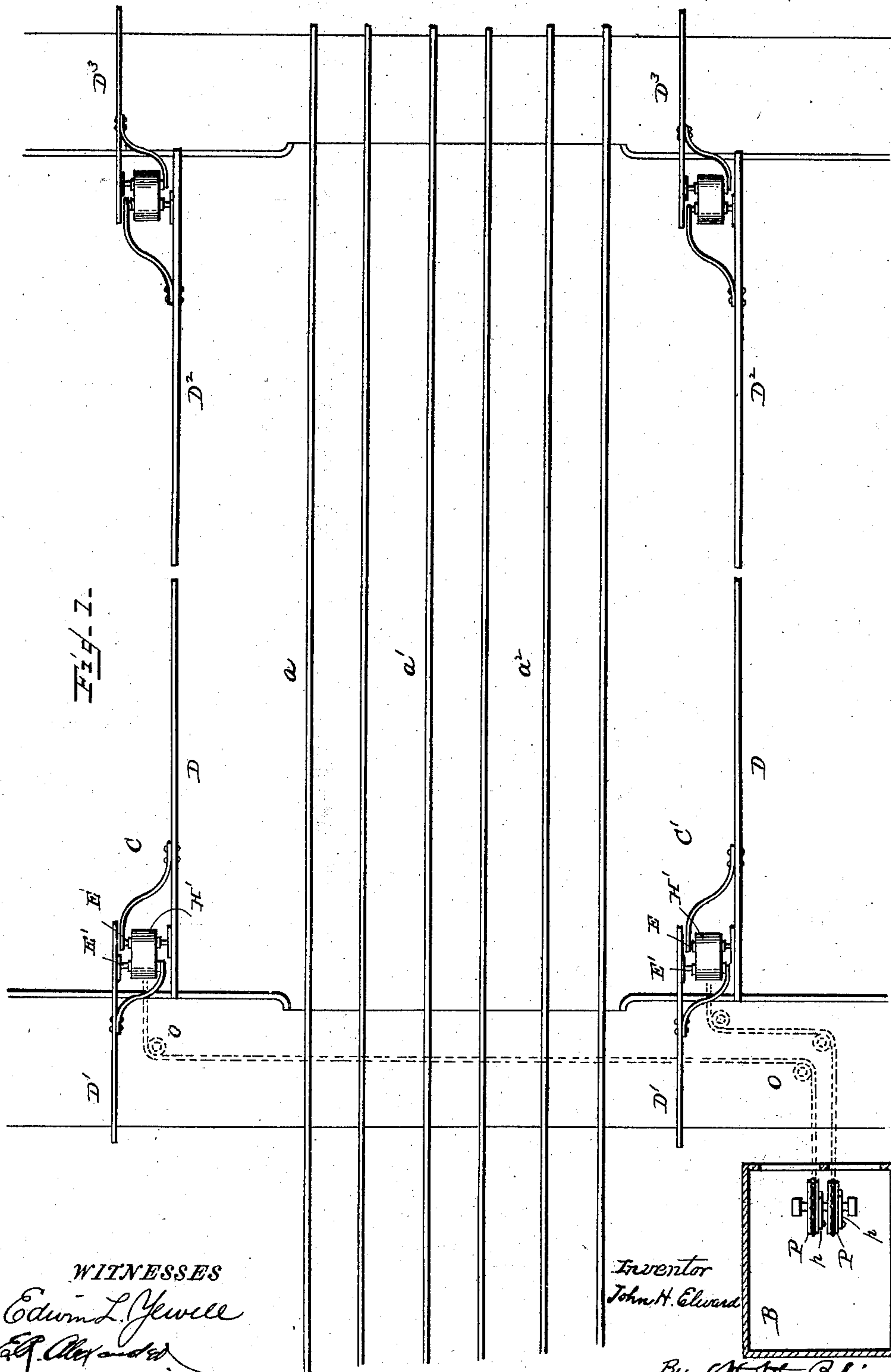
PATENTED OCT. 20, 1903.

J. H. ELWARD.  
RAILWAY GATE.

APPLICATION FILED JAN. 17, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES  
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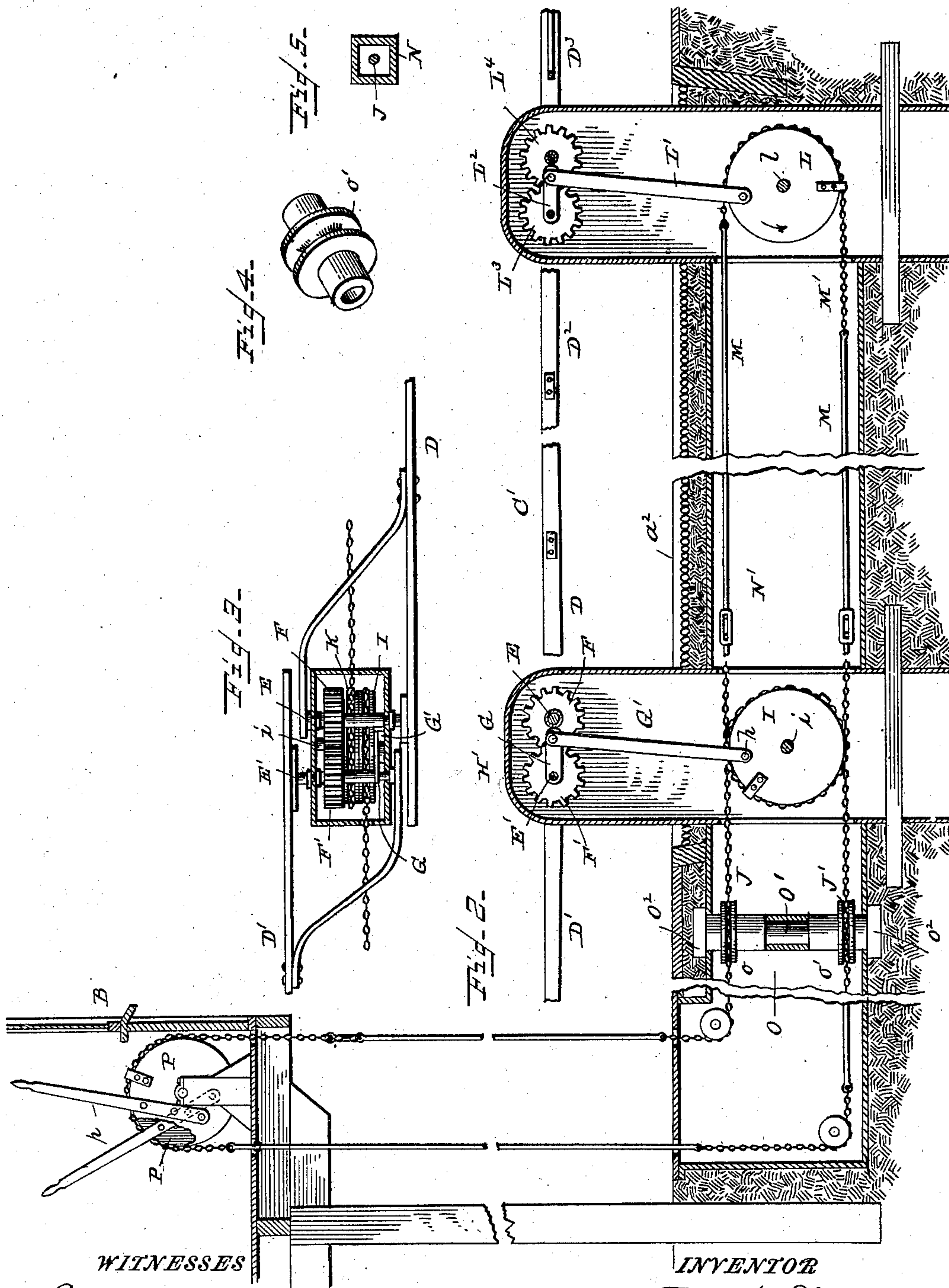
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## UNITED STATES PATENT OFFICE.

JOHN H. ELWARD, OF HUTCHINSON, KANSAS.

## RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 741,781, dated October 20, 1903.

Application filed January 17, 1903. Serial No. 139,451. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. ELWARD, a citizen of the United States, residing at Hutchinson, in the county of Reno and State of Kansas, have invented certain new and useful Improvements in Railway-Gates, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a plan view of a mechanism embodying my invention for controlling railway-crossings. Fig. 2 is a vertical section, on a larger scale, of a part of the apparatus, some portions thereof on the plane of the scale being broken away. Fig. 3 is a plan view of the hinged ends of two companion gate-arms and of the parts adjacent thereto, the housing or boxing being also shown in section. Figs. 4 and 5 illustrate details.

In the drawings I have indicated, more or less conventionally, a portion of a railway-track system, the rails of each of the several tracks being indicated by  $a$   $a'$   $a''$ . The apparatus for operating the crossing-controlling parts and the framework or housing for this apparatus are indicated as an entirety by B. Upon each side of the area covered by the track-rails is arranged a set of gates or controlling devices, one set being indicated by C and the other by C'. Inasmuch as these are in many respects substantially duplicates of each other it will not be necessary to describe in detail more than one of them. Each has the following parts, constructed and arranged in the manner below set forth. Upon each side of the street or road which traverses the railway-tracks there are two companion gate-bars, illustrated as at D D', the former being longer and extending across the carriage-way and the latter shorter and projecting over the sidewalk. Upon the opposite side there are similar gates at D<sup>2</sup> D<sup>3</sup>.

The gates D D' are respectively hinged upon shafts at E E', which are suitably mounted in bearings in the frame, boxing, or housing H'. The hinge-shafts of the gates are connected together by gearing, wheels being illustrated at F F'.

G is a crank-arm connected to one of the shafts E E', and to this crank is pivoted a pitman or link G', which transmits power from the actuating apparatus to be described.

At the lower end of the link or pitman G'

there is a crank-wheel or power-wheel I, mounted upon shaft  $i$ , to which the pitman is pivoted by a crank-pin at  $h$ . This wheel I is turned alternately in opposite directions by means of draft-lines, rods, links, chains, cords, or the like at J J'. Preferably I use rods, which at their ends are fastened to a chain or chains that extend around the periphery of the wheel, the latter being at one or more points rigidly connected to the wheel, so as to provide a draft attachment.

The shaft  $i$  upon one side of the street or road is connected with a corresponding shaft  $l$  upon the other side, which shaft has a crank-wheel or power-wheel L secured thereto.

M M' are draft devices of suitable sort, such as above described, here preferably rods connected by chain section or sections to the wheel L and at the other end fastened in a substantially similar or equivalent way to a wheel K upon the shaft  $i$ .

L' is a link or pitman extending from the crank-wheel L upward to the devices at the hinged ends of the gate-arms D<sup>2</sup> D<sup>3</sup>, the hinge-shafts here also having gear-wheels, as indicated by L<sup>3</sup> L<sup>4</sup>, which mesh together, the pitman L' being connected to them through the crank L<sup>2</sup>. The draft devices J J' extend to the point where the operator applies the power by hand which effects the movements of the gate-arms. I make provision for operating the crossing-controlling devices from an elevated position, as an observation-house or tower at B. In the operator's room there are arranged a series of crank-wheels or power-wheels P P, each provided with a lever-handle  $p$ , either directly applied thereto or connected by transmitting devices. To each of these power-wheels are brought the lines J J' of one pair of companion draft devices, and the latter are secured thereto in any suitable way—as, for instance, that above described, namely, by having terminal chain-sections secured to the periphery of the wheel. In order to permit the tower or observation-house to be located at any suitable place irrespective of the longitudinal lines of the gates on either side of the track, I provide a series of deflecting devices or guide devices which permit the train of draft-transmitting devices to be turned wherever desired from one line to another. Such deflecting or guiding means are



indicated as a whole at O, each comprising, preferably, a pair of antifriction sheaves or rollers, as at  $o\ o'$ , one for the draft-line at J and the other for that at J', these rollers being suitably mounted on vertical axes—as, for instance, by a shaft  $O'$ , held in a suitable frame  $O^2$ , secured firmly in position at the point where the draft-lines are to be deflected. If rods or heavy wires are used as the main part of the line of draft devices, it is advisable at and near these deflecting or guiding means at O to introduce sections of material having greater flexibility than the rods or wires—such as chains, cables, or equivalents—so that the passing of the draft-line around the sheaves or guides can be effected with the utmost freedom.

The lines of draft devices are arranged somewhat below the surface of the ground or pavement. To keep them free from obstructions, they are surrounded and protected by boxings or housings, which may be either shallow and separated from each other, each box or sheave containing one of the lines of draft parts, as shown at N, (see Fig. 5,) or they may be made sufficiently wide and deep to receive and hold both of the companion lines, as shown at N'. (See Fig. 2.)

What I claim is—

1. In a mechanism for controlling a railway-crossing, the combination with the vertically-swinging gates, of the gearing connect-

ing the hinged ends of the said gates, the crank-arm connected to one of the said gears, the link or pitman connected to the said crank, the crank-wheel connected to the said pitman, the train of draft-transmitting devices connected to the said crank-wheel and extending to the power-point, and the power devices connected to the draft-lines and adapted to be actuated by hand, substantially as set forth.

2. In a mechanism for controlling a railway-crossing, the combination of the two oppositely-swinging gates, the cranks at the hinged ends of said gates, respectively, the pitmen or links connected to the cranks, respectively, the crank-wheels connected to said pitmen, respectively, the flexible train of draft-transmitting devices rigidly secured to both the said crank-wheels and connecting the gates together, the flexible train of draft-transmitting devices rigidly connected to one of the said crank-wheels and extending therefrom to the power-point, and the hand-operated crank-wheel at the power-point rigidly connected to the said draft-train, substantially as set forth.

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

JOHN H. ELWARD.

Witnesses:

N. CURTIS LAMMOND,  
E. R. ALEXANDER.