

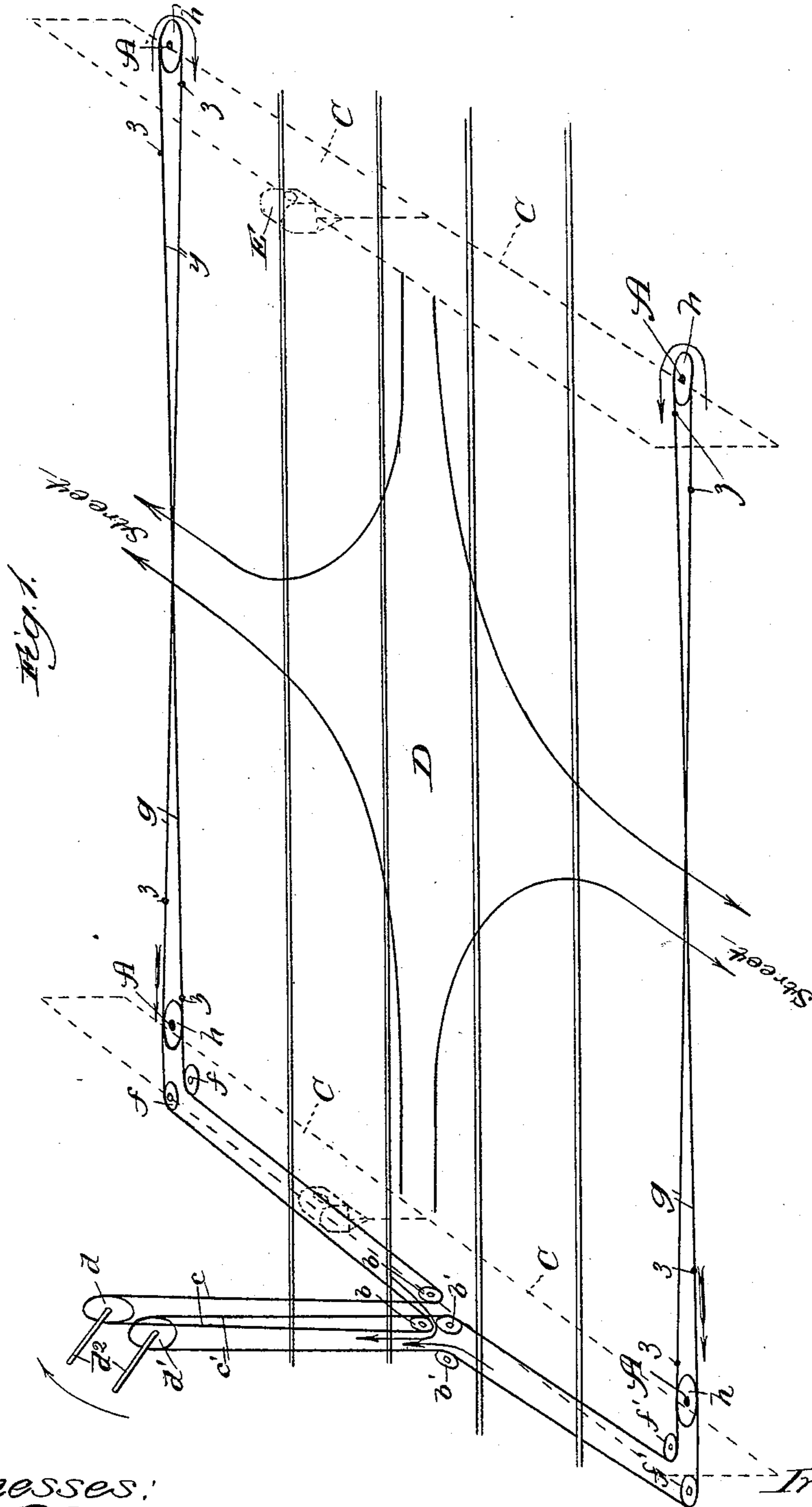
(No Model.)

2 Sheets—Sheet 1.

M. B. MILLS.
RAILWAY CROSSING GATE.

No. 438,322.

Patented Oct. 14, 1890.



Witnesses:
C. S. Payson,
J. H. Dyrenforth

Inventor:
Mortimer B. Mills,
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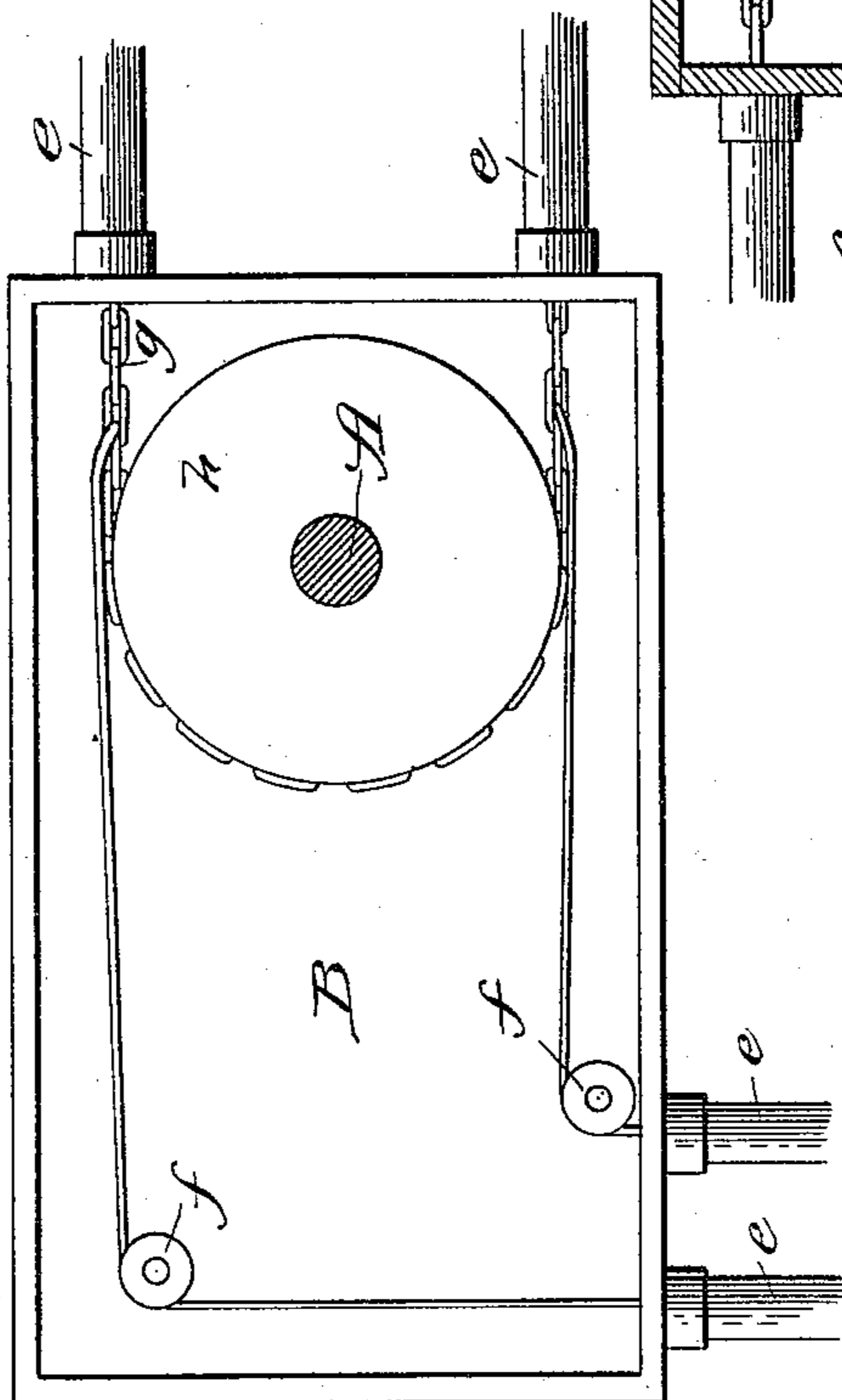
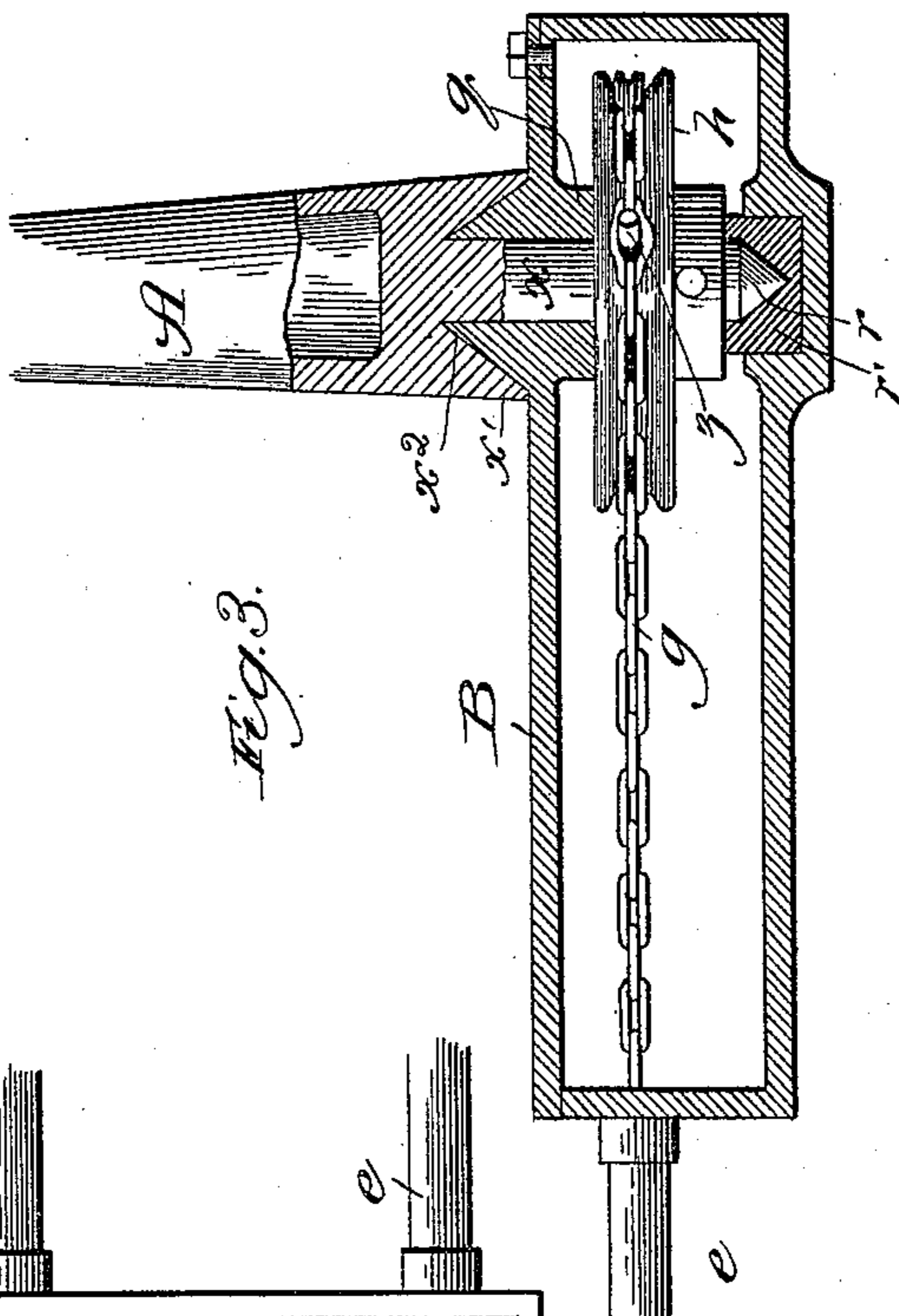
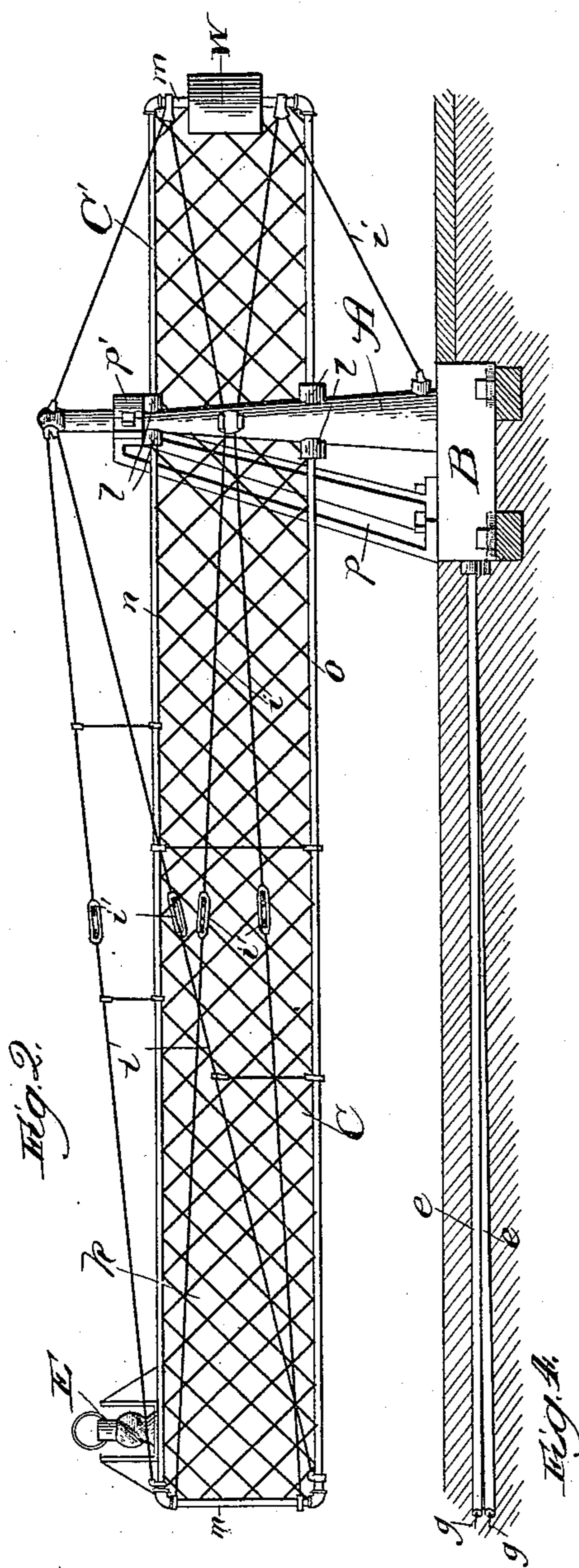
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2 Sheets—Sheet 2.

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RAILWAY CROSSING GATE.

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Witnesses:

Wm. C. Paylor,
J. H. Dyrenforth

Inventor:

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UNITED STATES PATENT OFFICE.

MORTIMER B. MILLS, OF CHICAGO, ILLINOIS.

RAILWAY-CROSSING GATE.

SPECIFICATION forming part of Letters Patent No. 438,322, dated October 14, 1890.

Application filed April 23, 1890. Serial No. 349,151. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER B. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Railway-Crossing Gates, of which the following is a specification.

My improvement relates to a gate which shall, better than the commonly used form of railway-gate having vertically-swinging arms, be adapted both by its form and construction and the manner of its operation to serve its purpose of a barrier where the railway-tracks are fenced in, as they are required to be in some municipalities.

My object is to provide a railway-crossing gate which shall conform to the fencing (if provided) inclosing the track, and which shall be adapted by its construction to be swung in a horizontal plane to extend crosswise of the track into its normal position, and when the crossing is to be barricaded across the street; and my object is, furthermore, to provide such a gate with means whereby it or any desired number thereof may be operated like gates of the vertically-swinging-bar variety referred to from a distant point of operation, as from the cabin commonly provided for the operator and gate-operating mechanism.

My invention consists in the general construction of my improvement, and it also consists in details of the construction and combinations of parts.

In the accompanying drawings, Figure 1 is a diagrammatic view illustrative of the manner and a means for operating gates of my improved construction provided for opposite sides of a railway-crossing. Fig. 2 shows my improved gate in side elevation. Fig. 3 is a broken sectional view enlarged, showing details of my improved construction; and Fig. 4, a plan view showing an inclosing-box which may be provided for housing a pivotal gate-post operating-pulley and the guide-pulleys for the connections between posts.

The gate may involve a single horizontally-swinging "arm" on a post, as shown in Fig. 2, or two such arms connected together to be operated simultaneously and co-operate to form the street-crossing barrier, as indicated in Fig. 1,

wherein a gate so formed of the two arms is represented to be provided at each side of a crossing.

A is a post, which may taper, as shown, toward its upper end, and the lower end of which is reduced, as shown at x , Fig. 3, into the form of a spindle, with its extremity formed into a pointed or anti-friction bearing r . Where the spindle x joins the body of the post A, the latter is hollowed out at its base conically, as shown at x' . I support the post in desired position on a box or housing B, buried underground and containing a socket q to receive the spindle x , which socket is extended beyond the upper side of the box into an upwardly-tapering seat x^2 for the correspondingly-tapering hollow base x' of the post, the two conical parts thus forming a protection against moisture, or a water-shed to shield the movable parts in the box against the access of water and consequent freezing thereof in cold weather, which would impede the operation of the gate. In the base of box B, directly below the socket q , is a bearing r' for the pointed end of the spindle x . The post A where it extends above the surface of the ground should be propped by a suitable brace p , having a collar p' at its upper end, through which the post extends.

I form the barrier or arm C with a light rectangular frame composed, preferably, of tubular rods o and n , connected at their ends by similar rods m , and where the rods o and n are secured to the post they should be severed to extend into and be secured in sockets l , provided in suitable positions on opposite sides of the post, as shown. Thus the post and its arm are practically integral. The arm is further provided with open-work k , which may be formed with woven wire, and the structure should be further strengthened from the post by means of properly-disposed stay-rods i , cables, or the like, as shown, which may be provided, as usual, with turn-buckles i' . It will be noticed that the arm C extends beyond both sides of the post in order that the shorter end C' may form a sidewalk-barrier, and this should be weighted, as at w , to afford a counter-balance.

Within the housing B, I provide on the spindle x a pulley h , confined in horizontal

position, as shown, around which extends an endless chain g , cable, or the like to a similar pulley h , so that by turning the last-named pulley h the other pulley is also turned, and with it the post A , supporting it and the arm C .

Ordinarily the gate formed with my improved construction comprises two arms C on posts A , located on both sides of a street leading to a railway-crossing, and one such gate is provided at each end of a street terminating at the railway, both gates being then arranged with means for operating them (preferably independently of each other) from the same point of operation, (tower or cabin.)

The means referred to may involve pneumatically-operated mechanism of any suitable or known construction or other mechanical connections, and if the latter I prefer to employ the construction illustrated, and a description of which, most readily comprehensible by reference to the diagram in Fig. 1, is as follows: Two arms C are supported on posts A at opposite sides of the street on one side of a railway D and arranged to extend normally lengthwise, respectively, with the sides of the street, and to be swung from such position through a horizontal plane toward each other to form the street-barrier. Similarly two other arms are supported on the opposite side of the railway, and those so provided near the side of the railway at which the operator's cabin (not shown) is located have each in the housing B , containing the pulley h , guide-pulleys f and f' . (See Fig. 4.) The pulleys h of each gate are connected underground across the street by an endless chain g , cable, or the like, extended through suitable conduits e , connecting the boxes B , and the chains should cross each other (the conduits being arranged accordingly) between the said pulleys h , as represented in Fig. 1, and be fastened, as in Figs. 3 and 4, to their pulleys. In the operator's cabin (not shown) are supported two pulleys d and d' , disposed vertically and controlled by levers d^2 ; or any other analogous mechanism may answer the purpose. A cable, wire, or the like c is passed around the pulley d and thence to the chain g for one pair of the gate-arms, to which its opposite ends are fastened, as at the points z on opposite sides of the adjacent pulley h , and the cable c is guided to the points of fastening over pulleys b below the pulley d and the pulleys f in the box B . In a similar manner a cable, wire, or the like c' is passed around the pulley d' and thence to the chain g for the other pair of gate-arms, and there fastened in the manner already described, being guided to the points of fastening over pulleys b' near the pulleys b and the pulleys f' in the opposite box B .

To operate the gates with the operating mechanism thus described, the levers d^2 are turned, (one at a time if the gates are to be worked separately, or both together if they are to be worked simultaneously,) and turning either in one direction causes the pulleys

h it controls to be turned to swing the respective arms C toward each other to extend across the street, while turning it in the contrary direction effects swinging of the arms in opposite directions to extend across the railway-track from each side of the street.

Inasmuch as the arms of the gate are arranged to be extended normally crosswise of the tracks, I provide a signal-lamp E on each or on the one arm of each gate at its end, as shown, which displays the "danger" signal when the gate is closed across the railway or across the street.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-crossing gate, the combination of a post A , provided with a spindle x and having a tapering recess x' in its base at the junction therewith of the spindle, a box B , having a socket q for the spindle and a tapering bearing x^2 to enter the recess x' , and an arm C , secured to the post to rotate therewith in a horizontal plane, substantially as described.

2. In a railway-crossing gate, the combination of a post A , provided with a spindle x , formed with a pointed end r , the post having a tapering recess x' in its base at the junction therewith of the spindle, a box B , having a socket q for the spindle, a tapering bearing x^2 to enter the recess x' , a bearing r' for the pointed end of the spindle, and a pulley h on the spindle for the operating medium g , and an arm C , secured to the post to rotate therewith in a horizontal plane, substantially as described.

3. In combination with a railway-crossing, a gate having a rotary post A , provided with a spindle x and having a tapering recess x' in its base, an underground housing B , having a socket q , in which the post is supported at its spindle, and a tapering bearing x^2 entering the recess x' , and an arm C , formed with a light rectangular or substantially rectangular frame secured to the post to be rotated by it through a horizontal plane and extended crosswise of the track to open the street-crossing and crosswise of the street to close it, substantially as described.

4. In combination with a railway-crossing, a gate having a rotary post A , provided with a spindle x , formed with a pivotal end r , the post having a tapering recess x' in its base, an underground housing B , having a socket q , in which the post is supported at its spindle, a tapering bearing x^2 entering the recess x' , a bearing r' for the pointed end of the spindle, and a pulley h on the spindle for the operating medium g , and an arm C , secured to the post and formed with a light rectangular or substantially rectangular frame extended into a sidewalk-arm C' , provided with a weight w , substantially as described.

5. In combination with a railway-crossing, a gate composed of rotary posts A at opposite sides of the street at the crossing, and each formed with a spindle x , and with a taper-

ing recess x' at the base, a box B, underground
for each post, having a socket q for the spin-
dle, a tapering bearing x^2 entering the recess
 x' , and a pulley h on the spindle, arms C, se-
5 cured to the posts to be rotated therewith in
a horizontal plane and extend crosswise of
the track to open the street-crossing and cross-
wise of the street to close it, chains g or the
like, connecting the pulleys h underground
10 and crossed between the pulleys, guide-pul-
leys f in a box B, lever d^2 on a pulley d at the

place of operation, and a cable or the like
 c , passed around the pulley d , over guide-
pulleys b and the guide-pulleys f , and secured
at its ends to the chain g at opposite sides of 15
a pulley h , the whole being constructed and ar-
ranged to operate substantially as described.

MORTIMER B. MILLS.

In presence of—

J. W. DYRENFORTH,

M. J. FROST.