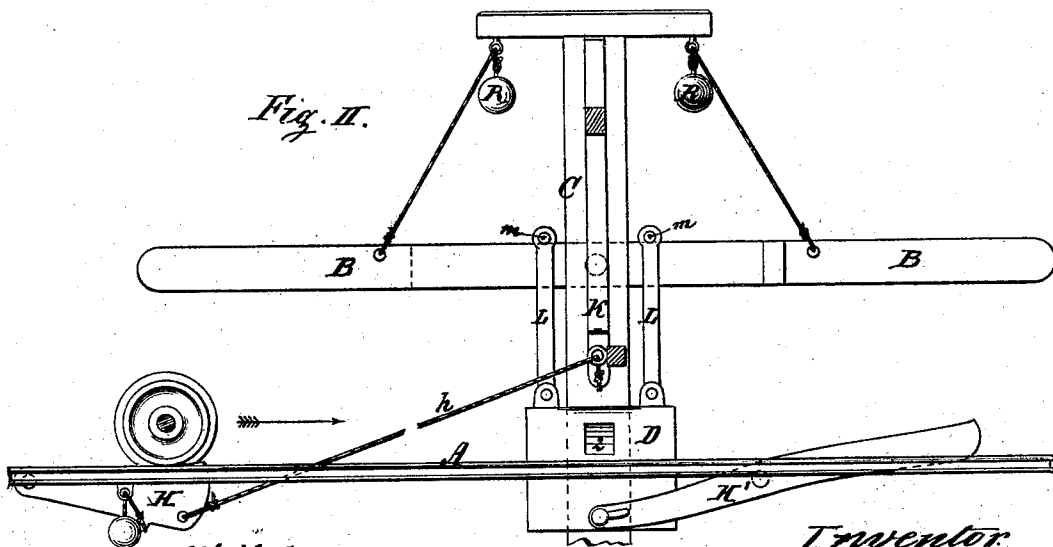
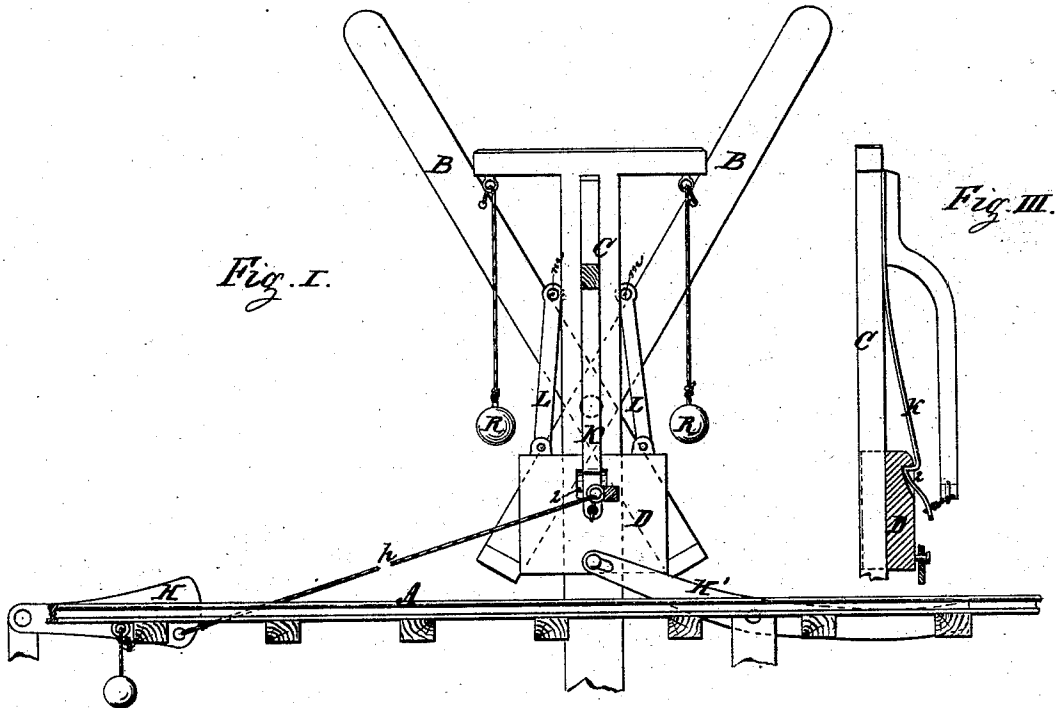


E. P. SPAHN.
RAILWAY-GATES.

No. 177,968.

Patented May 30, 1876.



Witnesses:
John F. Allen
Wm Munch

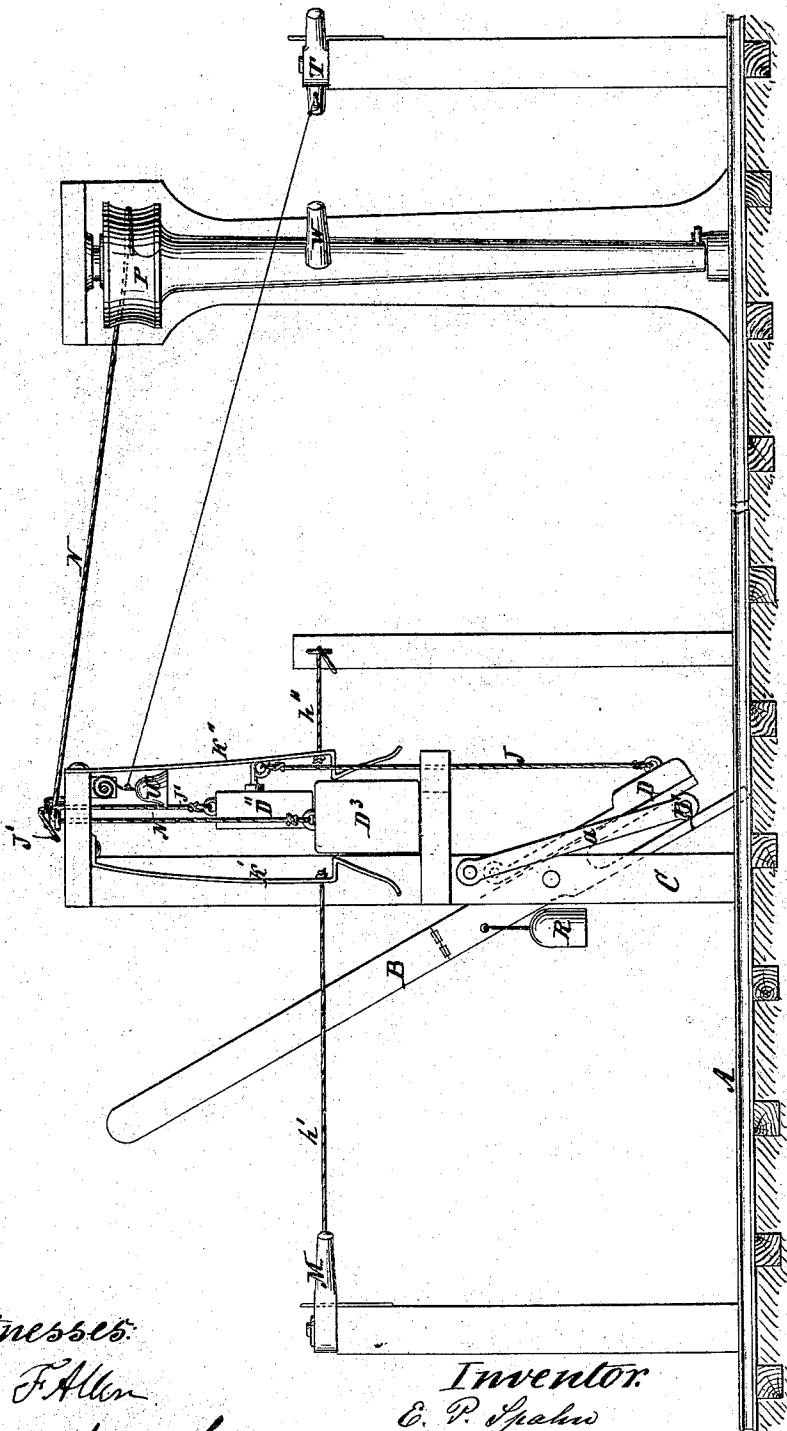
Inventor:
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per Henry E. Roeder
attorney

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Fig. II.



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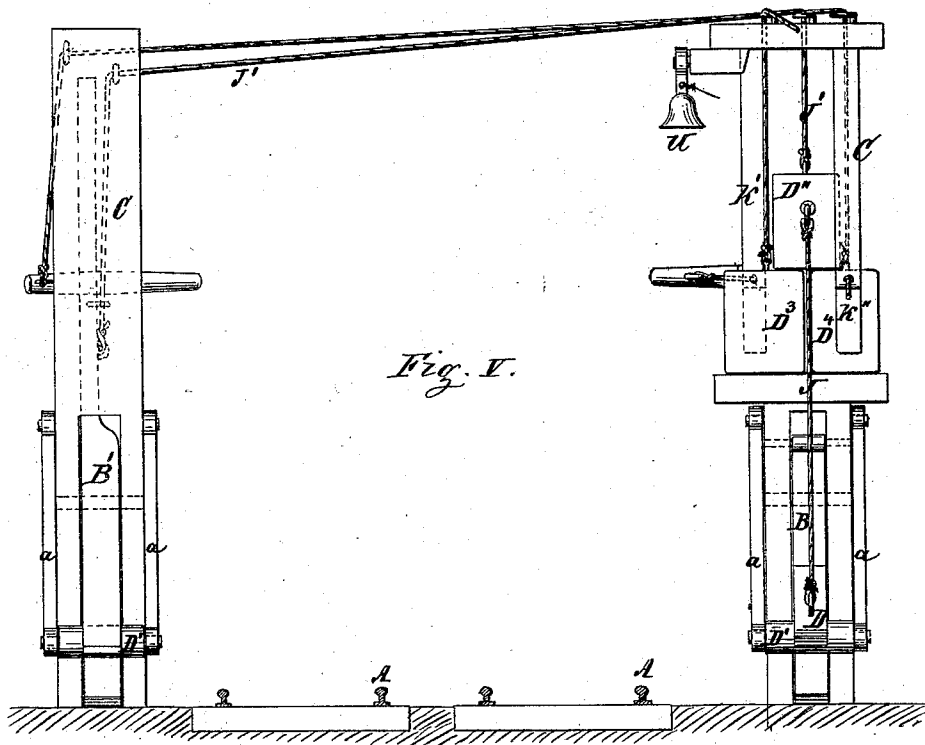


Fig. V.

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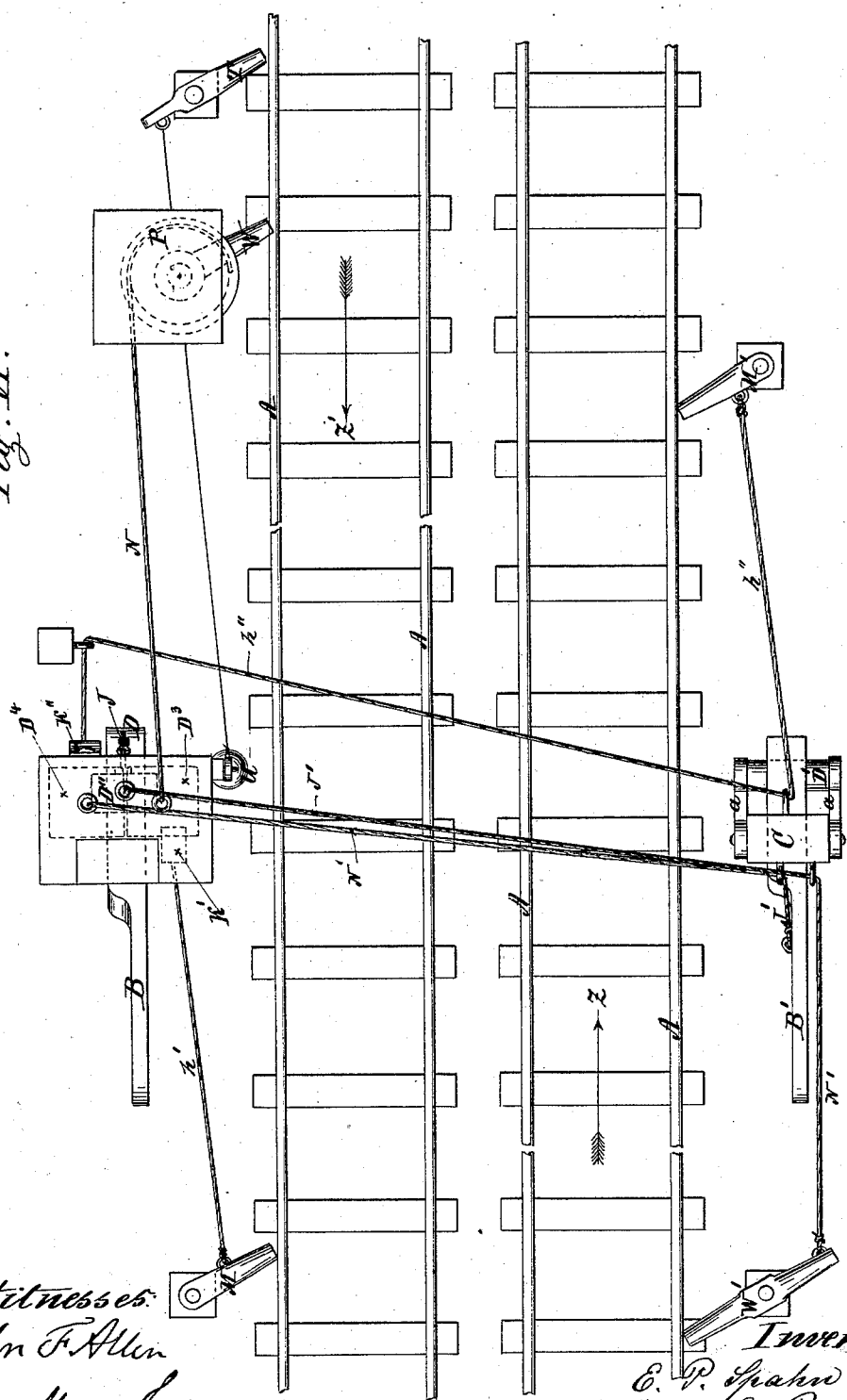
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Fig. VI.



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UNITED STATES PATENT OFFICE.

EMIL P. SPAHN, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN RAILWAY-GATES.

Specification forming part of Letters Patent No. **177,968**, dated May 30, 1876; application filed October 12, 1875.

To all whom it may concern:

Be it known that I, EMIL P. SPAHN, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Railway-Crossing Gate, with apparatus for operating the same, of which the following is a specification:

The nature of my invention consists in the combination, with wholly or partly counter-balanced gates, of weights auxiliary to the counter-balance weights, and suitable apparatus for actuating said auxiliary weights by the moving train, in such a manner that the gates will be opened and closed by gravity, according as the auxiliary weights or balance of gravity is shifted from one side to the other of the pivoted center, or which, on others than pivoted gates, is let on, lifted off, or shifted along the gates or their counter-balances.

The object of this invention is to employ only light objects to be acted upon by the train, as its quick motion, if applied directly to the heavy gates, would overstrain and damage the connections; whereas, in this way, the weights to be moved by the action of the train need only be heavy enough to change the balance of gravity. The weights are added on or lifted off according to whether the arm on which the weight is to act is overbalanced or underbalanced, either way being alike available. The weight may be arranged to slide along the gate across the pivot, to effect the necessary changes.

In the accompanying drawings, Figure 1 represents an elevation of a double gate, in which a sliding auxiliary weight is employed, operated by the train, to effect the opening and closing of the gates. Fig. 2 represents the same when the gates are closed. Fig. 3 is an end view of Fig. 1. Fig. 4 is an elevation of single gates. Similar letters represent similar parts in all figures.

A represents the railway; B, the gates which are to be employed for closing the crossings. These gates may be made to slide up and down, to slide horizontally, or to swing on pivoted centers, as shown in Figs. 1, 2, 3, and 4. The gates are pivoted to a suitable support or post, C, being nearly balanced, so that a light weight being added or lifted off will

operate the same. D represents the auxiliary weight, which, in Figs. 1 and 2, is arranged to act on the long arms of the gates, and weigh them down by the connections of the links L and rods or pins *m* with the long arms of the gates. H H' are levers, arranged on the side of the rails, actuated by the wheels of the cars. The lever H is connected by means of a cord, wire, or chain, *h*, to a spring-catch, K, and the lever H' to the weight D. The gates or arms of the gates B are counterbalanced by suitable weights. The end of the spring K enters a recess, 2, in the weight D, and holds the same up when the gate is open, as shown in Figs. 1 to 3.

As soon as the wheel of the car comes in contact with the lever H it depresses the same, and moves thereby the spring-catch K out of recess 2, allowing the weight D to act upon the gates B, so as to close the same. When the train has passed, the car-wheel comes in contact with the lever H', depressing the same, and thereby lifting up the weight again till caught by the spring K, when the gates will open again through their counter-weights.

The long arms of pivoted gates will gain in swinging power when falling downward. To counteract this I propose to adjust the counterbalancing-weight D' in such a manner as to move its center of gravity away from the pivot of the gate, in proportion as the gate moves down. For this purpose the weight D' (see Fig. 4) is attached to an arm, *a*, pivoted above the pivot of the gate in the post C, the counter-weight D' being supplied with proper wheels to slide easily in suitable grooves in the small arm.

In case a team should be caught between the closing gates, one or both of the arms of the gate may be hinged as shown in Fig. 4, opening outward, and kept close by means of suitable springs, or by a weight, R. It is evident that springs or gravity-pawls are likewise available, and can be used in every case where weight-power is employed in the above description.

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

1. The combination of auxiliary weights, and mechanism to actuate the same, with nearly or wholly counterbalanced gates, so

that the same or their counter-balances be relieved of, or have the weights added to, them, to effect the opening and closing of the gates by thus changing the gravity, substantially in the manner and for the purposes described.

2. The combination of gates B, weight D, links L, with rods or pins *m*, and spring-catch K with levers H and H', arranged and operating substantially in the manner and for the purpose specified.

3. The spring-catch K, in combination with suitable cords and connecting mechanism actuated by a moving train, to catch hold of or release weight or lifter D, in the manner and for the purpose substantially as set forth.

EMIL P. SPAHN.

Witnesses:

G. MEISINGER,
JOHN SCHMIDT.