

No. 841,437.

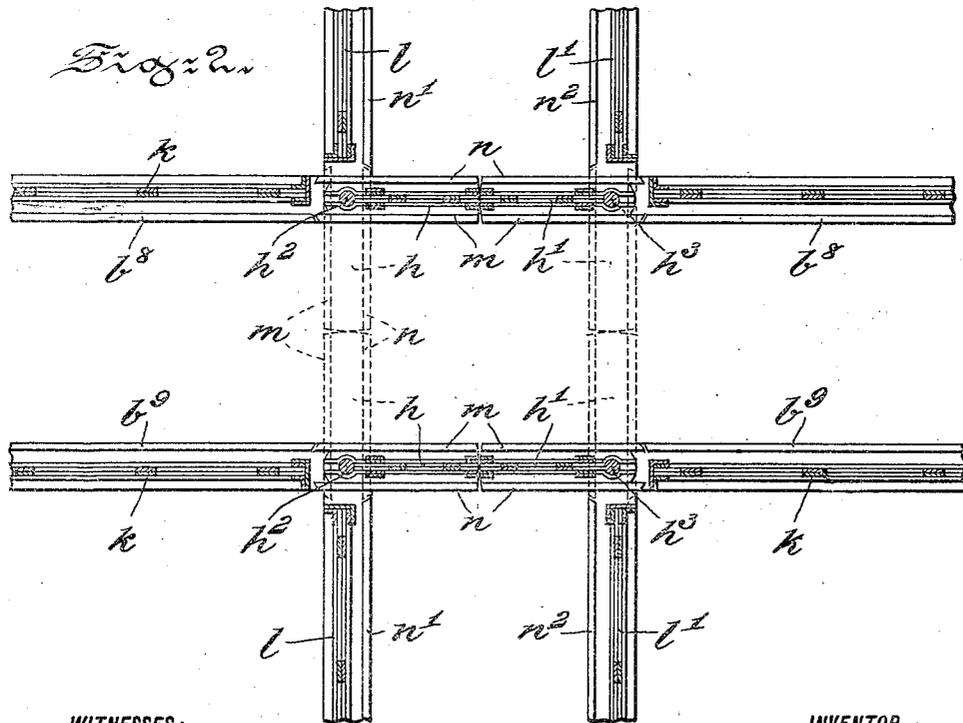
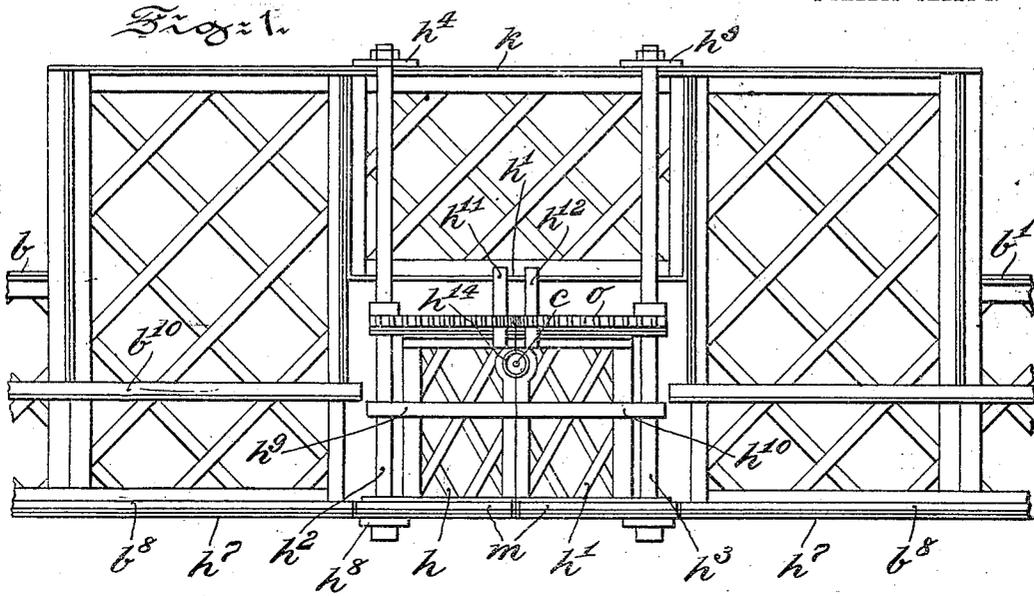
PATENTED JAN. 15, 1907.

D. M. PFAUTZ.

CROSSING FOR ELEVATED RAILWAY STRUCTURES WITH SUSPENDED CARS.

APPLICATION FILED JUNE 8, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

Wilhelm Vogt
Thomas W. Smith.

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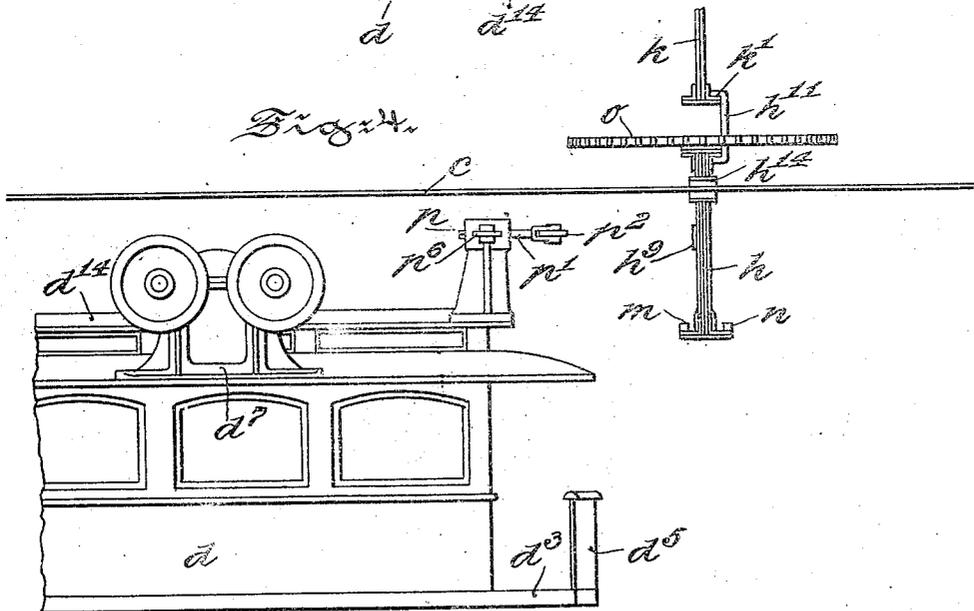
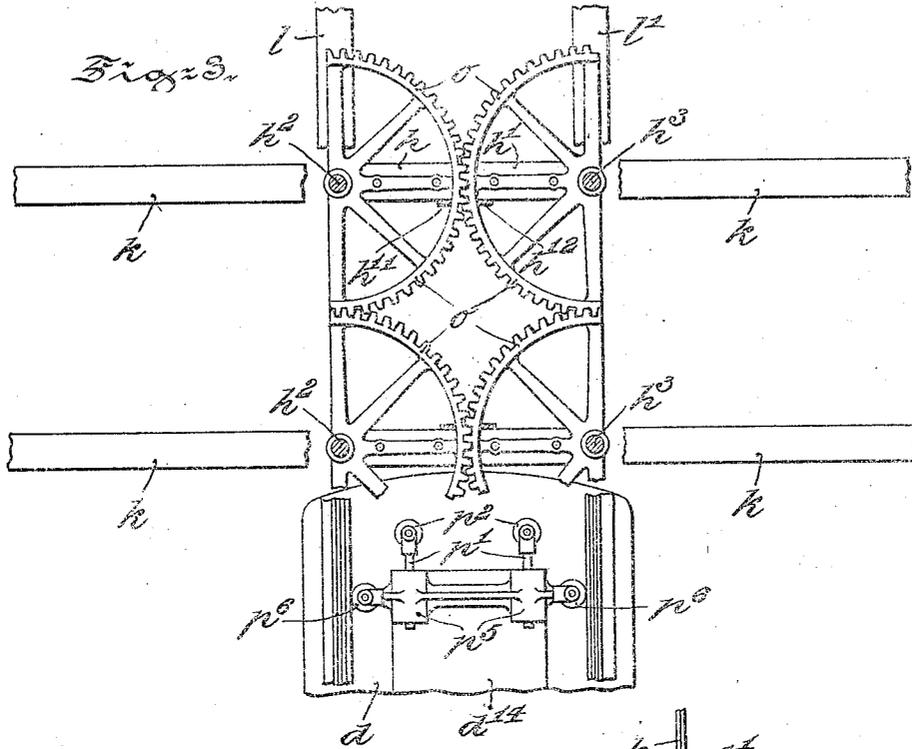
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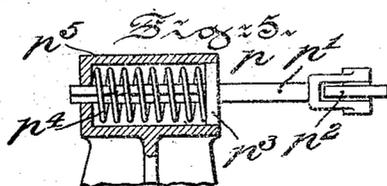
APPLICATION FILED JUNE 6, 1906.

2 SHEETS—SHEET 2.



WITNESSES:

Wilhelm Toth
Thomas M. Smith.



INVENTOR
Daniel M. Pfautz,
BY
J. Walter Douglas
ATTORNEY.

UNITED STATES PATENT OFFICE.

DANIEL M. PFAUTZ, OF GERMANTOWN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM H. TIGERMAN, OF PHILADELPHIA, PENNSYLVANIA.

CROSSING FOR ELEVATED-RAILWAY STRUCTURES WITH SUSPENDED CARS.

No. 841,437.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed June 6, 1906. Serial No. 320,377.

To all whom it may concern:

Be it known that I, DANIEL M. PFAUTZ, a citizen of the United States, residing at Germantown, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Crossings for Elevated-Railway Structures with Suspended Cars, of which the following is a specification.

My invention has relation to that class of elevated-railway structures in which cars suspended from such structures are used and in which two structures intersect each other at right angles, and in such connection it relates to crossings adapted to be arranged in such intersecting elevated-railway structures.

The principal objects of my present invention are, first, to provide a simple and efficient crossing for elevated-railway structures; second, to provide one of the abutting elevated-railway structures with doors or wings carrying rails adapted to form the continuation of the main line and the crossing for the intersecting line; third, to provide said doors or wings with means meshing with each other to control and to transmit the movement of one or more of the doors or wings to the other doors and to hold the same in proper position with respect to each other, and, fourth, to provide a car with a buffer adapted to contact with one set of doors and to automatically shift the doors or wings into a position so as to permit of the travel of the car over the main line or intersecting line.

The nature and scope of my present invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 illustrates, in side elevation, an automatic crossing of two elevated-railway structures intersecting each other at right angles embodying main features of my invention. Fig. 2 is a horizontal sectional view of said crossing, illustrating in full and dotted lines the different positions of the doors or wings in said crossings. Fig. 3 is a view, partly in elevation and partly in section, illustrating in top plan view the means for controlling the movement of the doors or wings and buffers for actuating the doors or

wings, said buffers being arranged on the roof of a car and in the path of the same. Fig. 4 illustrates in side elevation a portion of a car and the buffer adapted to contact with and to open the doors or wings; and Fig. 5 is a sectional view, enlarged, of the upper portion of the buffer.

Referring to the drawings, b and b' are girders of the main line, between which are interposed, preferably, lattice-work girders k , and l and l' are girders of the intersecting line abutting against at right angles the girders k . The girders k of the main line are provided with a crossing, consisting of doors or wings h and h' . The abutting elevated structure has no doors or wings, such as are arranged in the main line b and b' , as the doors h and h' thereof form the crossing for the intersecting line l and l' , as shown in dotted lines in Fig. 2. The doors or wings h and h' are pivotally connected to bolts or shafts h^2 and h^3 , preferably connected at their upper ends to plates h^4 and h^5 , secured to the top of the girder k , and at their lower ends are in engagement with plates h^6 and h^8 of the girder k and abutting girders l and l' . As shown in Figs. 2 and 4, each of the doors or wings is provided with two rails m and n , on either side thereof. In the position of the doors h and h' (shown in full lines in Figs. 1 and 2) the rails m form the continuation of the rails b^8 and b^9 of the main line, while in the position indicated by dotted lines in Fig. 2 the rails n form the continuation of the rails n' and n^2 of the abutting cross-elevated structures l and l' . Each of the doors h and h' , at their upper ends, is provided with a semicircular gear-wheel o . These gear-wheels mesh with each other and have their fulcral points on the shafts h^2 and h^3 , as shown in Figs. 1 and 2. By this arrangement the movement of one door is readily transmitted to the other door and positively controlled by the same.

In order to automatically open the doors h and h' and to shift the same from their normal position (indicated in full lines in Fig. 2) into the position indicated by dotted lines in said figure, a car d , suspended from the elevated-railway structure, is provided with a buffer p , located on the roof d^4 thereof, as shown in Fig. 4. The buffer p consists of a rod p' , provided at one end with a roller

p^2 and intermediate thereof with a disk p^3 , sliding in a housing p^5 . Within the housing p^5 the rod p^1 is provided with a spring p^4 , resting with one end against the housing p^5 and with its other end against the disk p^3 and tending to hold the buffer p in its normal position, as shown in Fig. 5. If the car d advances against the doors h and h' , the buffers p , arranged at either end of the roof d^4 thereof, will be brought into contact with the strips h^9 and h^{10} , secured to the same, and the rollers p^2 of the buffers p will roll along the strips or rails and open the same. The force of impact of the rollers p^2 against the strips h^9 and h^{10} is taken up by the springs p^4 of the buffers p , and after the doors h and h' have been opened a certain distance by the buffers p the same are completely opened by the rollers p^2 , carried by the housing p^5 , by abutting against the strips or rails h^9 and h^{10} after the rollers p^2 of the buffers have left the same, as will be readily understood from Figs. 1 and 3. The car d can now cross the main elevated structure on the rails n of the doors h and h' and reach the other portions l and l' of the intersecting elevated structure. In order to support the doors at their free ends, the same are provided, preferably, with hooks h^{11} and h^{12} , engaging the flange k' of the cross-girder k , as shown in Figs. 1 and 4. Although the opening formed in the girder k and by the doors h and h' is sufficiently large to freely permit the passage of the truck d^2 of the car d and buffers p thereof, as well as the trolley-wire c , the same must, however, be guided through the abutting ends of said doors. For this purpose each of the doors h and h' is provided with the semicircular portion of a ring h^{14} of insulating material, which when the doors abut against each other forms a complete ring of sufficient size to permit a certain free movement of the feed or trolley wire c within the same.

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

1. In an elevated railway, wherein two sets of tracks cross each other at an angle, two sets of longitudinal girders, each girder supporting a track of a set and said girders intersecting, but not crossing each other, doors or wings pivoted at each intersecting corner and consisting of vertically-disposed girders carrying track-sections adapted to be operated to form a continuation of one or of the other set of crossing tracks, substantially as and for the purposes described.

2. In an elevated railway, wherein two sets of tracks cross each other at an angle,

two sets of girders, each girder supporting a track of the set and said girders meeting, but not crossing each other, doors or wings pivoted at each intersecting corner and consisting of vertically-disposed girders carrying track-sections adapted to be operated to form a continuation of one or of the other set of crossing tracks, and means connected with each of the doors adapted to control the movement and position of the other doors, substantially as and for the purposes described.

3. In an elevated railway, wherein two sets of tracks cross each other at an angle, two sets of longitudinal girders, each girder supporting a track of the set and said girders meeting, but not crossing each other, four doors or wings pivoted at each intersecting corner and consisting of vertically-disposed girders carrying track-sections adapted to be operated to form a continuation of one or of the other set of crossing tracks, gear-wheels connected with each of the four doors and meshing with each other to transmit the movement of one of the doors to the other doors and to hold the same in proper position with respect to each other, substantially as and for the purposes described.

4. In an elevated railway, a car having on its roof a buffer, comprising a housing, a rod movably located in said housing, at one end thereof, a roller secured to the free end thereof, and a spring engaging said rod and housing, substantially as and for the purposes described.

5. In an elevated railway, a car having on its roof a buffer, in combination with an elevated structure provided with doors or wings adapted to form the continuation of the main line and crossing of the intersecting line of said structure, substantially as and for the purposes described.

6. In an elevated railway, two sets of girders, each supporting a track of a set, and while intersecting not crossing each other, doors or wings connected with each intersecting corner and so arranged as to form a continuation of one or of the other of the sets of crossing tracks and a car having a buffer adapted to control the movement of said doors or wings, substantially as and for the purposes described.

In testimony whereof I have hereunto set my signature, in the presence of two subscribing witnesses, this 5th day of June, A. D. 1906.

DANIEL M. PFAUTZ.

Witnesses:

J. WALTER DOUGLASS,
 THOMAS M. SMITH.