

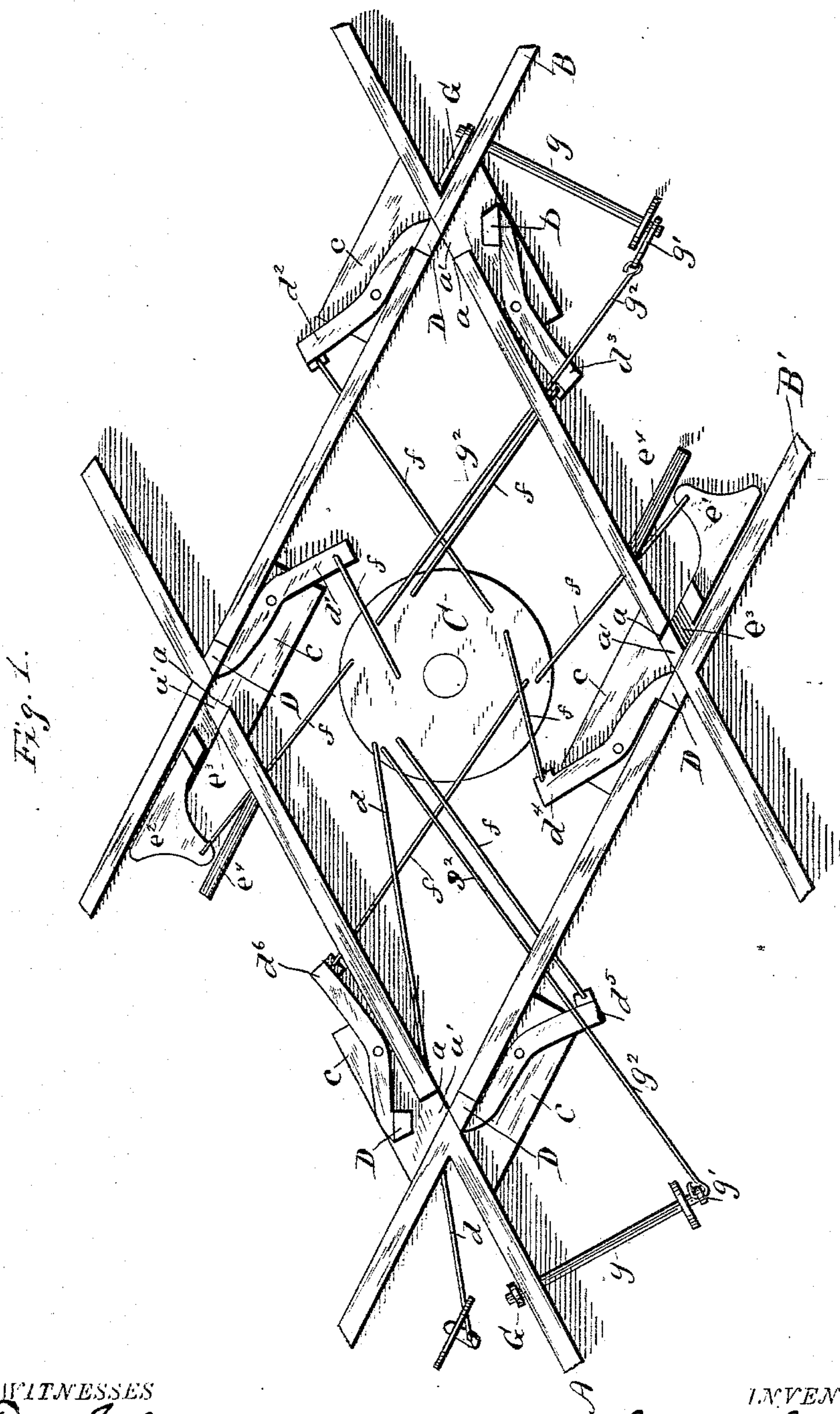
(No Model.)

2 Sheets—Sheet 1.

C. C. POLK.  
RAILWAY CROSSING.

No. 304,026.

Patented Aug. 26, 1884.



WITNESSES

Fred F. Church  
A. Stewart

INVENTOR

Caleb C. Polk  
by Church & Church  
his Attorneys

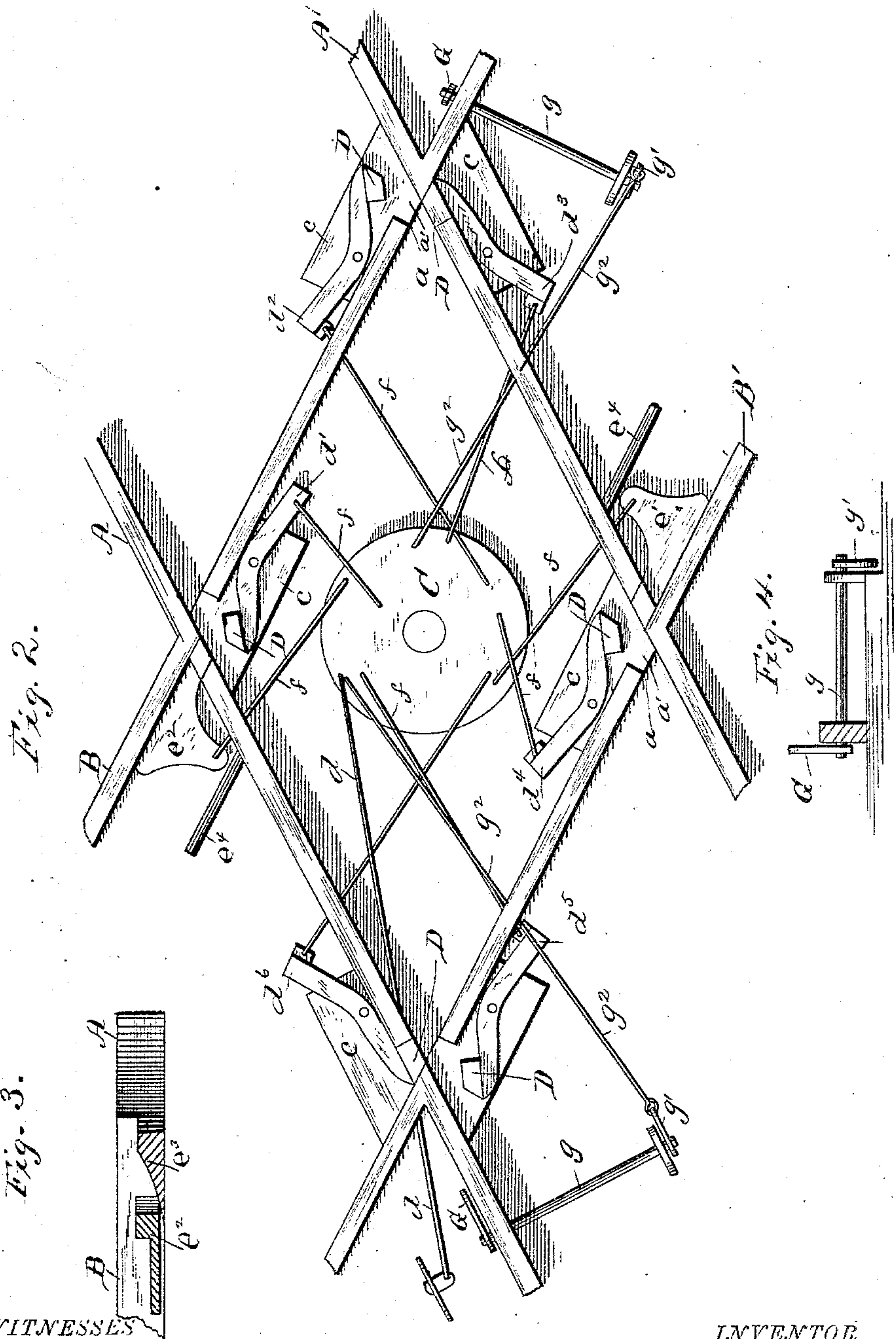
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WITNESSES  
Chas. R. Burr  
Fred F. Church.

INVENTOR  
Calvin C. Polk  
by Church & Church  
his Attorneys



# UNITED STATES PATENT OFFICE.

CALEB C. POLK, OF RICHMOND, ASSIGNOR OF ONE-HALF TO JOHN CARD, OF VALPARAISO, INDIANA.

## RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 304,026, dated August 26, 1884.

Application filed January 28, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CALEB C. POLK, of Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful  
5 Improvements in Railway-Crossings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.  
10

The passage of trains over railway-crossings as usually constructed is attended with much discomfort to passengers and more or less injury to the rolling-stock, owing mainly to the  
15 shock and jar occasioned by the wheels crossing the open spaces or grooves at the junction of the meeting rails, made to accommodate the flanges of the wheels.

My present invention is designed to remedy,  
20 or in a large measure obviate, these difficulties, at the same time dispensing with the heavy timbers, crossing-plates, and guard-rails usually employed to reduce the spring of the rails at the crossing-point, and hence the increased  
25 pounding action due thereto, as well as to provide against derailment; and it consists, generally, in the combination, with the meeting rails, of removable blocks filling the space or gap in the rails, and in mechanism operated  
30 from the engine, gate, or signal to automatically remove one set of blocks and place the others in proper position, all as described, and pointed out in the claims.

In the accompanying drawings, forming  
35 part of this specification, Figure 1 is a plan view of my improved crossing. Fig. 2 is a similar view with the filling pieces or blocks reversed. Fig. 3 is a detail, and Fig. 4 shows a modification of the operating-lever.

40 Similar letters of reference in the several figures indicate like parts.

The rails A A' and B B' of the two tracks crossing at the same level are notched or cut  
45 at *a*, as usual, for the passage of the flanges on the car-wheels. The bottom of each of these spaces *a* is occupied by a metal bearing-plate, *a'*, constituting a portion of the rail or of the plates *c*. Into each of the spaces *a* is fitted a steel block or section, D, which, when in place,  
50 rests upon the plate *a'* and fits flush with the top of the rail, rendering the latter, to all in-

tents and purposes, continuous. By the proper manipulation of the blocks D, the rails in either track may be made continuous and those of the other track broken to admit the  
55 flanges of the car-wheels. For the purpose of automatically and simultaneously effecting these operations, either from the approaching train by the opening and closing of a gate or by a watchman, the blocks D are so mounted  
60 and connected to a rotating disk, C, located preferably within the parallelogram formed by the four rails and at or below the level thereof, that when said disk is rotated in one direction the blocks fitting one track shall be  
65 carried into position to form a continuous rail, while the others at the same time are withdrawn to leave spaces for the wheel-flanges.

As shown in the drawings, the blocks D are attached to or made integral with the levers  
70 *d'* *d''* *d'''* *d''''* *d''''''* *d''''''''*, or they may be made part of sliding sections *e'* *e''*, as shown. The levers *d'* to *d''''''''* are pivoted upon plates *e*, located at or near the junction of the meeting rails, said plates being fastened to either the ties or rails  
75 or made integral with the latter. The sections *e'* *e''* slide upon inclines *e''''* at the side of the rail, so that when withdrawn from the spaces *a* they may fall below the top of the rail and out of the way of the wheels, a guide-piece,  
80 *e''''''*, being provided to retain the sections in place against the sides of the rail. The several levers and sliding sections are connected to the disk C by rods *f*, said rods passing  
85 through openings in the rails when the levers or sliding sections are located outside of the parallelogram formed by the four rails. The inner ends of the rods *f* are attached to the disk C at or near the periphery thereof, so that  
90 when the disk is rotated in one direction—to the right, for instance—the blocks attached to *d'* *d''* *d'''* *d''''* shall be withdrawn and those attached to *e'* *d''''''* *e''* *d''''''''* thrust into the spaces or notches *a*, thus opening the track composed of  
95 the rails A A'. When the disk is turned in the opposite direction, the track A A' will in like manner be closed and the track B B' opened for the passage of the train.

In order that the crossing may be properly set by a train approaching from either direc-  
100 tion, an arm, G, mounted upon a shaft, *g*, is located at or near the side of the rail, in posi-



tion to be struck and forced down by some portion or projection upon the approaching train. Upon the opposite end of the shaft  $g$  is fastened a crank-arm,  $g'$ , from which a rod,  $g^2$ , extends and is connected to the disk C. The levers G are located at suitable points some distance from the crossing, and when either track is clear its controlling-levers are down, and those of the other track are raised into a vertical position, so that if a train should approach on the closed track the levers would be struck and the track opened, at the same time setting the levers for the other track. The crank-arm of the several operating-levers may be arranged either above or below the shaft, and the connecting-rod  $g^2$  being attached to the disk for pushing or pulling, to correspond to the difference in direction.

In connection with the automatic devices for setting the crossing, and as supplemental thereto, it is contemplated that a signal should be employed to indicate which track is open for the passage of trains, and to serve also as a means for independently operating the mechanism. For this purpose the operating-disk C is connected to one or more targets or other signaling devices, or to a crossing-gate, by rods  $d$ , in such manner that when the disk is reciprocated by an approaching train or otherwise the signal shall be thereby correspondingly changed to indicate which track is open and which closed.

As the movements of the blocks for opening and closing either track are governed by the same disk to which the signal is attached, their movements must be made together; hence the act of setting the signal by hand or otherwise will insure a proper placing of the filling-blocks and the opening of the track indicated by the signal.

Suitable coverings are to be applied to the working mechanism to protect it from injury and clogging.

Having thus described my invention, what I claim as new is—

1. In a railway-crossing, and in combination with the intersecting rails lying in the same plane, the removable filling blocks or sections for each rail, substantially as described.

2. In a railway-crossing, and in combination with the intersecting rails lying in the same horizontal plane, the removable sections and fixed bearing-plates, substantially as described.

3. In combination with the intersecting rails lying in the same plane, the series of

movable sections or filling-blocks connected to a common reciprocating disk, substantially as described.

4. In a railway-crossing, and in combination with the intersecting rails occupying the same general plane and crossing at the same level, the reciprocating sections, centrally-located disk, and connecting-rods, substantially as described.

5. In a railway-crossing, and in combination with the intersecting rails thereof, located in the same plane, the movable sections, and mechanism, substantially such as described, for simultaneously inserting and withdrawing said sections to open and close either track, as set forth.

6. In a railway-crossing, and in combination with the intersecting rails thereof, located in the same plane, the movable sections, and mechanism, substantially such as described, whereby one track is opened and the other closed by the approaching train, substantially as described.

7. In combination with the movable sections, reciprocating disk, and connecting-rods, the crank-shaft, connecting-rod, and operating-arm located in the path of the approaching train, substantially as and for the purpose set forth.

8. In combination with the intersecting rails, movable sections, cranked shaft, and operating mechanism, substantially as described, the signaling device connected to and moving with the operating mechanism to indicate which track is open, substantially as set forth.

9. In combination with the movable sections, reciprocating disk, and connecting mechanism, the signaling device, and the rod connecting it to the said disk, whereby the several sections and signals are simultaneously operated, as set forth.

10. In combination with the intersecting rails, bearing-plates, and inclined surfaces, the movable sections mounted upon plates and arranged to fall below the surface of the rail when withdrawn from the spaces between the rails, substantially as described.

11. The movable sections, operating crank-shaft, and signal mechanism, in combination and operating in connection with the central disk, substantially as and for the purposes set forth.

CALEB C. POLK.

Witnesses:

JOHN CARD,  
J. H. DORSHEIMER.