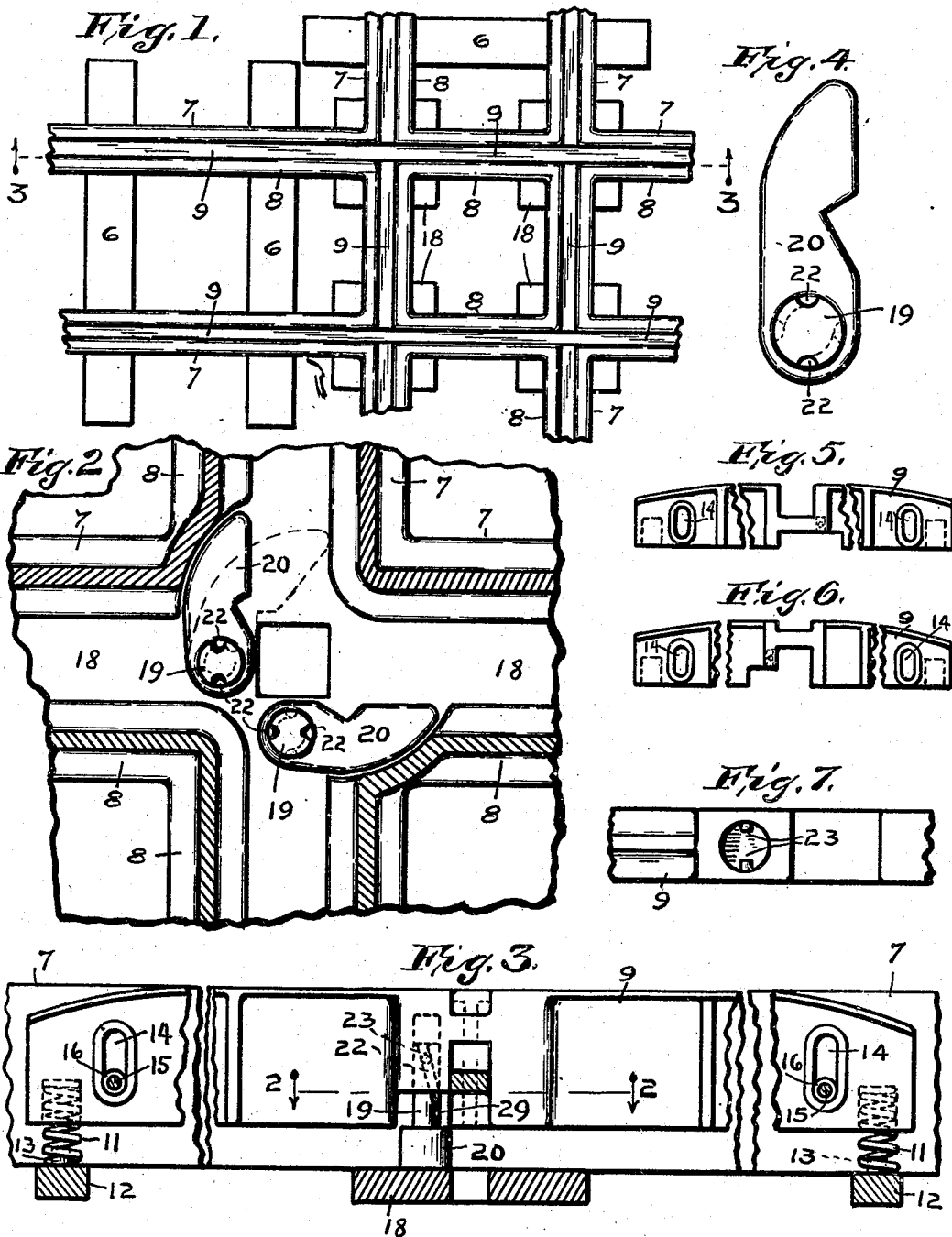


I. O. STANT.
RAILWAY CROSSING.
APPLICATION FILED MAR. 15, 1909.

942,358.

Patented Dec. 7, 1909.



WITNESSES:

L. B. Moerner,
Wm Hurte.

INVENTOR

Ira O. Stant,

By Minturn Moerner,
Atty.

UNITED STATES PATENT OFFICE.

IRA O. STANT, OF DUBLIN, INDIANA, ASSIGNOR OF ONE-FOURTH TO S. P. BRADWAY, OF DUBLIN, INDIANA, AND ONE-FOURTH TO NEWTON BALANCE VALVE CO., OF NEWTON, IOWA.

RAILWAY-CROSSING.

942,358.

Specification of Letters Patent.

Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, IRA O. STANT, a citizen of the United States, residing at Dublin, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Railway-Crossings, of which the following is a specification.

This invention relates to improvements in railway crossings and the object is to provide a practically continuous and solid bearing or rail for the car wheels.

In the crossings now in common use a break is caused in each rail where the rail of the opposite track crosses, due to the space requirements for the downwardly projecting flanges of the car wheels. The break in the rail which this space necessitates causes a pounding of the adjacent ends of the rails at the passage of every car-wheel, and this pounding soon crystallizes the metal of the rail causing it to disintegrate rapidly and crumble.

My invention consists primarily in a supplemental vertically movable rail on the inside of each rail of each of the two tracks, which will stand normally level with its respective adjacent track rail, and I provide means by the depression of the movable rails of one track by the action of the flanges of passing car wheels, to lock the movable rails of the opposite or cross-track in elevated position thereby closing the space or break in the track over which the car wheels are passing.

I accomplish the objects of my invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a top plan view of a railway crossing embodying my invention. Fig. 2 is a detail in horizontal section on the line 2—2 of Fig. 3 showing the intersection at right angles, of the two rails. Fig. 3 is a detail in vertical section on the line 3—3 of Fig. 1. Fig. 4 is a top plan view of one of the shoes. Fig. 5 is a view in side elevation of one of the movable rails. Fig. 6 is a like view of a movable rail to operate at right angles to the rail shown in Fig. 5, and Fig. 7 is a detail in under side plan view of the movable rail shown in Fig. 6 on a larger scale than in said Fig. 6.

Like characters of reference indicate like

parts throughout the several views of the drawing.

6 are the cross-ties, 7 the track-rails, and 8 the guard-rails, all of usual and well-known construction, the same being shown as comprising two railroad tracks crossing each other at substantially right angles. Located between the rails 7 and the guard-rails 8, in the space therebetween which is provided for the flanges of the wheels of the cars moving over the tracks, is a movable rail 9, there being two of the movable rails 9 for each track or four altogether at each crossing. Each of these movable rails 9 extends across the opposite track and to a distance on each side sufficient to enable the flanges of the wheels of an approaching train to operate the movable rails of that track and lock the movable rails of the opposite track. The movable rails of the two tracks intersect each other and at their intersection they are notched as shown in Fig. 3 to permit this and to prevent interference in their vertical movements. Both rails are sufficiently notched at their tops to permit the passage of car-wheel flanges without interference when the movable rails are in their maximum raised positions. The tops of the movable rails adjacent to these notches fill in the flange-space that otherwise would break the continuity of the track-rail crossing said movable rail.

The movable rails 9 are provided with sockets to receive the ends of springs 11. The springs 11 are supported on base plates 12 and the plates 12 have lugs 13 which enter the coils of springs 11 and retain the springs in position on plate 12. There are at least two of these springs 11 to each movable rail 9, one at each end of said rail, and there may be more than two springs if needed. These springs will hold the movable rail 9 in normal elevated position, with the top of the rail 9 on a level with the top of the adjacent track-rail 7. The movable rails 9 will be provided with vertical slots 14 through each of which a bolt 15 will pass. The bolt 15 will also pass through the adjacent track-rail 7 and guard-rail 8, and these bolts 15 passing through slots 14, will guide and direct the vertical movement of the movable rail 9. The bolts 15 will preferably

be surrounded by a spacing-tube 16, the ends of which will bear against the adjacent fixed rails 7 and 8 and permit the bolts 15 to be tightened up without binding the movable rail 9 between said fixed rails 7 and 8.

18 is a base plate located under the intersection of each pair of rails and mounted thereon are a pair of vertical shafts 19 each having a shoe 20. These shafts 19 are adapted to be rocked, and their rocking will be accomplished by the vertical movement of movable rails 9. The rails 9 will have sockets to receive the upper ends of shafts 19 and the two shafts 19 of each base plate 18 will each operate in conjunction with the opposite moving rails 9 intersecting at that plate 18. The rock shafts 19 have spiral grooves 22 to receive lugs or pins 23 carried by the moving rail 9 and extending into the socket of the latter receiving its respective rock shaft 19. The downward movement of the movable rail 9 causes shaft 19 to rock by the action of lugs 23 on the spiral groove 22 of said shaft. The shoe 20 of shaft 19 lies under the rail 7 when the movable rail 9 is in its highest position, but the lowering of the rail 9 and consequent rocking of shaft 19 swings the shoe 20 under the adjacent movable rail 9 and provides a solid support for the last rail 9 whereby the latter fills the gap in rail 7 and forms a practically continuous unbroken rail for the passage of the car wheels over said rail 7 parallel with the movable rail 9 which has been lowered.

Inasmuch as car wheel-flanges vary in their extent it becomes necessary for me to provide for this variation. I therefore form the spiral groove 22 in rock shaft 19 of sufficient length to cause the shoe 20 to be thrown into proper position under its rail 9 by the smallest wheel-flange; then to accommodate the greater flanges I extend the spiral grooves 22 straight down, or longitudinally of the shaft 19, without making same spiral as shown at 29 in Fig. 3. This permits the pins 23 to travel on downwardly by the continued movement of movable rail 9 by the action of greater flanges, without further rotation of shaft 19. After the car wheels have passed the movable rail 9, the latter are returned to normal elevated position by the action of springs 11.

To avoid an accumulation of water which would allow the working parts of my device to freeze up I insure drainage by reducing the thickness of the movable rail 9, at each side of the latter below the top, except where stiffening flanges are required for strength, as shown in the drawing.

The broad feature of my invention is that movable shoes are made to move by a movable rail into position to render an opposite movable rail immovable whereby the latter thus temporarily fills the flange-space in the

track-rail parallel with the movable rail that set the shoes. This may be variously accomplished by actuating mechanisms differing from the particular mechanism for the purpose herein shown and described. Hence I do not limit my invention to such particular mechanism except in such of the appended claims as specifically set forth parts thereof.

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

1. In a railway crossing, the combination with the fixed rails of two cross-tracks having wheel-flange notches therein, of movable rails adapted in their elevated positions to fill out the notches in said fixed rails, means for locking said movable rails in their elevated positions, and means by the lowering of the movable rails of one track for locking the movable rails of the other track.

2. In a railway crossing, the combination with the fixed rails of two cross-tracks having wheel-flange notches therein, of movable rails adapted in their elevated positions to fill out the notches in said fixed rails, shoes to lock the movable rails in elevated position, and means by the lowering of the movable rails of one track for locking the movable rails of the other track.

3. In a railway crossing, the combination with the fixed rails of two cross-tracks having wheel-flange notches therein, of movable rails adapted in their elevated positions to fill out the notches in said fixed rails, shoes to lock the movable rails in elevated position and means by the lowering of the movable rails of one track for locking the movable rails of the other track, said means comprising spirally grooved rocked shafts to which said shoes are fixed and lugs on the movable rails to engage said spiral grooves and rock said shafts by the travel of the movable rails.

4. In a railway crossing, the combination with the fixed rails of two cross-tracks, having wheel-flange notches therein, of movable rails adapted in their elevated positions to fill out the notches in said fixed rails, shoes to lock the movable rails in elevated position and means by the lowering of the movable rails of one track for locking the movable rails of the other track, said means comprising spirally grooved rock shafts to which said shoes are fixed and lugs on the movable rails to engage said spiral grooves and rock said shafts by the travel of the movable rails, the lower ends of the grooves on said rock shaft extending longitudinally of the shaft and not spirally.

5. In a railway crossing, the combination with fixed rails and movable rails of shafts located in sockets in the movable rails and having shoes adapted to be moved by the rocking of their shafts into position to lock

oppositely placed movable rails in their elevated position, said rock shafts having spiral grooves terminating with straight portions extending longitudinally of the shaft, 5 the sockets in which said shafts are seated having lugs which enter said grooves.

In witness whereof, I, have hereunto set

my hand and seal at Indianapolis, Indiana, this 11th day of March, A. D. one thousand nine hundred and nine.

IRA O. STANT. [L. s.]

Witnesses:

F. W. WOERNER,

L. B. WOERNER.