L. O. HARBAUGH.

RAILROAD CROSSING.

APPLICATION FILED OCT. 12, 1911.

1,038,358.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

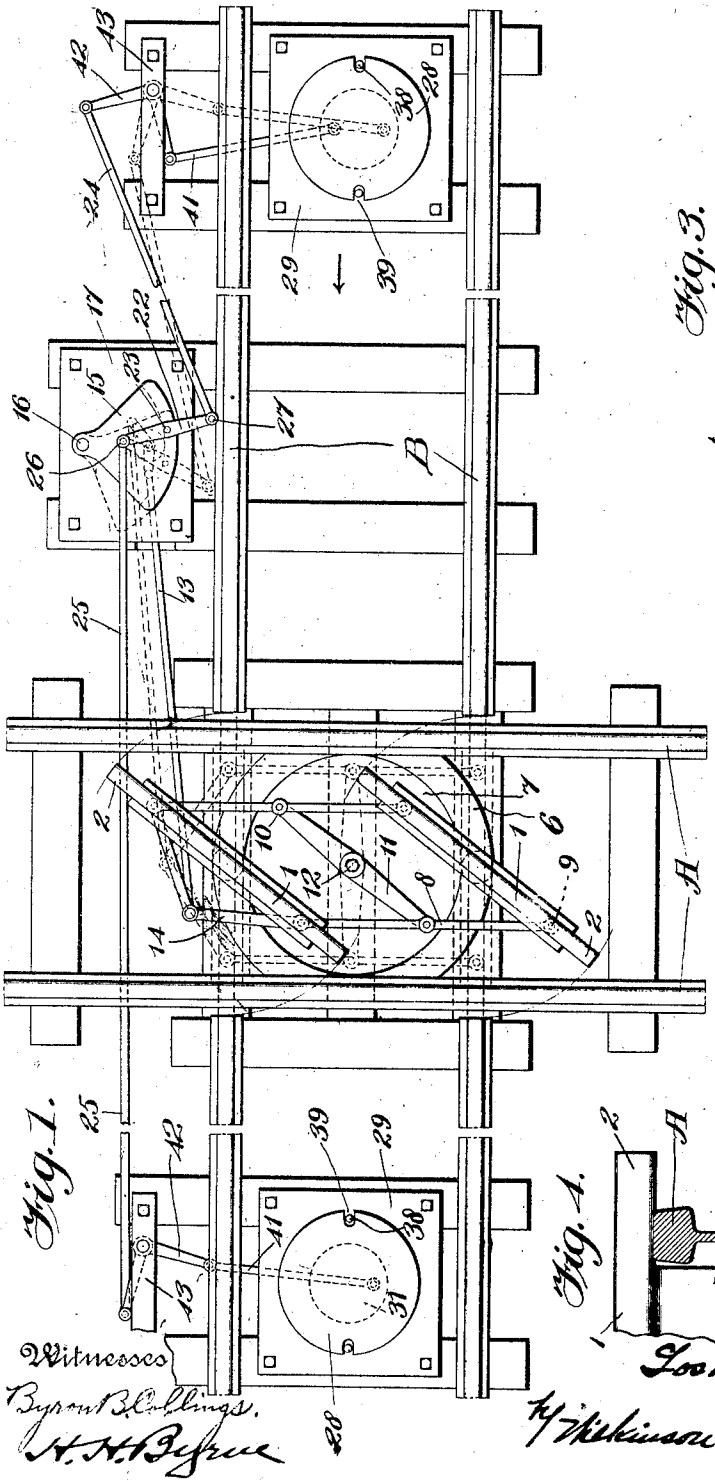


Fig. 1.

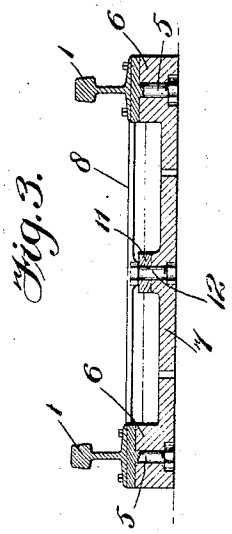


Fig. 3.

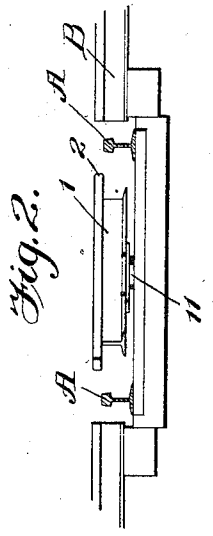


Fig. 2.

Fig. 4.

Witnesses

Byron B. Collings.

H. H. Bruce

Inventor

Louis O. Harbaugh

by Wilkinson, Fisher & Whittemore

Attorneys

L. O. HARBAUGH.

RAILROAD CROSSING.

APPLICATION FILED OCT. 12, 1911.

1,038,358.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 2.

Fig. 5.

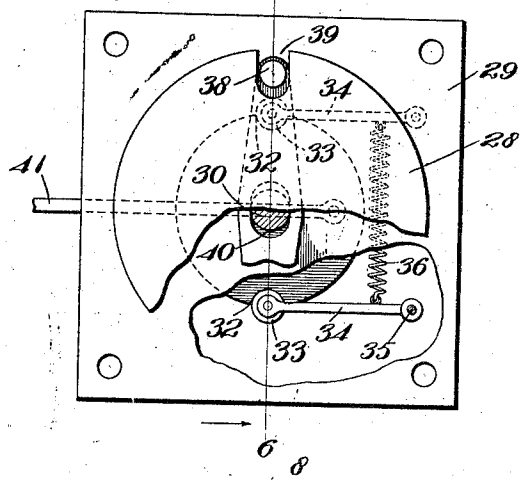


Fig. 6.

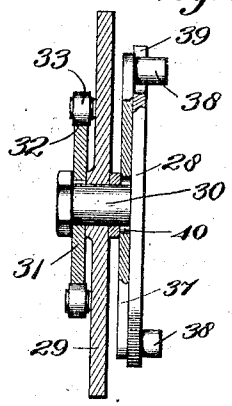


Fig. 7.

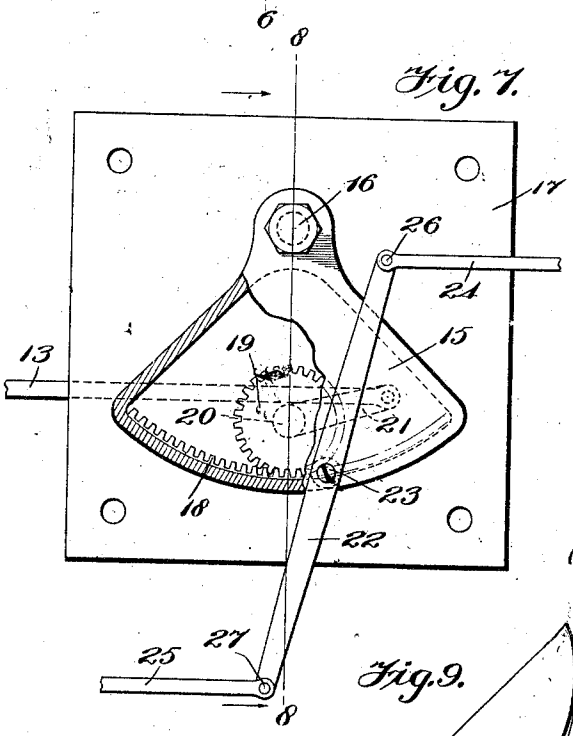


Fig. 8.

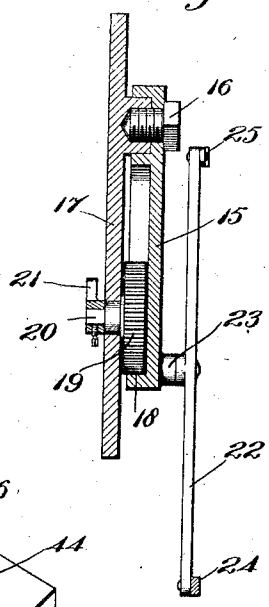
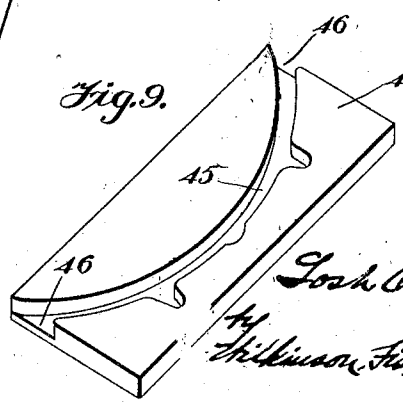


Fig. 9.



Witnesses

Byron B. Collings.

N. N. Bylee

Inventor

Lork O. Harbaugh

by Wilkinson, Fisher & Whittemore

Attorneys

UNITED STATES PATENT OFFICE.

LOSH O. HARBAUGH, OF PIQUA, OHIO.

RAILROAD-CROSSING.

1,038,358. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed October 12, 1911. Serial No. 654,423.

To all whom it may concern:

Be it known that I, LOSH O. HARBAUGH, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Railroad-Crossings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to railroad crossings, and has for its purpose to provide an arrangement of tracks whereby a car or train may be successfully passed thereover without the usual bumping or jarring incident to having the track ends separate, as is now the case with the type of crossings employed.

The invention further proposes a construction whereby the tracks of one of the lines are uninterrupted at the crossing, and wherein a means is automatically actuated by the cars of the other line to provide a similar unbroken way for said line.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—Figure 1 is a top plan view of a railroad crossing employing my invention. Fig. 2 is a side elevational view, partly in section, and on a reduced scale, showing the crossing arrangement. Fig. 3 is a transverse sectional view of the movable track section. Fig. 4 is a detail view showing the manner of supporting the ends of the movable track section. Fig. 5 is a top plan view, partly broken away, of one of the track shifter actuating devices. Fig. 6 is a transverse sectional view of Fig. 5 taken on the line 6—6 and looking in the direction of the arrows. Fig. 7 is a top plan view, partly broken away, of the track shifting device. Fig. 8 is a transverse sectional view of Fig. 7 taken on the line 8—8 and looking in the direction of the arrows, and Fig. 9 is a detail perspective view of the track shifter actuating device carried by the car.

Referring to the construction in detail A designates the main line whose tracks are designed to be continuous and unbroken at the place of crossing, and B designates the tracks of the crossing line whose rails are adapted to be temporarily made continuous through the medium of the apparatus herein disclosed. The rail ends of the tracks B at the place of crossing are adapted to be connected through the medium of a pair of track sections 1, whose ends 2 are adapted to be brought into close engagement with the ends of the tracks B. To this end said track sections 1 have their web and flange portions 3 and 4 cut away, whereby the ends 2 may be readily moved over and be supported upon the rails of the track A. The bed of the rails A is located sufficiently below the bed of the rails B to enable the track ends 2 being swung over or clear of the rails A, as illustrated in Figs. 1, 2 and 4.

The track sections 1 are each mounted on a pivot 5, within raised bearing portions 6 of a bed plate 7; and through the medium of a pair of links 8 that are pivotally connected at 9 adjacent the track ends 2, said track sections 1 are designed to be moved in unison. The links 8 are connected at 10 by a lever 11, which is in turn pivotally secured centrally of the bed plate 7 by a bolt or stud 12.

The means for swinging the track sections 1 on their respective pivots to and from position, comprises an actuating device that is connected therewith through the medium of a rod 13 and a pair of angularly disposed links 14. The actuating device comprises a quadrant head 15 fulcrumed at 16 to a supporting plate 17, which is suitably mounted on a pair of ties of the rails B, as indicated in Fig. 1. The quadrant head 15 is provided with an arcuate rack 18 which meshes with the teeth of a pinion 19 that is mounted on a stud 20 journaled in the plate 17 (see Fig. 8). The stud 20 has keyed thereon one end of a

crank 21. The pinion 19 is designed to be rotated to actuate the crank 21 for moving the rod 13, through the medium of its gearing connection with the quadrant head 15. The head 15 is designed to be oscillated through the medium of a lever 22 that is pivotally connected therewith at the point 23. Said lever 22 is connected with a pair of rods 24 and 25 at the points 26 and 27 respectively, and through which rods the lever is actuated, with either of the pivots 26 and 27 serving as the fulcrum. The rods 24 and 25 are designed to be actuated through the medium of suitable devices located to either side of the crossing through the agency of the car. Each of said actuating devices consists of a table 28 (see Figs. 5 and 6) journaled in a supporting plate 29 on a shaft 30, and said shaft 30 has keyed thereon a disk 31. The disk 31 is notched at diametrically opposite points 32 to receive rollers 33 of a pair of detents, and through the medium of which the rotatable table is nomally held in position to be actuated by the passing car. Said detents comprise each an arm 34 pivoted at one end 35 to the baseplate 29, and both of the arms 34 are connected by a spiral spring 36 which gives the desired play to said arms. The table 28 is designed to be directly actuated by a device carried on the car through the medium of a two-armed lever 37 which carries at the ends of said arms two studs 38, that project through suitable apertures 39 cut in the periphery of the table 28 at diametrically opposite points. The lever 37 is mounted to have turning movement on the shaft 30 whereby to rotate with the table 28, and in addition thereto the aperture 40 of the lever 37 is slightly elongated or of substantially elliptical design as indicated in Figs. 5 and 6. The studs 38 are adapted to be engaged for actuating the table 28 through the medium of the track shifting device carried by the car, and to the end of taking up or avoiding any jarring of the lever 37, incident to such engagement, said lever is designed to have lengthwise movement relatively to the shaft 30 through the medium of the elongated opening 40, above referred to. It will be noted that the lengthwise dimensions of the openings 39 are such as will allow of this movement. The rotating movement of the disk 31 is imparted to the rod 24 through the medium of a link 41, which connects with said rod by a bell crank lever 42 that is journaled in suitable bearing members 43.

The actuating device carried by the car which engages with the studs 38 consists in a plate 44 provided with a cam groove or channel 45 whose ends 46 are flared outwardly.

The operation is as follows:—The car or train moving on the rails B in the direction of the arrow has the track shifting plate 44 depressed so as to bring the cam groove 45 into engagement with the nearest stud 38, said stud entering the cam groove at one of the points 46, and through the continued movement of the car the engaged stud 38 is caused to move the lever 37 and turn the table 28 one half of a revolution. This movement of the table causes the link 41 to turn the bell crank lever 42 and said latter movement is imparted to actuate the quadrant head 15 through the medium of the lever and rod connections 22 and 24. In this operation, the pivot pin 26 serves as the fulcrum for the lever 22 (see Fig. 1) and causes the lever 22 and head 15 to take substantially those positions indicated by broken lines. The movement of the head 15 causes the pinion 19 to be rotated, and this operation, through the connections 13 and 14, turns the track sections 1 from the position shown in Fig. 1 to the dotted line position in said view, when the rails of the track B are made continuous. As the train or car passes over the crossing, the actuating member 44 engages with the nearest stud 38 on the other track actuating device and causes an operation similar to that just described, and whereby the track sections 1 are restored to normal. It will be noted that both of the turn-tables 28 and the pinion 19 are all rotated a half revolution at each and every operation, thus insuring all operative parts being, at all times, at a dead center and in proper position to be operated by a moving car.

It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

I claim—

1. In a railroad crossing the combination with a main and a crossing line; of track sections movably mounted within said crossing; means connected with and adapted to move said track sections; a turn table located to either side of said crossing, a lever mounted adjacent and engaging with the turn table; said lever adapted to be engaged and actuated by a moving car; a disk secured to rotate with said turn table; and operative connections between the disks of said turn tables and the track moving means, substantially as described.

2. In a railroad crossing the combination with a main and a crossing line; of track sections movably mounted within said crossing; means connected with and adapted to move said track sections; a turn table lo-

cated to either side of said crossing, a two armed lever mounted adjacent and engaging with the turn table at diametrically opposite points; said lever arms adapted to be engaged by a moving car to turn said table; a disk secured to rotate with the turn table; a detent device associated with said disk; and operative connections between the disks of said turn tables and the track moving means, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

LOSH O. HARBAUGH.

Witnesses:
H. GRAFFLIN,
E. MILTON CROWE.