

May 16, 1933.

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1,908,677

RAILWAY CROSSING

Filed June 15, 1931

2 Sheets-Sheet 2

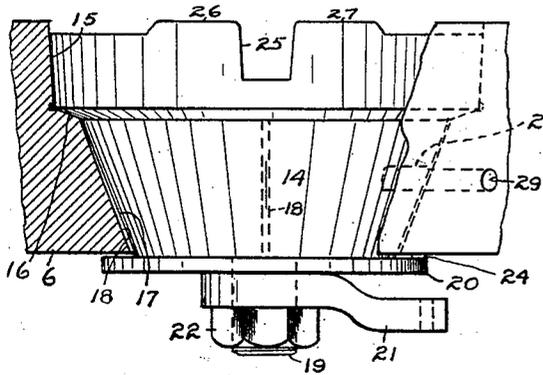


Fig. 3.

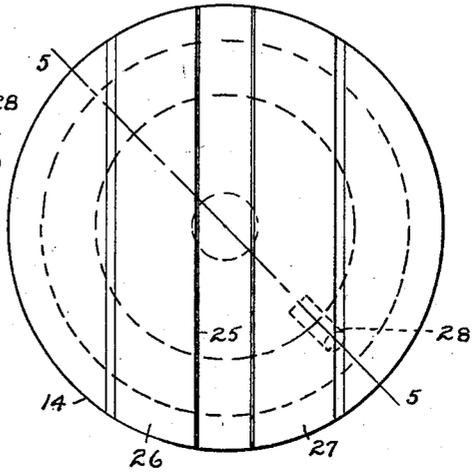


Fig. 4.

Fig. 5.

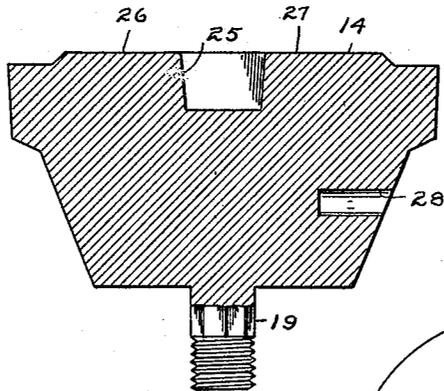


Fig. 6.

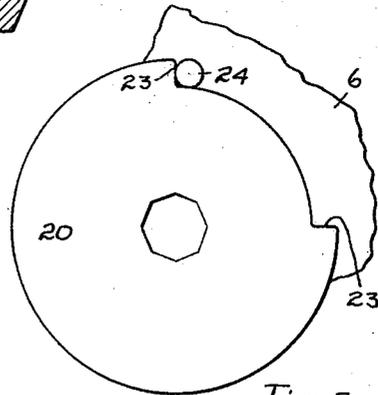
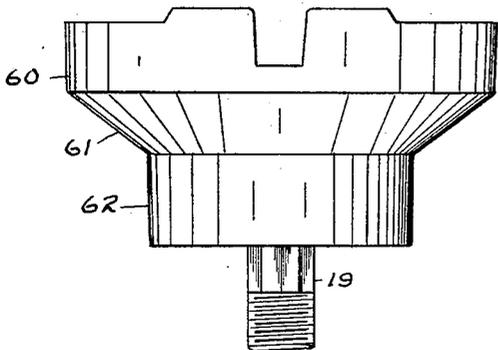


Fig. 7.

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RAILWAY CROSSING

Application filed June 15, 1931. Serial No. 544,406.

The invention relates to railroad crossings and its object is to provide a crossing by which a train may travel on a continuous track without interference from the other or second track and avoid the noise and wear and tear attending the commonly used crossing.

Another object is to provide a crossing controllable at a remote point for traffic on either track and which is positively locked against operation until released.

Another object is to provide a crossing in which rotatable rail elements to turn tables at the intersecting points of the rails are so formed and operated that the traffic on one track always moves on the same surface of said elements and traffic on the other track always rides on another surface of said elements.

Another object is to provide a rotatable rail element at each intersection of the rails of two tracks which will not bind in its supporting structure and which will withstand a maximum of wear.

Other objects will be referred to hereinafter.

The invention consists in a plurality of tapered turntables pivotally mounted at the intersecting points of the rails of two tracks and connected for simultaneous operation and means to lock the turntables in alignment with the rails of either track.

The invention is illustrated in the accompanying drawings in which

Figure 1 is a plan view of a crossing embodying the invention; Fig. 2 a cross section on line 2—2 of Fig. 1; Fig. 3 a fractional view of the crossing broken away and partly in section; Fig. 4 a plan view of one of the turntables; Fig. 5 a cross section on line 5—5 of Fig. 4; Fig. 6 an elevational view of a modified form of the turntable; and Fig. 7 a bottom plan view of the washer.

Referring to the illustrative embodiment of the invention, 1, 2 represent sections of the two rails of one track and 3, 4 represent sections of the two rails of another track that crosses the first named track. The crossing for the two tracks is made preferably in four similar sections indicated generally by the

reference character 5. Each section 5 consists of a body 6 having four radiating arms 7, 8, 9, 10. Each arm is longitudinally slotted to form a rail tread 11, a throat 12 and a guard rail 13. The longer arms 9, 10 of each section are preferably beveled at their outer ends so as to about the corresponding ends of the corresponding arms of another section. The outer ends of the shorter arms 7, 8 of each section abut the ends of the adjacent rails of the two tracks. The tread surfaces 11 are level and of the same height so that they line up with and are level with the treads of the rails respectively and are continuous therewith.

Each body 6 is cored, as shown in Fig. 3, to receive a rotatable rail section or turntable 14. The wall 15 of the upper portion of the coring tapers slightly downwardly and inwardly, and the wall 16 adjacent the wall 15 tapers relatively sharply, and below the wall 16 the wall 17 tapers inwardly at any desired angle to the wall 16, or it may be substantially straight. Oil grooves 18 are formed in the walls 15 and 17.

Each rail section or turntable 14 is formed to seat on the walls of the coring, with its lower end projecting below the bottom of the body 6. A stem 19 depends from the lower end of the turntable 14, the upper portion of the stem having flat faces to receive a washer 20 and an arm 21. The lower end 22 of the stem is threaded to receive the nut 22 by which to clamp the arm 21 and the washer firmly on the turntable. The washer 20 is larger in diameter than the lower end of the turntable so that it extends beneath the body 6 and prevents the turntable from moving upwardly out of the coring. The washer normally does not contact with the bottom side of the body, so that the table is free to turn on its seat.

The edge of the washer is removed for a selected distance to form two spaced shoulders or stops 23 for abutment by a pin 24, which depends from the bottom of the body 6. The abutments limit the rotation of the washer and the turntable in both directions. A throat or groove 25 is formed in the top side of the turntable and extends the full

width thereof. At opposite sides of the groove two tread surfaces 26, 27 are formed which are level with the tread surfaces 11 on the arms 7, 8, 9 and 10 of the body. The surface of the turntable between each tread 26, 27 and the adjacent peripheral edge is lower than the tread so as to accommodate the tread of a wheel which may be so worn that the outer portion might otherwise contact with said surface.

A hole 28 is formed in the side of the turntable 14 and is adapted to register with either of two apertures 29 formed in the body 6 in which the pins 30, 31 are longitudinally slidably supported. The rods 32 are suitably pivotally connected to the pins 30 respectively and to a suitable member 33 revolvably mounted on the cross tie 34. An arm 35 is secured to or is integral with the member 33 and a rod 36 is suitably pivotally connected to the arm 35 and to a bell crank lever 37 to which lever a rod 38 is connected. The rod 38 leads from a suitable operating member, such as the usual lever installed in a tower. A similar arrangement of rod 32 and lever 37 is operatively connected to the pins 31.

A rod 39 also leads from the tower or other point and is connected to the T crank levers 40, 41 pivotally mounted on the ties 42. The crank 40 is operatively connected by the rods 43, 44 to the arms 21 on the turntables 45, 46 and the crank 41 is operatively connected by the rods 47, 48 to the arms 21 on the turntables 49, 50 the arm on each turntable being so positioned that when the rod 39 is reciprocated, as to the left in Fig. 1, the cranks 40, 41 will cause the turntables to rotate sufficiently to cause the treads not engaged by the previous train on one track to line up for use by the train travelling on the other track. In Fig. 1, the treads 26 on the turntables 45, 46 and the treads 27 on the turntables 49, 50 are set for use by the traffic on the rails 1, 2. Upon reciprocating the rod 39 to the left the turntables are rotated to set the other tread on each table for use by the traffic on the rails 3, 4. Thus the traffic on one track always travels on the same treads on the turntables and traffic on the other track always travels on the other treads on the turntables, the treads being continuous with the treads on the arms of the bodies 6 with which they are in alignment. Hence there is no interference between the two tracks and the usual noise and the spreading of the metal at the commonly used crossing are avoided.

The locking pins must necessarily be withdrawn from the turntables before the turntables can be rotated and of course no pin can be inserted into any hole 28 in a turntable until the hole is in alignment with the pin. The stops 23 on the washer 20 cooperate with the pin 24 to assure alinement of the hole 28

with the pin 30, 31 respectively. The hole 28 is somewhat oval in form so as to provide enough play for the pin to accommodate any downward vertical movement of the turntable as it wears.

Since the turntables are tapered they do not tend to bind in the bodies 6. Lubricant of suitable form supplied to the grooves 18 will lubricate the contacting surfaces and make for easy rotation of the turntables. The oil grooves may be formed at all desirable points in the wall of the coring.

The ties are preferably diagonally placed so that the structure will be rigidly supported.

In practice the arms on each section 5 will radiate at the proper angles to cause them to coincide with the rails of the two tracks and the stops 23 will be properly spaced to control the movements of the turntables in accordance with the angularity of the arms.

The axis of each turntable is off center relatively to the tread surfaces on the arms of each section 5 so that the proper tread surface will align with the rails.

As illustrated, the crossing sections are in cast form, but it is evident that they may be formed in any suitable manner.

In Fig. 6 the intermediate sloping peripheral wall 61 of the turntable 60 is more extensive and the slope of the lower wall 62 is less than that of the corresponding walls of the turntable 14. The taper of the turntable will be such as will prevent sticking of the table on its seat.

What I claim is:

1. In a railway crossing, the combination of tapered turntables placed at the intersections of the main rails of the crossing tracks, each table having two parallel rail treads formed upon its upper surface, body members each having a tapered opening to receive and revolvably support a turntable with its lower end projecting from the bottom of the body member, means operatively connected to the projecting ends of the tables to turn them, means to releasably lock the tables to the body members, means to limit the turning movement of the tables in each direction and rail and guard forming members radiating from the body members respectively some of which are adapted to align with and abut the main rails of the two tracks and the remainder of which abut to form rails continuous with the main rails respectively.

2. In a railway crossing, the combination of tapered turn tables placed at the intersections of the main rails of the crossing tracks, each turn table having a rail tread formed upon its surface, body members each having a tapered opening to receive and revolvably support a turn table with its lower end projecting from the bottom of the body member, rail tread forming members on the body members at opposite sides of the tapered openings

respectively and means connected to the projecting ends of the turn tables for turning them to cause the rail treads on the turn tables to connect with opposite rail tread forming members on the body members.

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3. In a railway crossing, the combination of tapered turn tables placed at the intersections of the main rails of the crossing tracks, each turn table having a rail tread formed on its top surface, body members each having a tapered opening adapted to receive a turn table with its lower end projecting from the bottom of the body, rail tread-forming members on the body members at opposite sides of the tapered openings therein and adapted to be alined with the main rails, means connected to the projecting ends of the turntables to rotate the turn tables to cause their rail treads to aline with either opposite rail tread-forming members on the body members respectively and means to releasably lock the turn tables in adjusted position.

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