

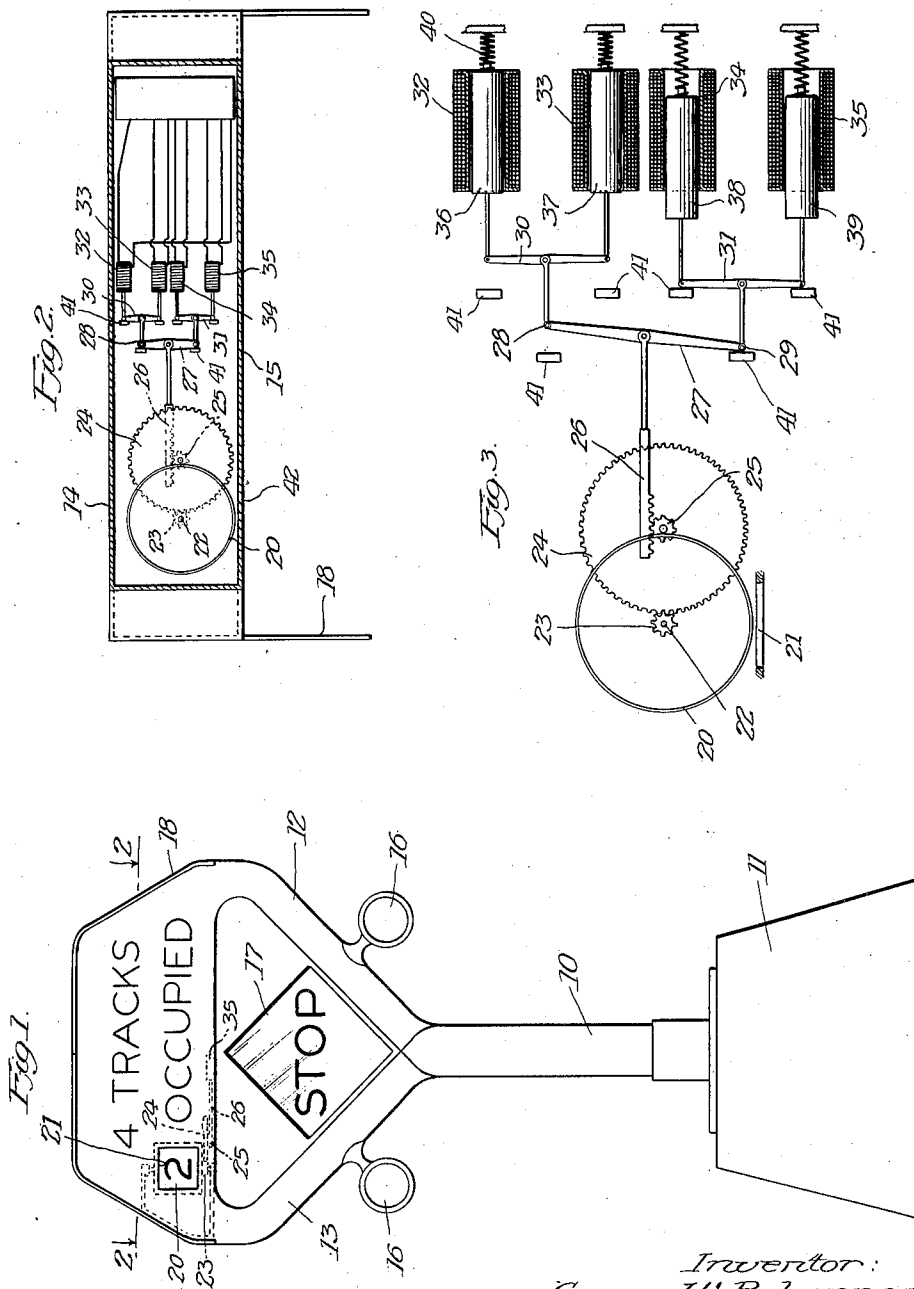
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RAILWAY CROSSING SIGNAL

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RAILWAY CROSSING SIGNAL

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1 Claim. (Cl. 246—125)

The invention relates to signalling means for location at the intersection of a vehicular highway with railroad tracks and has for an object to provide an indicator for a multi-track system which will show the number of tracks occupied.

The device of the present invention is associated with the usual signal which by means of an oscillating or flashing light and alarm visibly and audibly indicates to the vehicular traffic the approach of a train. It often happens that several trains approach the intersection simultaneously and in this event, although the signal is held in warning position there is a tendency for the traffic to start across immediately as the first train clears. With indicating means such as contemplated by the present invention accurate information will be given as to the number of tracks occupied, as, for example, after one train of several approaching trains passes the intersection the signal will continue to warn traffic of their danger since the track or tracks still occupied will be indicated.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawing and claim appended hereto.

In the drawing which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is an elevational view of a railway crossing signal equipped with the device of the present invention;

Figure 2 is a sectional view taken along the line 2—2 of Figure 1 showing the mechanism for actuating the track indicator, and

Figure 3 is an enlarged plan view of the mechanism shown in Figure 2.

A conventional form of railway crossing signal comprises an upright or standard 10 suitably supported upon a concrete foundation 11 and having its upper end provided with diagonal arms 12 and 13 supporting the housing formed by side walls 14 and 15. Each arm has depending therefrom a warning light 16 which light may be operated to flash alternately or simultaneously upon the approach of a train by means of the conventional track circuit. Suitably supported for rotation intermediate the arms 12 and 13 is a visible indicator 17 which is rotated to its position, as shown in Figure 1, when a train enters the block on either side of the intersection to thus warn the approaching traffic of their danger. When the intersection is clear the lights 16 cease

flashing and the indicator 17 is rotated so as to present its edge to the traffic, in which position the warning conveyed thereby is not visible.

More particularly, the present invention contemplates equipment for association with railway crossing signals such as above described which will convey accurate information to the approaching traffic as to the number of tracks in a multi-track system that may be occupied. As shown in Figure 2, the housing formed by side walls 14 and 15 and enclosed by the hood 18 has journaled therein the cylinder 20 upon the periphery of which are provided the indicia 21 corresponding to the number of tracks at the particular intersection. As a background for the numerical indicia a rotatably mounted cylinder has been selected for illustrative purposes for the reason that a cylinder is considered preferable to a sliding disc or plate but it is to be understood that the latter are deemed as coming within the scope of the invention. The shaft 22 of the cylinder has mounted at one end the pinion 23 meshing with gear 24, in turn equipped with pinion 25 engaged by the rack 26. To one end of the rack is pivotally secured the lever 27 having connected to its ends at 28 and 29, respectively, the levers 30 and 31. Each track is electrically connected through the block signal system with a solenoid and for the four-track system contemplated in the drawing, solenoids, 32, 33, 34 and 35 are provided. Lever 30 is pivotally connected at its ends to plunger 36 of solenoid 32 and plunger 37 of solenoid 33, while in a similar manner lever 31 has operative association with plungers 38 and 39 of the remaining solenoids. Each plunger is resiliently urged outwardly of its solenoid in a direction toward the left, Figure 3, by compression springs 40, the outward movement of the plungers being limited by stops 41.

With the parts in position as shown in Figure 2, it will be evident that the cylinder 20 is so positioned with respect to aperture 42 in side wall 15 as to render visible the indicia "0" conveying to the approaching traffic the information that none of the tracks are occupied. Should a train on any one of the tracks enter the block electrically connected with the crossing signal one of the solenoids, for instance 32, will become energized, actuating its plunger and likewise through the connecting linkage of lever 30 and lever 27 the rack bar 26. Since lever 27 has connection with lever 30 at the mid-point of the latter the pivot point 28 will move only half the distance of plunger 36. The mid-point connec-

tion of the rack bar with lever 27 functions in a manner as explained so that the bar is constructed to move a distance that is only one-fourth of the movement of the plunger. The result of the operation described is to cause rotation of the cylinder 20 to locate the numeral "1" opposite the aperture 42 indicating that one track of the four-track system is occupied. In the event that a second train should simultaneously approach the intersection on another track one of the remaining solenoids will be energized to cause actuation through connecting linkage of lever 27. Irrespective of which solenoid is energized the rack bar will be caused to move a distance one-fourth of that of the movement of the actuated plunger, but since the cylinder already renders visible the numeral "1" to the approaching traffic any further rotation will bring into view the numeral "2" so that the mechanism automatically indicates the number of tracks occupied. When the train leaves the block electrically connected with the crossing signal the various solenoids are de-energized and the compression springs 40 cause the plungers to return to their initial position, rotating the cylinder in the reverse direction and rendering visible once again the zero showing that none of the tracks are occupied.

It will be understood that I do not wish to be

limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claim such as the use of a rotating disc or sliding plate in place of the cylinder 20 for display of indicia 21 or a system whereby the indicia 21 are on a stationary part and a shield discloses them as desired.

I claim:

In a railway crossing signal for a multiple track system, an indicator including a movable member, said member having numerical indicia thereon rendered visible by movement of the member, said indicia corresponding to the number of tracks in the system, operating means for said movable member having actuation when a train approaches the crossing on any one of the tracks, said member having step by step movement as the tracks of the system become occupied to cause progression of the visible indicia, and said member having step by step movement in the reverse direction as the trains leave the crossing to cause retrogression of the visible indicia.

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