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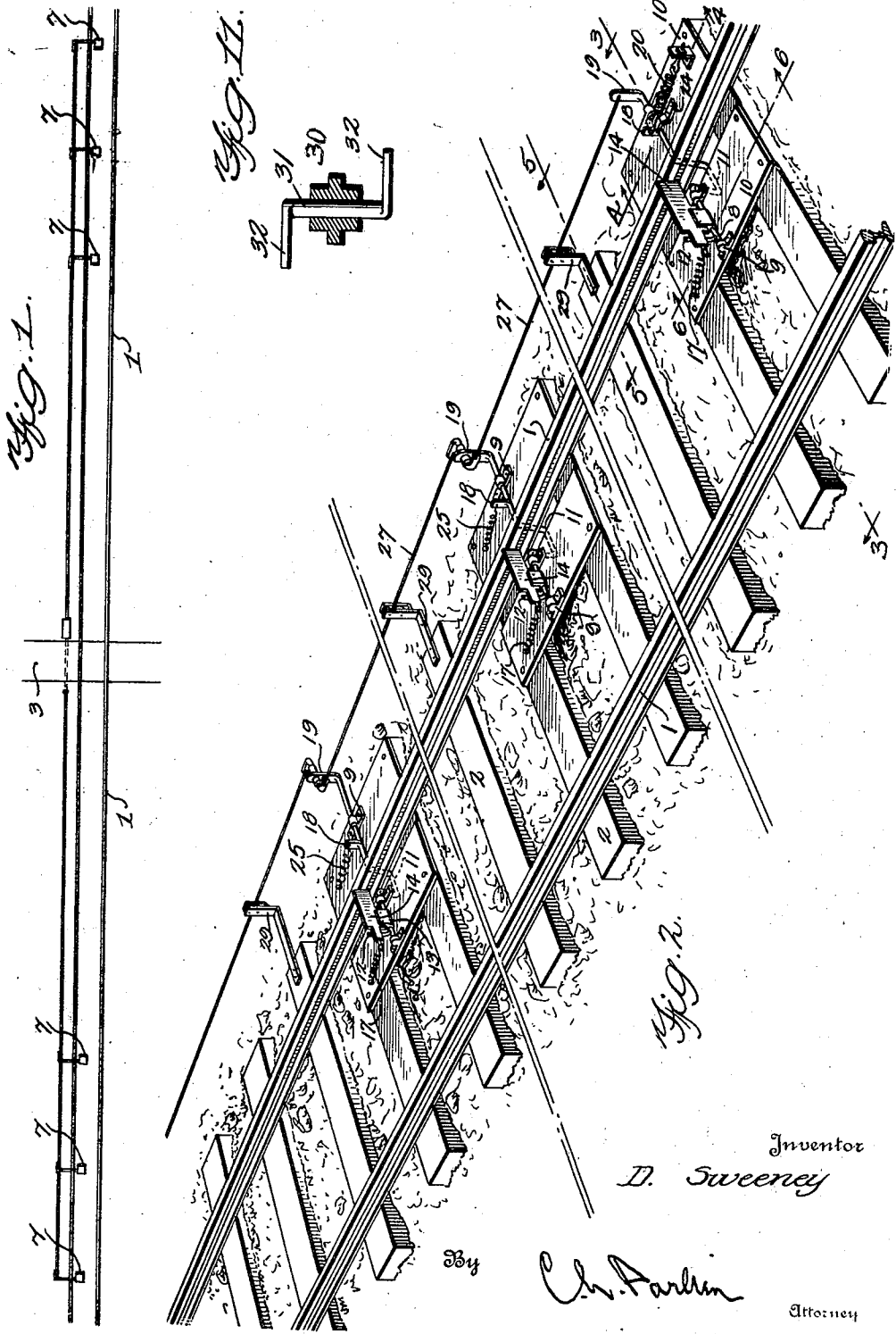
1,451,237

D. SWEENEY

TRAFFIC SIGNAL

Filed Nov. 3, 1922

3 sheets-sheet 1



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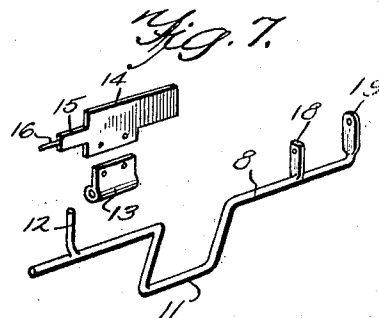
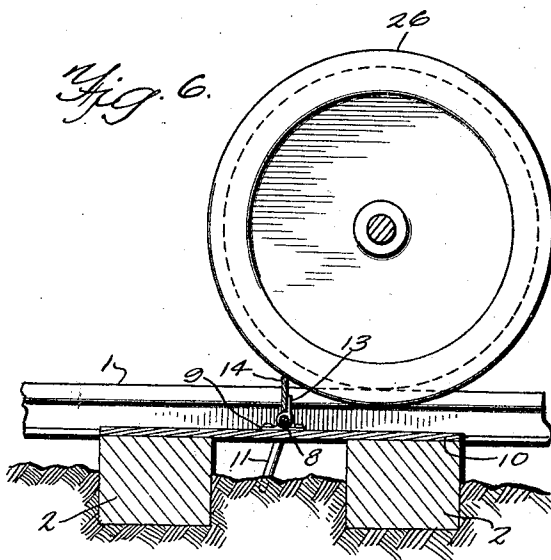
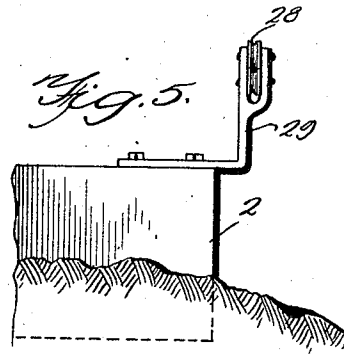
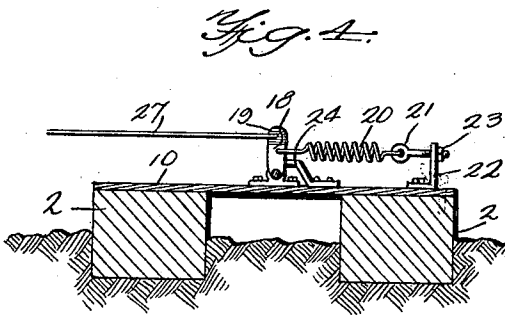
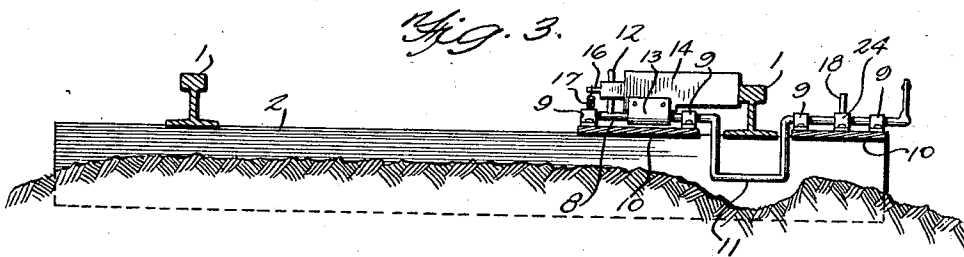
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TRAFFIC SIGNAL

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3 sheets-sheet 2



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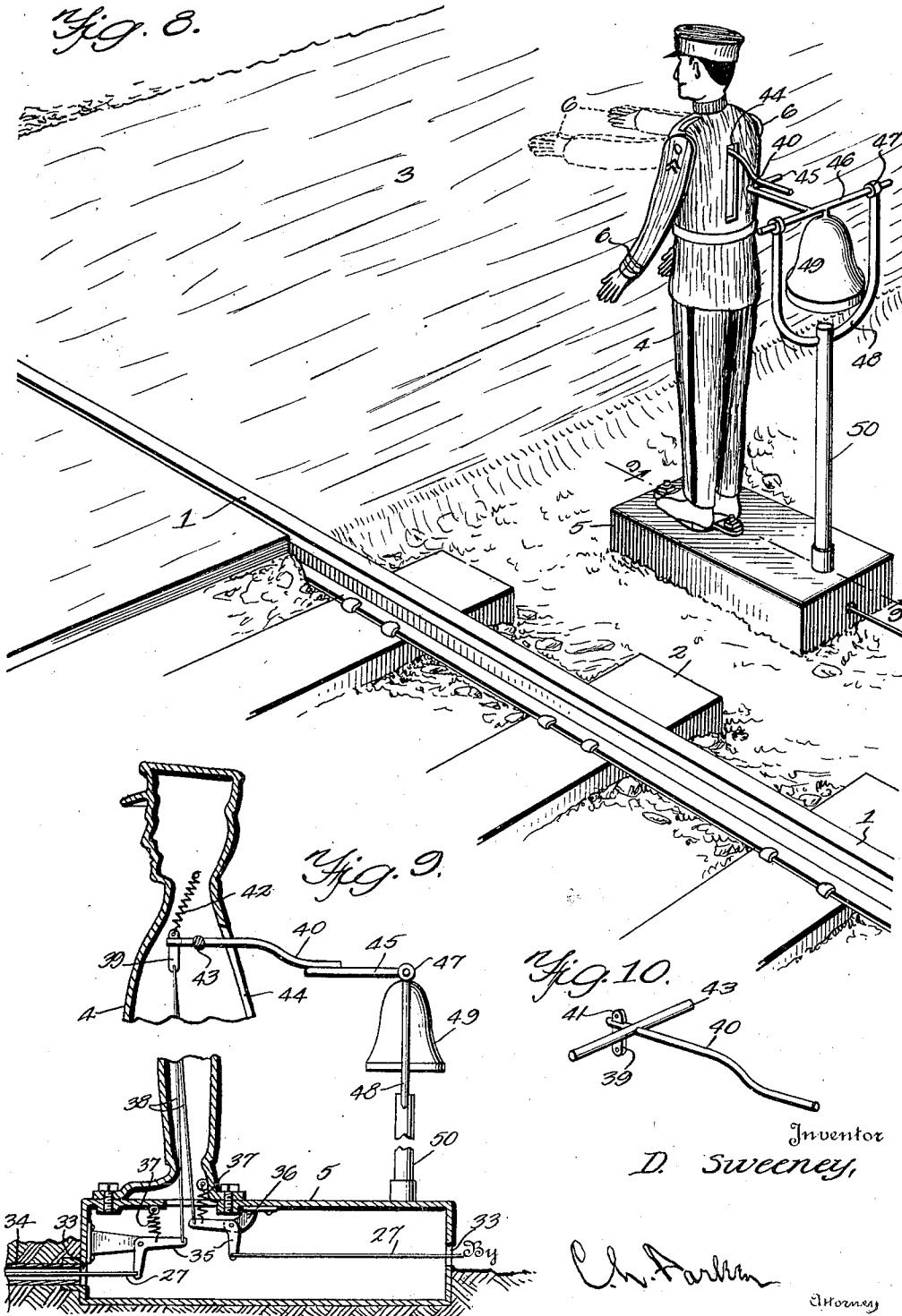
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TRAFFIC SIGNAL

Filed Nov. 3, 1922

3 sheets-sheet 3



UNITED STATES PATENT OFFICE.

DANIEL SWEENEY, OF CLARKSBURG, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO
HARRY B. KINCAID, OF CLARKSBURG, WEST VIRGINIA.

TRAFFIC SIGNAL.

Application filed November 3, 1922. Serial No. 598,787.

To all whom it may concern:

Be it known that I, DANIEL SWEENEY, a citizen of the United States, residing at Clarksburg, in the county of Harrison and State of West Virginia, have invented certain new and useful Improvements in Traffic Signals, of which the following is a specification.

This invention relates to traffic signals, and more particularly to mechanically operated signalling devices for railroad crossings to indicate the approach of a train.

An object of the invention is the provision of a simple, mechanically operated device that is positive in operation and will furnish an unmistakable signal to traffic when a train is approaching.

A further object is to provide a signal member to simulate a traffic officer with means for actuating the arms of the member to furnish the desired signals to traffic.

A further object is to provide apparatus controlled by a master spring to retain the parts in set position ready for operation at all times.

A further object is to provide an audible signal to operate in conjunction with the visible control member or signal.

In the accompanying drawings, I have shown one embodiment of the invention. In this showing:

Figure 1 is a plan view of a portion of a railroad track, diagrammatically illustrating the invention,

Figure 2 is a perspective view of a portion of a railroad track showing the actuating members,

Figure 3 is a transverse vertical sectional view on line 3—3 of Figure 2,

Figure 4 is a detail sectional view on line 4—4 of Figure 2,

Figure 5 is a detail end elevation of a guide pulley and supporting bracket therefor,

Figure 6 is a detail sectional view on line 6—6 of Figure 2, illustrating the engagement of a car wheel with the trip mechanism,

Figure 7 is a perspective view of the trip mechanism disassembled,

Figure 8 is a perspective view of the crossing showing the signal member,

Figure 9 is a detail sectional view of the signal member,

Figure 10 is a perspective view of a lever forming a part of the signal member, and,

Figure 11 is a detail view of a rock shaft arranged in the connection between the trip member and the signal member.

Referring to the drawings, the reference numeral 1 designates generally the rails of a track which may rest upon ties 2 in the usual manner. 3 indicates a cross road on which traffic crosses the railroad track, which traffic is to be notified of the approach of a train. A signal member 4 is mounted on a suitable base 5, adjacent the intersection of the track and road. As shown, the signal member is provided with arms 6 which are pivotally connected thereto and adapted to be extended to a horizontal position to indicate the approach of a train. The signal member is in the form of a traffic officer whereby it will more readily attract the attention of vehicular traffic on the road 3.

Suitable trip mechanism is arranged on the railroad track at a distance from the intersection of the track and road to indicate the approach of a train. As shown, a plurality of trip members 7 are arranged at a distance from the road 3, the members being suitably spaced from each other, as shown in Figure 1 of the drawings; whereby by repeated signals will be given from the time a train reaches the most remote signal until the last car of the train passes over the nearest signal. The trip mechanism is shown in detail in Figures 2 to 7 of the drawings. Each of the trip mechanisms consists of a rock shaft 8 journaled in suitable bearings 9 on plates 10, supported on adjacent ties. The shaft is provided with a crank portion 11 adapted to pass under the rail (see Figure 3) whereby the movement of the shaft is not interfered with by the rail. The inner end of the shaft extends between the tracks and is provided with an upstanding arm 12. A sleeve 13 is rotatably mounted on the shaft adjacent this arm and a trip plate 14 is secured thereto. The trip plate is provided with a lateral extension 15, contacting with the arm 12 and is further provided with a pin or arm 16 to which one end of a spring 17 is secured.

The other end of the spring is secured to the plate 10, as shown. Beyond the rail, the rock shaft 8 is provided with an upstanding arm 18 and the outer end of the shaft 5 is provided with a crank portion 19. On the trip mechanism remote from the crossing, a master spring 20 is secured to the arm 18. As shown in Figure 4 of the drawings, the other end of this spring is connected to an eye-bolt 21. The threaded end of the bolt passes through a clip 22, secured to the plate 10 and receives a nut 23, which permits adjustment of the tension of the spring. A stop member 24 is arranged adjacent the arm 18 and is adapted to retain the arm in a vertical position.

The remaining trip mechanisms are similar to the remote trip mechanism except that a spring 25 is secured to each of the arms 18 and these springs, together with the springs 17, are adapted to oppose the pull of the master spring. As shown, the trip plates 14 are arranged on the side of the arms 12, whereby they will be moved toward the arms when engaged by a car wheel 26 of a train or car approaching the crossing.

A cable 27 is secured to the crank 19 of the remote trip mechanism. This cable 30 passes over guide pulleys 28, carried in suitable brackets 29, arranged at spaced intervals along the track and secured to ties 2. The remaining crank arms 19 of the signal mechanisms are provided with bearings 30 for the reception of shafts 31. As shown, these shafts are provided with crank portions 32 on each end and the cable 27 from each trip mechanism is connected to the crank 32 of the adjacent signal mechanism.

The cables from the two signal mechanisms adjacent the road pass through openings 33 in the base 5. As one of these cables must pass under the road 3, it is arranged in a suitable conduit 34, as shown in Figure 9 of the drawings. The cables are connected to bell crank levers 35, mounted in suitable brackets 36. As shown, coil springs 37 which are arranged to oppose the master spring 20, are connected to these bell crank levers. The bell crank levers are in turn connected to links 38, extending upwardly through the figure 4 and connected to ear 39, carried by an arm 40. The ear 41 is arranged on the opposite side of the arm and is connected to a coil spring 42 which also opposes the master spring 20. The arm or lever 40 is provided with a cross member 43, which is mounted in suitable bearings in the signal member forming a pivot. The ends of the cross member 43 extend through the signal member and receive the signal arms 7. The lever 40 extends through an opening 44 in the rear of the signal member and is adapted to engage an actuating lever 45, carried by a cross member 46. This

cross member is rotatably mounted in suitable bearings 47 in the upper end of the yoke 48 and carries a bell 49. The yoke is supported on the upper end of a standard 50 secured to the base 5.

The operation of the device is as follows:

When a train approaches a crossing from the right of Figure 1 in the drawings, the trip members 14 are in turn depressed. As the arms 12 are arranged on the side of the trip members adjacent the road 3, or in the direction in which the trip members are depressed by an approaching train, the arms are moved downwardly with the trip members revolving the shaft 8 against the tension of the master spring 20. When the tension of the master spring is removed from the cable 27 by the rotation of the shaft, the springs 17, 25, 37 and 42 exert a pull on the cable to swing the bell crank lever on its pivot and move the links 38 upwardly. This revolves the lever 40 in a clockwise direction, rotating the cross member 43, and extending the signal arm 6 to the dotted line position shown in Figure 8 of the drawings. The depression of the outer end of the lever 40 swings the bell 49 on its pivot to give an audible signal. The audible signal, together with the outstretched arms of the signal member 4 furnishes a warning to traffic on the road 3 that a train is approaching the crossing. As soon as the car wheel disengages the trip member 14, the master spring 20 returns the parts to normal position. As stated, the master spring may be adjusted to any desired tension, but the tension of the master spring must always be sufficient to overcome the remaining springs. When a train is passing over the trip mechanism each wheel in turn actuates the trip mechanism so that there is a constant movement of the cable 27 to and fro and a constant oscillation of the lever 40 and cross member 43. This causes the bell to be rung during the entire time that the train is passing the spaced actuating members and causes the arms 6 to be constantly raised and lowered to attract attention of approaching traffic.

The arrangement of the trip member 14 and the arm 12 will be noted from an inspection of Figures 2 and 3 of the drawings. When a train approaches one of the actuating members as it leaves the crossing, the trip member 14 is revolved on the shaft 8 away from the arm 12 which does not actuate the shaft and therefore has no effect on the traffic signal. This is to eliminate giving unnecessary signals when the train is moving in the opposite direction.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit

of the invention or the scope of the sub-joined claims.

Having thus described the invention, I claim:

5 1. In a railroad crossing signal, a signal member shaped to simulate a man, said member being provided with pivoted arms, means for raising said arms, said
10 means comprising an actuating member arranged on the track at a distance from said signal member, connections between said actuating member and said arms, and a bell disposed in the path of said connecting means whereby an audible signal is
15 given when the arms are raised.

2. In a railroad crossing signal, a signal member shaped to simulate a man, a lever arranged within said member, said lever being provided with a cross arm extending through
20 the sides of said member and forming a pivot, arms carried by said cross arms, and means controlled by the approach of a train for oscillating said lever.

3. In a railroad crossing signal, a signal
25 member shaped to simulate a man, a lever arranged within said member, said lever being provided with a cross arm extending

through the sides of said member and forming a pivot, arms carried by said cross arms, means controlled by the approach of a train
30 for oscillating said lever, said signal member being provided with an opening, one end of said lever projecting through said opening, and a bell arranged in the path of said lever to be operated by the oscillation of said
35 lever.

4. In a railroad crossing signal, a signal member shaped to simulate a man, a lever arranged within said member, said lever being provided with a cross arm extending
40 through the sides of said member and forming a pivot, arms carried by said cross arm, an actuating member arranged on the track at a distance from said signal member, a flexible cable extending from said actuat-
45 ing member to said signal member, and connections between said cable and said lever.

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

DANIEL SWEENEY.

Witnesses:

L. L. CARR,
M. B. KINCAID.