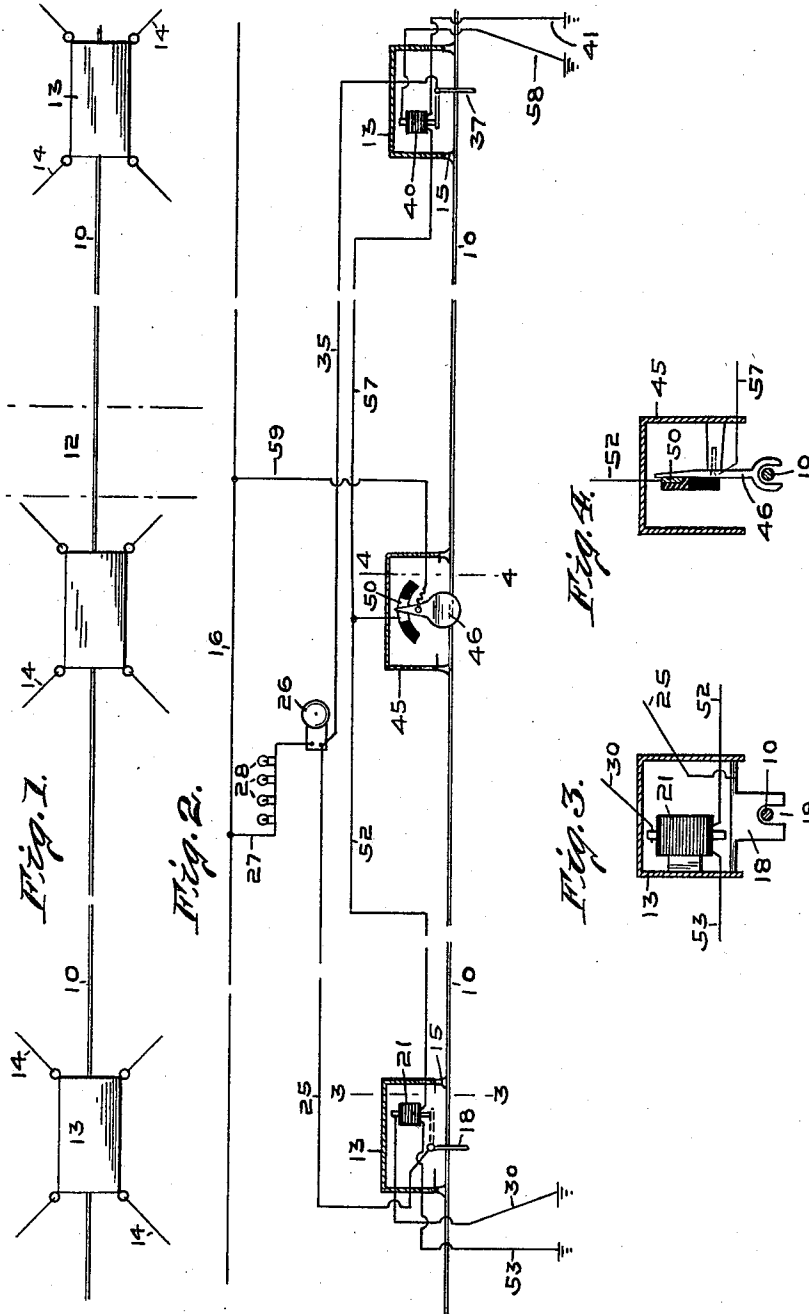


J. & W. H. JENNINGS.
SIGNAL DEVICE FOR RAILWAYS.
APPLICATION FILED AUG. 24, 1911.

1,046,597.

Patented Dec. 10, 1912.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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SIGNAL DEVICE FOR RAILWAYS.

1,046,597.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed August 24, 1911. Serial No. 645,854.

To all whom it may concern:

Be it known that we, JOHN JENNINGS and WILLIAM H. JENNINGS, citizens of the United States, residing at Greenwood, in the county of Johnson and State of Indiana, have invented certain new and useful Improvements in Signal Devices for Railways, of which the following is a specification.

This invention relates to a signal apparatus for electric railway crossings, and consists in the arrangement of parts whereby the trolley wheel sets the signal into and out of operation.

The object of the invention is to provide the intersections of electric railways and highway crossings with signal apparatuses which are set into and out of operation by means located on the top of the cars.

We accomplish the object of the invention by means of the signal apparatus shown in the accompanying drawings, forming a part hereof, in which—

Figure 1 is a top or plan view of a portion of a trolley wire showing the relation of the covers, for inclosing the mechanism for actuating the signals, with the trolley-wire. Fig. 2 is a central vertical sectional view through the covers for the mechanism, and also showing a diagrammatic view of the wires for connecting said mechanism. Fig. 3 is a cross-section, on an enlarged scale, on the line 3—3 in Fig. 2. Fig. 4 is a cross-section on the line 4—4 in Fig. 2.

Referring to the drawings, 10 represents the trolley-wire, which may be employed as the main feed-wire for supplying the electric current for operating the mechanism of the signal apparatus. Located remotely, at least one-thousand feet, on each side of a crossing 12 we provide certain mechanism whereby the circuit is closed to operate the signal at the crossing. Said mechanism is inclosed by means of a rectangular box shaped cover 13, open at one side, placed into an inverted position, so as to shelter the mechanism therein. The housings or covers 13 are held in a suspended position over the trolley-wire by means of the guy-wires 14, and suitable connection is made between the covers and the trolley-wire by the posts 15. The mechanism located within the covers 13, remotely on both sides of the crossing, consists of a pivotally mounted arm 18 which is provided with a slot 19 to allow said plate to straddle the trolley-wire 10, when hanging in normal perpendicular posi-

tion. The arm 18 is actuated by the passing trolley wheel of a car and may be moved into engagement with the core of a suitable magnet 21, whereby the electric current on the left hand side of the signal apparatus is closed. The arm 18 is brought within the signal circuit by means of a wire 25 which extends to and engages one of the terminals of the magnets of the signal bell 26, and the other terminal of the magnet is connected by means of the wire 27 with the feed wire 16. A series of incandescent lamps 28 are interposed in the line of wire 27 so that the proper resistance to the current is secured. The end of the core of the magnet 21 opposite that end contacted by the arm 18 is connected with the ground by means of a wire 30. The preceding description relates to the signal circuit on the left hand side of the crossing, and the circuit on the other side of the crossing comprises a wire 35 leading from one of the terminals of the magnets in the bell 26 to and engaging the arm 37, which is similar to the arm 18. The arm 37, similar to the arm 18, is actuated by the trolley wheel and may be moved into engagement with the core of the magnet 40 to close the circuit of the signal.

When a car is moved from left to right in Fig. 2, the arm 18 will be moved into engagement with the core of the magnet 21 which closes the signal circuit. When said signal circuit is closed the alarm 26 will be sounded and the lamps 28 lighted and so remain until the car reaches the crossing and engages a breaker, through which means the signal circuit is opened. The breaker is inclosed within a suitable housing similar to 13, and consists of a pivotally mounted arm 46, the lower end of said arm being forked to straddle the trolley-wire so that its operation by the trolley wheel is assured. The upper end of the movable arm 46 normally engages a metallic plate 50 so that the circuit is normally closed through the magnet side of the signal apparatus. The plate 50 is connected with the coil of magnet 21 by means of the wire 52, the other end of the coil of said magnet being grounded through the wire 53. The other side of the magnet circuit consists in connecting the coil of the magnet 40 with the arm 46 through the wire 57, and the magnet 40 is grounded through the wire 41. The magnet circuit connects with the feed wire 16 by means of the wire 59. As heretofore

stated, the magnet circuit stands normally closed, the magnets 21 and 40 being kept energized so that the circuit through the signal may be closed any time that the arms 18 and 37 are moved into engagement with the cores of said magnets. When the trolley wheel engages and actuates the movable arm 46, whereby the upper end of said arm is removed from the plate 50, the circuit through the magnets is momentarily opened, allowing one or both of the arms 18 and 37 to drop, by gravity, from the positions shown by means of the dotted lines in Fig. 2—showing said arms engaged with the cores of the magnets—into a perpendicular position, shown by means of the full lines in said figure. When the arms 18 and 37 are released from the cores of the magnets, the circuit through the signal is broken. The arm 46 when released from the trolley wheel immediately assumes its normal position and contacts the plate 50, whereby the circuit through the magnets is again closed.

Having thus fully described our said invention, what we desire to secure by Letters Patent, is—

The combination with a trolley wire, a pair of signal circuit closing devices mounted remotely from each other on said wire, a magnet in each of said circuit closing de-

vices, pivoted arms to be moved into contact with the cores of the magnets by the trolley wheels, wires connecting the cores of the magnets with the ground, a signal circuit wire connecting the pivoted arms together, a feed wire, a connection between said feed wire and said signal circuit wire, a signal device in said connection, a wire grounded at each end and including the windings of said magnets, a circuit breaking device comprising a centrally pivoted breaker-arm mounted in proximity to the trolley wire and adapted to be operated by a trolley wheel, and a conducting plate normally contacted by the breaker-arm, a connection from said feed wire to the breaker-arm, and a connection from said conducting plate to said wire including the magnet coils whereby the circuit through said magnets is normally closed.

In witness whereof, we have hereunto set our hands and seals at Indianapolis, Indiana, this 11th day of August, A. D. one thousand nine hundred and eleven.

JOHN JENNINGS. [L. S.]
WILLIAM H. JENNINGS. [L. S.]

Witnesses:

F. W. WOERNER,
J. A. MINTURN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."