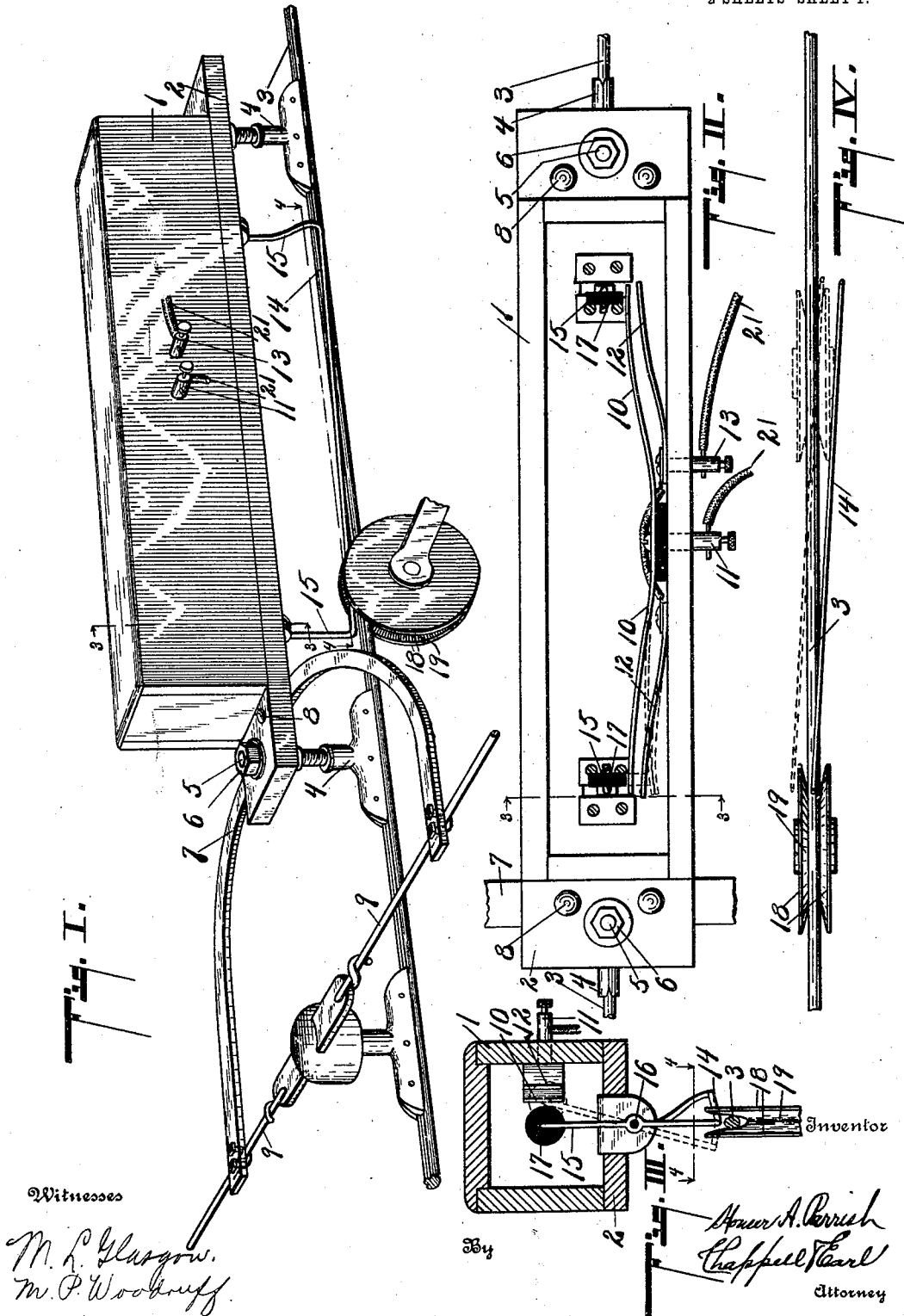


H. A. PARRISH.
ELECTRIC SIGNAL DEVICE.
APPLICATION FILED FEB. 23, 1911.

1,046,634.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

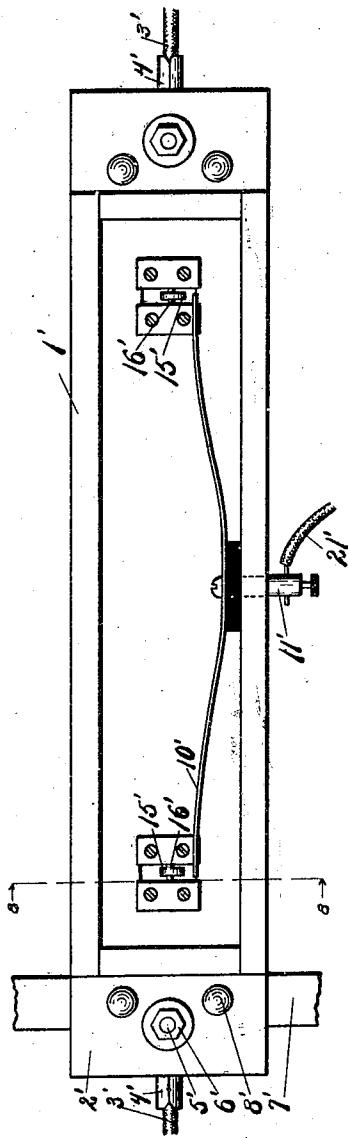


Fig. V.

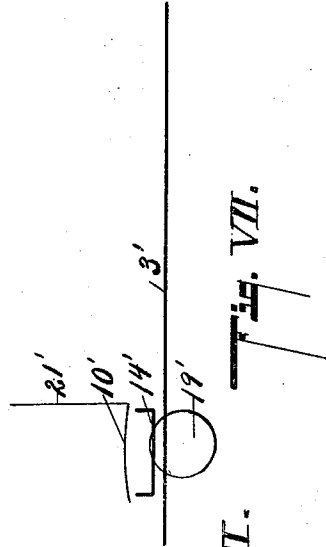


Fig. VII.

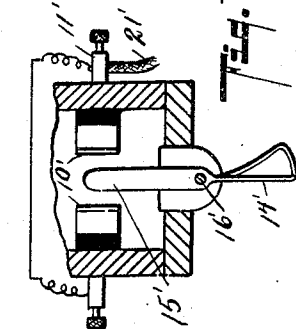


Fig. VIII.

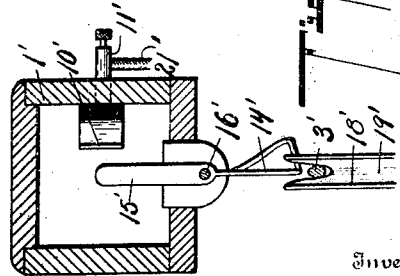


Fig. VI.

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UNITED STATES PATENT OFFICE.

HOMER A. PARRISH, OF KALAMAZOO, MICHIGAN.

ELECTRIC SIGNAL DEVICE.

1,046,634.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 23, 1911. Serial No. 810,266.

To all whom it may concern:

Be it known that I, HOMER A. PARRISH, a citizen of the United States, residing at Kalamazoo, Michigan, have invented certain new and useful improvements in Electric Signal Devices, of which the following is a specification.

This invention relates to improvements in electric signal devices, and particularly to improvements in automatic electric signal devices for trolley car roads, the same being specially well adapted to block signal work.

The objects of the invention are: First, to provide a simple and efficient automatic tripping device for a signal which can be effectively located and supported in position for automatic actuation by the trolley wheel of an electric car. Second, to provide an improved construction of automatic signal device in which jar or shock from actuation by the trolley wheel or other moving part is avoided. Third, to provide an improved buffer means whereby injurious vibration such as may cause accidental contacts is avoided. Fourth, to provide improved contact means for an automatic signal device of the class described.

Further objects and objects relating to details of construction will readily appear from the description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure embodying the features in preferred form of my invention, with certain modifications, is fully illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is a perspective view of my improved automatic signal mechanism in position to be acted upon by a passing trolley wheel. Fig. II is a detail plan view of the structure appearing in Fig. I, the cover of the casing being removed to expose the interior working parts. Fig. III is a detail transverse vertical sectional view taken on a line corresponding to line 3—3 of Figs. I and II. Fig. IV is a detail sectional plan view, corresponding to the plan view appearing in Fig. II, of a simplified modified structure in which some features are eliminated. Fig. VI is a detail transverse sectional view taken on a line corresponding to

line 8—8 of Fig. V. Fig. VII is a detail diagrammatic view showing the relation of the trolley wheel to the automatic trip and the circuit closing device, of the modification illustrated in Figs. V and VI. Fig. VIII is a detail diagrammatic view showing the trip disposed and arranged to close in circuit when the trolley wheel passes in either direction.

In the drawings, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines and similar numerals of reference refer to similar parts throughout the several views.

Considering the numerals of reference, the casing 1 is supported on a suitable platform 2, which is carried by brackets 4—4 which rest upon and are secured to the upper side of the trolley wire sleeve. The platform 2, usually of wood, is secured to these parts by bolt 5 and nut 6, the wood serving as insulation. A brace 7 is secured by bolt 8 to the platform 2 and extends laterally each side from the platform 2 and is secured to a cross guy wire 9, as clearly appears in Fig. I, where these various parts enumerated are shown in position. The structure is thus insulated from the trolley wire by the wood platform. The supports for the trolley cross wire do not appear, as they are not deemed necessary to be illustrated, as my invention does not involve such structure. The wire is substantially supported.

Within the casing 1 is secured a spring switch 10, which is connected by binding posts 11 into relay or signal circuit 21. A contact spring 12 is secured to the side of the casing and provided with binding posts 13, which also connect into the circuit 21.

A trip device consists of a horizontal bar 14 supported by hanger-like levers 15—15, which are pivoted or fulcrumed on ears 16 and swing into proximity to the upper side of the trolley wire 3, so that the groove 19 of the trolley wheel 18 in passing will engage the same and oscillate the same from side to side, owing to the fact that it is disposed obliquely to the line of travel. The bar is thus provided with pivotal end supports which insures ease of operation by avoiding strains. The hanger levers 15 are extended upwardly into arms and are provided with insulator balls or heads 17 which contact with the spring switches 10 and close the circuit by compressing the switches 10 against the contact switches or springs 12.

It will thus be seen that when the trolley wheel passes in one direction, it will embrace the trip bar 14 and pass gradually along the incline thereof and swing the same to one side and close the circuit,—see dotted lines on Fig. IV. When the trolley wheel passes in the opposite direction, the side of the wheel strikes the side of the bar, as indicated by the wheel in dotted lines and the bar in full lines in Fig. IV, and swings the bar in the opposite direction and passes the trip without effect, except in the structure of Fig. VIII. In the structure of Fig. VIII, the circuit is closed when the car passes in either direction. In one direction the groove engages, in the opposite direction the side of the wheel, and one switch or the other is operated to close the circuit.

In Figs. V, VI, VII and VIII, respectively, I show modifications, the structure appearing in Fig. VIII being a double acting structure. In these structures an oblique bar 14' is shown, which is pivoted at 16' by the lever hangers 15', which are not insulated. The bar 14' contacts with the trolley wheel and receives its current from that point, and as soon as the arm 15' contacts with the spring 10' the current passes and closes the circuit. The details for the wiring of this appear in Fig. VII where the main wire is lettered 3', the trolley wheel 19', the oblique switch bar 14', the spring 10', and the circuit 21'. It is clear that the trolley wheel in passing might operate this device when approaching from either direction, and in Fig. VIII I show the structure so arranged that the car in passing will close the circuit, no matter in which direction the trolley is moving. This of course can be the structure that is placed at a crossing to clear the signal when the train or car passes that point.

The structure in which the trolley wheel supplies the current and closes the circuit is detailed in Fig. V, the spring switch 10' only being shown, which spring is connected by suitable binding posts 11' to the circuit 21'. I have provided contacts at both ends of the swinging trip device, but such contacts would be quite effective if located at only one end of the device, but I find it is much better balanced and much more effective with the contact devices at both ends.

I have shown trolley wheels as the operating means and my structure thus specially adapted. The structure is capable of operation by any passing object and I desire to claim it broadly as well as in its special relation.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an automatic trip device for signals, the combination of a trolley wire and cross wires, a platform 2, brackets 4—4 for sup-

porting the same upon the trolley wire, a supporting brace 7 secured to the said platform and adapted to connect with the cross wires, a horizontal bar above and oblique to the trolley wire, lever hanger arms 15 for suspending the said oblique bar, with one end directly above the trolley wire, so that it will swing in proximity to the upper side of the said trolley wire and above and out of contact with the same, adapted to be embraced and acted upon by a grooved trolley wheel, spring switches 10 and spring contacts 12 separated therefrom and adapted to be connected into signal circuits, said switches and contacts disposed on said platform in position to be actuated by said lever hanger arms, and a suitable housing for the said switch means, coacting substantially as described and for the purpose specified.

2. In an automatic trip device for signals, the combination of a trolley wire and cross wires, a platform 2, brackets 4—4 for supporting the same upon the trolley wire, a supporting brace 7 secured to the said platform and adapted to connect with the cross wires, a horizontal bar above and oblique to the trolley wire, lever hanger arms 15 for suspending the said oblique bar so that it will swing in close proximity to the upper side of the said trolley wire and above and out of contact with the same, spring switches 10 and spring contacts 12 separated therefrom and adapted to be connected into signal circuits, said switches and contacts disposed on said platform in position to be actuated by said lever hanger arms, and a suitable housing for the said switch means, coacting substantially as described and for the purpose specified.

3. In an automatic switch device for signals, the combination of a trolley wire, a platform supported above the trolley wire and insulated therefrom, a horizontal trip bar above and oblique to the trolley wire, lever hanger arms suspending the said oblique trip bar, with one end directly above the trolley wire, so that it will swing in proximity to the said trolley wire, and above and out of contact with the same, adapted to be embraced and acted upon by a grooved trolley wheel, spring switch means carried by the said platform disposed to be operated by the hanger arms, and a suitable housing for the same, coacting as specified.

4. In an automatic switch device for signals, the combination of a trolley wire, a platform supported above the trolley wire and insulated therefrom, a horizontal trip bar above and oblique to the trolley wire, lever hanger arms for suspending the said oblique trip bar so that it will swing in proximity to the said trolley wire, and above and out of contact with the same, spring switch means carried by the said platform

disposed to be operated by the hanger arms, and a suitable housing for the same, coacting as specified.

5. In an automatic switch device for signals, the combination of a trolley wire, a suitable support, a horizontal trip bar in proximity and oblique to the trolley wire, lever hangers therefor, switch means operated by the said trip bar and its connections, the said trip bar being disposed with one end directly above the trolley wire, to be embraced and acted upon by the groove of the trolley wheel, coacting as specified.

6. In an automatic switch device for signals, the combination of a trolley wire, a suitable support, a horizontal trip bar in proximity and oblique to the trolley wire, lever hangers therefor, switch means operated by the said trip bar and its connections, the said trip bar being disposed to be embraced and acted upon by the groove of the trolley wheel, coacting as specified.

7. In an automatic switch device, the combination of a trolley wire, a suitable support, a horizontal trip bar with end hanger arms pivoted to the said support, the bar being above and out of contact and oblique to the trolley wire, with one end directly above the trolley wire and adapted to be embraced and acted upon by a grooved trolley wheel, a switch means, and connections from said hanger arms to said switch means, as specified.

8. In an automatic switch device, the combination of a trolley wire, a suitable

support, a horizontal trip bar with end hanger arms pivoted to the said support, the bar being above and out of contact and oblique to the trolley wire and adapted to be embraced and acted upon by the grooved trolley wheel, a switch means, and connections from said hanger arms to said switch means, as specified.

9. In an automatic switch device, the combination of a trolley wire, a suitable support, a horizontal trip bar with end hanger arms pivoted to the said support, the bar being disposed above and out of contact and oblique to the trolley wire and adapted to be embraced and acted upon by the grooved trolley wheel, a spring switch acted upon by said trip bar and connections and a blade spring contact for said switch, coacting as specified.

10. In an automatic switch device, the combination of a trolley wire, a suitable support, a horizontal trip bar with end hanger arms suspended from said support, said bar being out of contact with and in proximity and oblique to the trolley wire, and adapted to be acted upon by the trolley wheel, a switch means, and connections from said hanger arms to said switch, as specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HOMER A. PARRISH. [L. s.]

Witnesses:

MARGARET GLASGOW,

LUELLA G. GREENFIELD.