

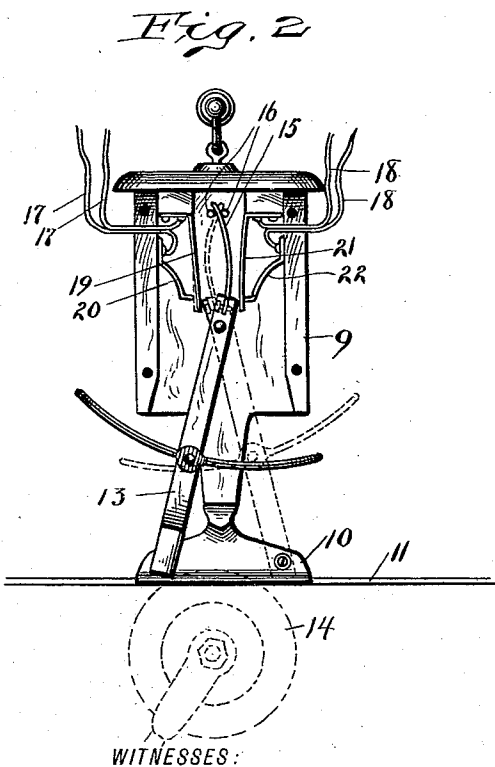
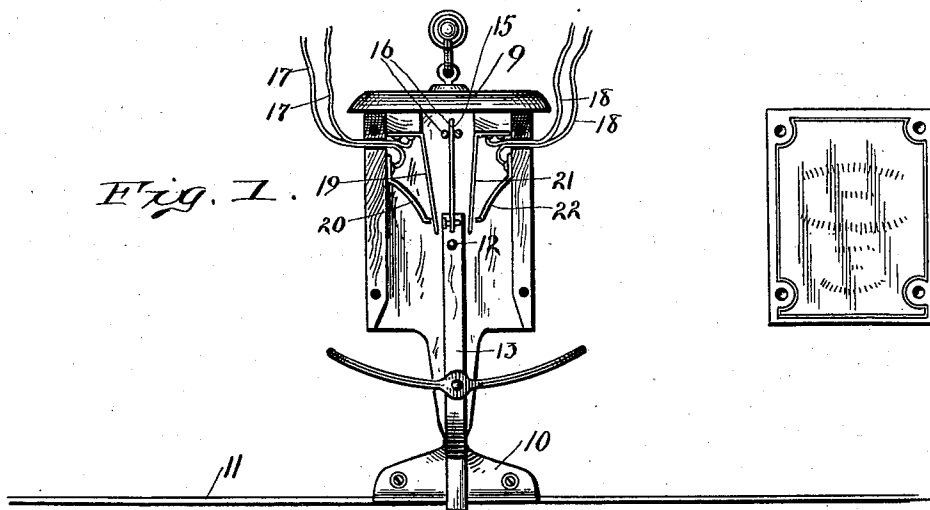
(No Model.)

3 Sheets—Sheet 1

W. A. HECKARD & D. OGDEN.
CAR ANNOUNCER.

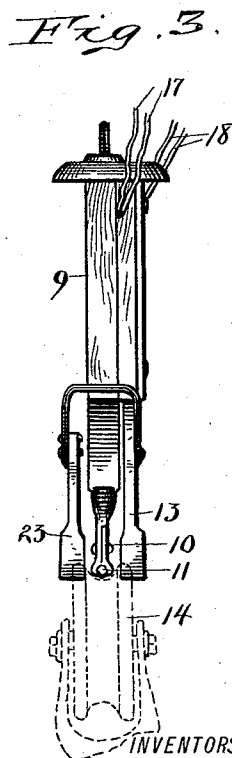
No. 578,402.

Patented Mar. 9, 1897.



WITNESSES:

J. B. Neely.
Manda Munn



INVENTORS

William A. Heckard
Dora Ogden

BY

H. P. Hood & Son

ATTORNEYS

(No Model.)

3 Sheets—Sheet 2.

W. A. HECKARD & D. OGDEN.
CAR ANNOUNCER.

No. 578,402.

Patented Mar. 9, 1897.

Fig. 4.

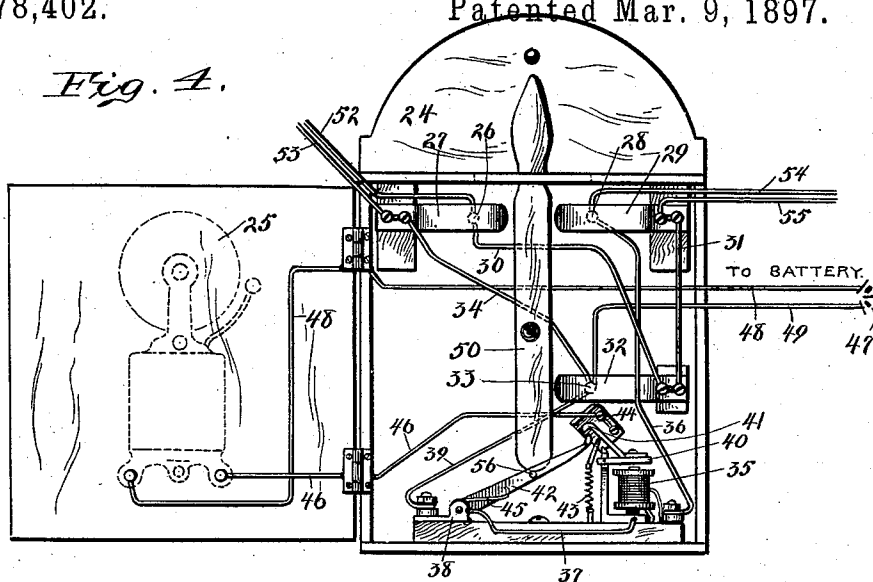


Fig. 5.

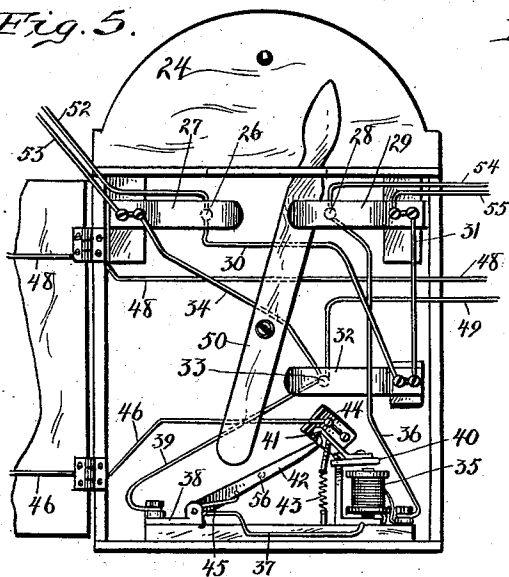


Fig. 6.

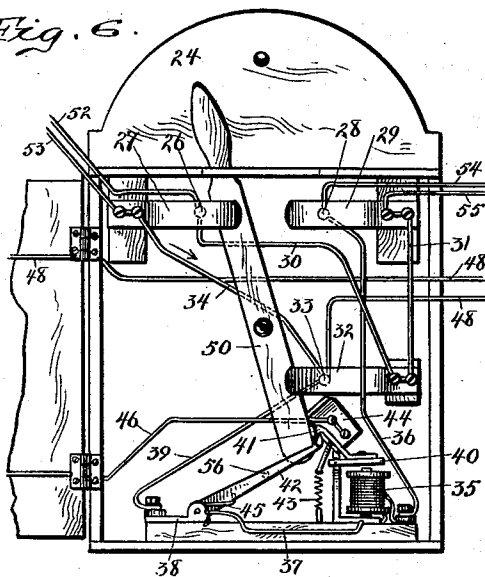


Fig. 8.



WITNESSES:

J. B. Neely
Maudie Monnell

INVENTORS:

William A. Heckard
Dora Ogden

BY

H. P. Goodwin

ATTORNEYS

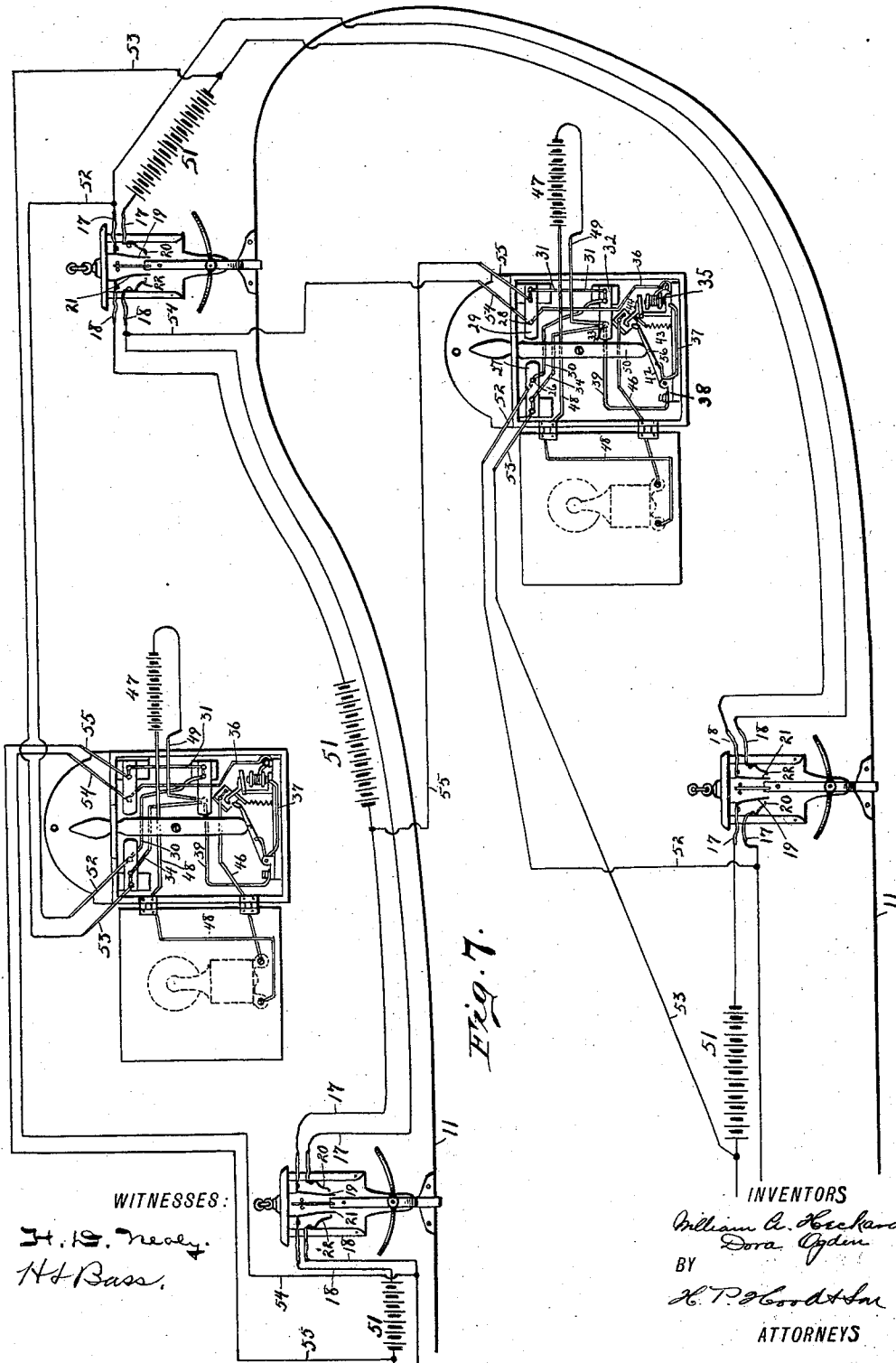
(No Model.)

3 Sheets—Sheet 3.

W. A. HECKARD & D. OGDEN.
CAR ANNOUNCER.

No. 578,402.

Patented Mar. 9, 1897.



UNITED STATES PATENT OFFICE.

WILLIAM A. HECKARD AND DORA OGDEN, OF COLUMBUS, INDIANA.

CAR-ANNOUNCER.

SPECIFICATION forming part of Letters Patent No. 578,402, dated March 9, 1897.

Application filed May 14, 1896. Serial No. 591,500. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. HECKARD and DORA OGDEN, citizens of the United States, residing at Columbus, in the county of Bartholomew and State of Indiana, have invented a new and useful Car-Announcer, of which the following is a specification.

Our invention relates to an improved device for announcing the approach of a car or train.

The object of our invention is to provide a means particularly adapted for use by suburban residents, whereby they may be notified of the approach, in either direction, of a car or train which they may desire to take. The said device is preferably operated by the passing of the trolley of an electric railroad, and the drawings illustrate the application of our invention to such a road.

The accompanying drawings illustrate our invention.

Figure 1 is a side elevation of the means operated by the trolley for throwing the bell-circuit into operation. Fig. 2 is a similar view with the trolley shown in operating position. Fig. 3 is an end elevation thereof. Fig. 4 is a front elevation of the bell-box which is placed in each house. Fig. 5 is a similar view with the parts arranged to give notice of the approach of a "down" car. Fig. 6 is a similar view with the parts arranged to give notice of the approach of an "up" car. Fig. 7 is a diagrammatic view showing the arrangement of the various circuits, and Fig. 8 is a cross-section of the bell-box.

In the drawings, 9 indicates a box provided at its upper end with means for suspending it from a pole or wire, and provided at its lower end with a hanger 10, adapted to be secured to and to support the usual trolley-wire 11. Pivoted at 12 in box 9 is a lever 13, the lower end of which is adapted to be engaged by the trolley 14 as it passes along wire 11. To the upper end of lever 13 is secured a flat spring 15, the upper end of which is engaged by a pair of pins 16, the arrangement being such that the lever when rocked upon its pivot will be brought back to its normal central position by said spring. Entering into the box, one pair at each side, are two pairs of wires 17 17 and 18 18, wires 17 being connected to terminals 19 and 20 and wires 18 being con-

nected to terminals 21 and 22. Terminals 19 and 21 are brought close to the upper end of lever 13, one at each side thereof, and terminals 20 and 22 are so arranged that when lever 13 is swung upon its pivot the upper end thereof will engage either terminal 19 or 21 and will force the said terminal into engagement with the corresponding terminal 20 or 22, but when the said lever is in its central position terminals 19 and 20 and terminals 21 and 22 will be out of engagement with each other.

For the purpose of insuring against the possibility of the trolley missing the lower end of lever 13 we secure to said lever an arm 23, which lies substantially parallel thereto, the arrangement being such that arm 23 and lever 13 lie upon opposite sides of the trolley-wire.

Mounted in each house is a bell-box 24, provided with any well-known form of electric bell 25. Mounted in bell-box 24 is a terminal 26 and a spring-terminal 27, the outer portion of said spring resting, normally, upon the top of terminal 26. Mounted also in the bell-box is a terminal 28 and a spring-terminal 29, the outer end of which rests, normally, upon the top of terminal 28. Leading from terminals 26 and 29, respectively, are conductors 30 and 31, each of which is connected with a spring-terminal 32, the outer end of which rests, normally, upon the upper end of a terminal 33. Mounted in the bell-box is an electromagnet 35, one end of the coil of which is connected by conductor 36 with terminal 28, and the other end of said coil is connected with terminal 33 by means of conductor 37, plate 38, and conductor 39. Pivoted above the end of magnet 35 is an armature 40, which carries a dog 41, the end of which is adapted to engage with and to hold the outer end of a lever 42, the said dog being held in position to engage with said lever by means of a spring 43. Lever 42 is pivoted to plate 38, and the said lever when released by dog 41 is thrown into engagement with terminal 44 by means of a spring 45. Terminal 44 is connected with one terminal of bell 25 by means of conductor 46. Leading from the other terminal of the bell to a suitable battery 47 is a conductor 48, and leading from said battery to terminal 33 is a conductor 49.

Pivoted in bell-box 24 is a lever 50, the upper end of which is adapted to engage alternately with spring-terminals 27 and 29 and to lift the said terminals off from terminals 26 and 28, respectively, and the lower end thereof is adapted to engage with spring-terminal 32 and lift the said terminal from terminal 33, the arrangement being such that when terminal 27 is lifted from terminal 26 terminal 32 will also be lifted from terminal 33.

When arranged for operation, boxes 9 are placed along the line of the road at convenient intervals, generally about one-quarter of a mile, wires 17 of one box connecting with wires 18 of another box, and a suitable battery 51 being placed in connection with said wires and between each two boxes. Connected with terminals 26 and 27, respectively, are two conductors 52 and 53, which are connected with wires 17 of one of the boxes, and conductors 53 and 54 connecting terminals 28 and 29 with wires 18 of another box, it being understood, of course, that a battery 51 is included in each of the circuits, as shown in Fig. 7. The lower end of lever 50 is rounded, and said rounded end is adapted, when the lever is in its middle position, to engage with a pin 56, carried by lever 42, thereby preventing said lever 42 from coming into engagement with terminal 44.

The operation of our device is as follows: Supposing lever 50 to be in the position shown in Fig. 5, the upper portion of said lever is in engagement with spring-terminal 29 and has lifted said terminal from terminal 28. The trolley as it passes down the line comes into engagement with the lower end of lever 13 and swings said lever upon its pivot, thereby bringing the upper end thereof into engagement with terminal 21 and forcing said terminal into engagement with terminal 22, thereby completing a circuit through the following parts: beginning with battery 51, through one of wires 18, terminal 21, terminal 22, the other wire 18, conductor 54, terminal 28, conductor 36, the coil of magnet 35, conductor 37, plate 38, conductor 39, terminal 33, spring-terminal 32, conductor 31, and wire 55 back to the battery. By the completion of this circuit magnet 35 is energized, so that armature 40 is drawn downward thereby, thus pulling dog 41 from engagement with the end of lever 42 and thereby allowing said lever to be thrown upward by spring 45 into engagement with terminal 44. When said engagement occurs, a circuit is completed from battery 47, through conductor 49, terminal 33, conductor 39, plate 38, lever 42, terminal 44, conductor 46, bell 25, and conductor 48 back to the battery, thus causing the said bell to sound. As the trolley passes lever 13 the said lever is thrown back into its normal position by means of spring 15, thus breaking the contact between terminals 21 and 22, and when this is done magnet 35 ceases to attract armature 40, and said armature and the dog 41 are drawn back into position by means of

spring 43. To stop bell 25, lever 50 is moved to its middle position, the lower end of said lever coming into contact with pin 56 and thereby throwing the outer end of lever 42 down away from terminal 44 and into engagement with dog 41. The trolley as it passes along the line in either direction will swing lever 13, and as the said trolley passes up the line the said lever will be thrown into the position indicated by dotted lines in Fig. 2 and terminals 19 and 20 will be brought into engagement with each other thereby. Said engagement of terminals 19 and 20 completes a circuit through one of wires 17, the battery 51, conductor 53, spring-terminal 27, terminal 26, conductor 52, and the other wire 17, the current failing to pass through the coil of the magnet 35. If, however, lever 50 is thrown into the position shown in Fig. 6, spring-terminals 27 and 32 are lifted, respectively, from terminals 26 and 33, and then when the trolley passes up the line and terminals 19 and 20 are brought into engagement a circuit is completed from battery 51, through conductor 53, conductor 34, terminal 33, conductor 39, plate 38, conductor 37, the coil of magnet 35, conductor 36, terminal 28, spring-terminal 29, conductor 31, conductor 30, terminal 26, conductor 52, one of wires 17, terminals 19 and 20, and the other wire 17, back to the battery. The completion of said circuit causes dog 41 to be withdrawn from the end of lever 42, said lever is thrown into engagement with terminal 44, and bell 25 is sounded, as previously described.

When lever 50 is placed in its middle position, (shown in Fig. 4,) the movement of the trolley along wire 11 in either direction causes magnet 35 to be energized and dog 41 to be drawn away from engagement with lever 42, but said lever is prevented from engaging with terminal 44, and thereby ringing bell 25, by means of pin 56, which is engaged by the lower end of lever 50.

We claim as our invention—

1. The combination with a pair of open circuits each containing a pair of terminals an electromagnet connected with each of said circuits, a lever pivoted near said terminals and adapted, when swung upon its pivot by the movement of a car, to bring one pair or the other of said terminals into engagement with each other and thereby energize said magnet, means for returning said lever to its normal position, an armature pivoted near said magnet and provided with a dog, the said armature being adapted to be operated upon by said magnet, an open circuit containing an electric signal, a pivoted arm adapted to close said circuit by engagement with a suitable terminal, said arm being adapted to be engaged by said dog and thereby held out of engagement with said terminal, and means for throwing said lever into engagement with said dog, substantially as set forth.

2. In an apparatus of the class described, the combination with a pair of open circuits,

of an electromagnet common to both of said circuits, means for closing either of said circuits and thereby energizing said magnet, an open signal-circuit, a pivoted lever controlled
5 by said magnet and adapted, when released, to close said signal-circuit, a lever adapted to cut out said magnet from either of said first-mentioned circuits, and also adapted to engage the signal-circuit-closing lever and to
10 thereby maintain an open signal-circuit when the magnet is in connection with both of said first-mentioned circuits.

3. In an apparatus of the class described, the combination with a pair of open circuits,
15 an electromagnet common to both of said circuits, means for closing either of said circuits and thereby energizing said magnet, an open signal-circuit, an armature carrying a dog and adapted to be operated by said magnet,
20 a pivoted lever adapted to be engaged by said dog and adapted, when released by said dog, to close said signal-circuit, a pivoted lever adapted to cut out said magnet from either

of said first-mentioned circuits, and also arranged to engage said signal-circuit-closing
25 lever and to thereby maintain an open signal-circuit when the magnet is in connection with both of said first-mentioned circuits.

4. In an apparatus of the class described, the combination of wires 17, 17, and 18, 18,
30 terminals 19, 20, 21, 22, lever 13, conductors 52, 53, 54 and 55, terminals 26, 27, 28, and 29, conductor 31, terminals 32 and 33, conductors 30 and 34, conductor 36, magnet 35, armature 40, dog 41, conductors 37 and 39, lever 42, terminal 44, and a signal connected
35 by suitable conductors to terminal 44 and lever 42, all combined and arranged to cooperate substantially as and for the purpose set forth.

WILLIAM A. HECKARD.
DORA OGDEN.

Witnesses:

Z. T. FUNKHOUSE,
G. G. DOLL.