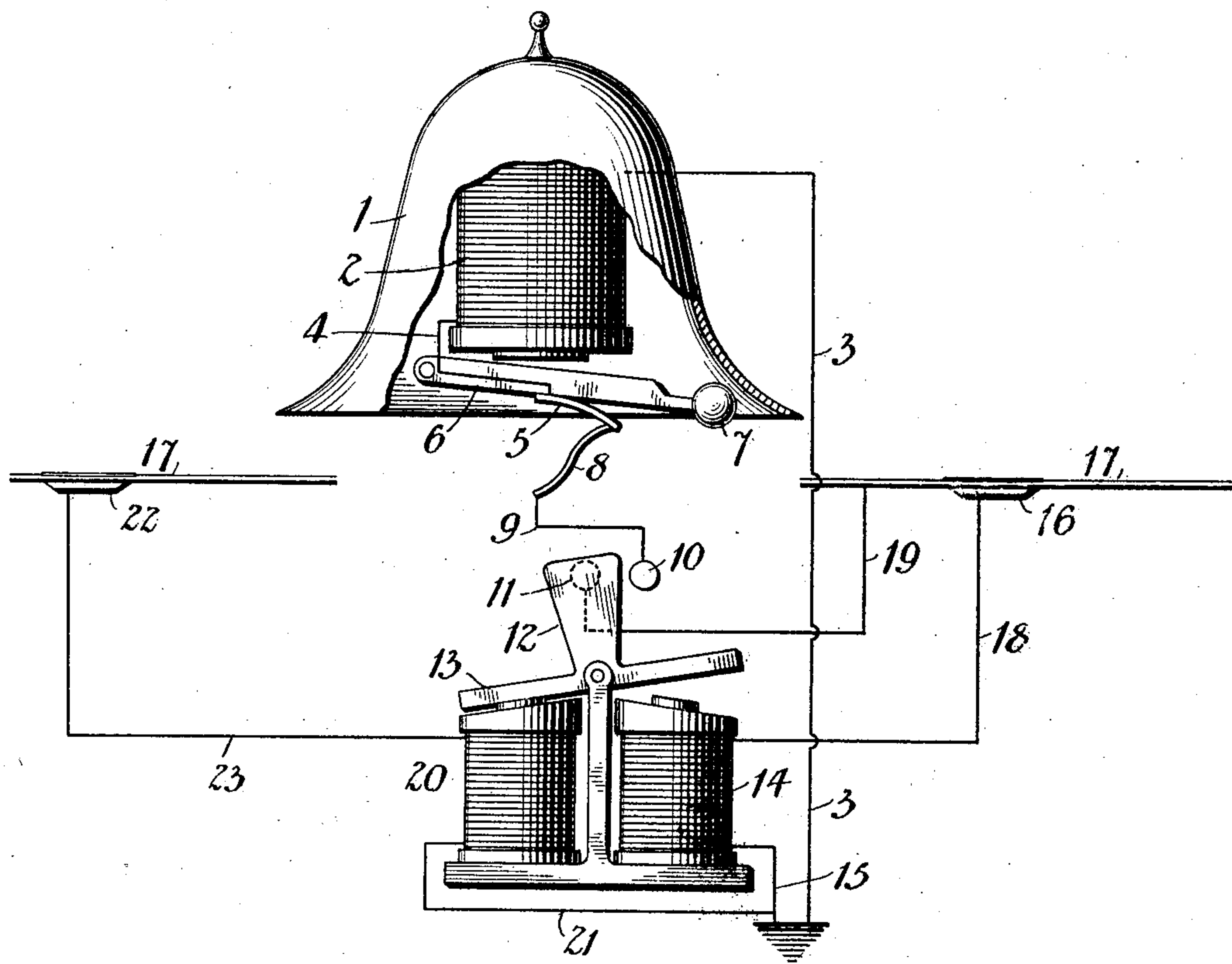


No. 765,266.

PATENTED JULY 19, 1904.

W. J. BELL.  
AUDIBLE SIGNALING DEVICE.  
APPLICATION FILED JAN. 5, 1904.

NO MODEL.



Inventor

Walter J. Bell

Witnesses

*W. J. Bell*  
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By

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# UNITED STATES PATENT OFFICE.

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## AUDIBLE SIGNALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 765,266, dated July 19, 1904.

Application filed January 5, 1904. Serial No. 187,792. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER JOEL BELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Audible Signaling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to electric railway appliances, and contemplates an improved audible signaling device which is capable of utilization wherever signals of the audible or sounding type are required, but which is especially designed for employment in connection with a railway barrier or gate, such as that forming the subject-matter of an application for patent filed by me July 31, 1903, and numbered serially 167,728, the purpose of the device in this connection being to signal in advance of the closing of the gate a timely warning of the approach of a car or train. It is to be understood, however, that while I have specially designed the improved audible signaling device for use in connection with railway-gates such utilization is not to be regarded as a limitation, inasmuch as the device may be employed equally efficiently in connection with railway appliances other than gates—such, for example, as semaphores and other display-signals or the like. Further, it is to be understood that the specific construction of audible signaling device shown and herein described in detail may be variously modified without departing from the scope of the concluding claims.

The accompanying drawing, to which reference is made in the following detailed description, represents in elevation, partly in section, an audible signal device embodying my invention.

Referring to the drawing by numerals, 1 designates the audible signaling device proper, which is preferably in the nature of a bell, as distinguished from a gong, whereby certain of the parts which are located within it are protected from the elements. The bell is preferably

fixed to a post or other suitable upright (not shown) and to which is also fixed a casing for the other parts of the structure.

2 is the bell-operating magnet, from which lead a ground-wire 3 and a wire 4, the latter being connected with a contact 5, carried by an armature 6, pivoted at one end and provided at its other or free end with a hammer 7. The armature, which is elevated by the magnet 2 when the latter is energized, normally assumes the depressed position shown, and in said position the contact 5 is in engagement with a contact 8, connected by a wire 9 with a contact 10. Adjacent to the contact 10 is a similar contact 11, normally engaged by a contact-arm 12, carried by a rock-armature 13. The armature 13 is pivoted centrally, and the arm 12 extends upwardly from the pivotal point and is weighted, whereby to maintain the rocked positions of the armature and arm.

At the armature 13 are two electromagnets, one of which, 14, is grounded by a wire 15 and is connected with an insulated section 16 of the trolley-wire 17 by a wire 18. The contact 11 is connected with the trolley-wire by a constantly-charged wire 19. The other magnet, 20, is connected to ground through a wire 21 and the wire 15 and is connected with an insulated section 22 of the trolley-wire 17 by a wire 23. It will be understood that the insulated sections 16 and 22 are constructed to close circuits therethrough when engaged by the trolley-wheel of the car or train.

In operation when the trolley-wheel engages the section 16 current flows through the magnet 14 by reason of its ground connection, and the armature 13 is rocked to cause the contact-arm 12, carried thereby, to bridge the contacts 11 and 10, whereupon current flows from the trolley-wire through the wire 19, contacts 11, 12, and 10, wire 9, contacts 8 and 5, the coils of magnet 2, and thence by the wire 3 to ground. The magnet 2 being thus energized, the armature is vibrated, and the bell is sounded by the hammer 7. The current through the magnet 14 is of but relative short duration; but the energization of said magnet even for so short a



period of time is sufficient to effect the rocking of the armature 13 to close the bell-operating circuit, the rocked position of said armature being maintained by the weighted contact-arm 12, as before stated.

It is my purpose to effect the operation of the audible signal in advance of the movement of the gate or semaphore, as the case may be, and the section 16 is consequently located well in advance of the gate or semaphore operating means. To break or open the bell-circuit, I provide the insulated section 22, magnet 20, and connections, the section being located to be engaged by the trolley-wheel after the car or train has passed the crossing or other point. Engagement of the trolley-wheel with said section 22 effects the energization of the magnet 20 through the wires 23, 21, and 15, the result being the retraction of the armature 13 and the interruption of the bell-circuit, and consequently the cessation of the audible signal.

It will be understood that the starting, operating, and breaking circuits are established through the successive engagements by the trolley-wheel with the sections 16 and 22 and that this will occur whether the car or train controlling current is on or off.

I claim as my invention—

1. An audible signal consisting of a bell, electric means including a magnet for operat-

ing said bell, a rock-armature having a contact-arm movable to bridge two contacts one of which is connected with a constantly-charged wire and the other with the bell-operating means, a magnet at the armature for moving the latter to effect the closing of the bell-operating circuit, a second magnet at said armature for retracting the latter to break said circuit, and a means for maintaining the armature in its rocked positions.

2. An electric audible signal consisting of a bell, a magnet, an armature at said magnet provided with a sounder, a rock-armature having a weighted counterbalancing contact-arm movable to bridge two contacts one of which is connected with the trolley-wire and the other with make-and-break contacts at said armature, a magnet at the rock-armature connected with an insulated trolley-wire section and adapted to rock said armature to close the bell-operating circuit, and a second magnet at said rock-armature connected with a second insulated trolley-wire section and adapted to retract said rock-armature to interrupt the operating-circuit.

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

WALTER JOEL BELL.

Witnesses:

C. M. HENDERSON,  
E. A. WATERMAN.