

No. 791,228.

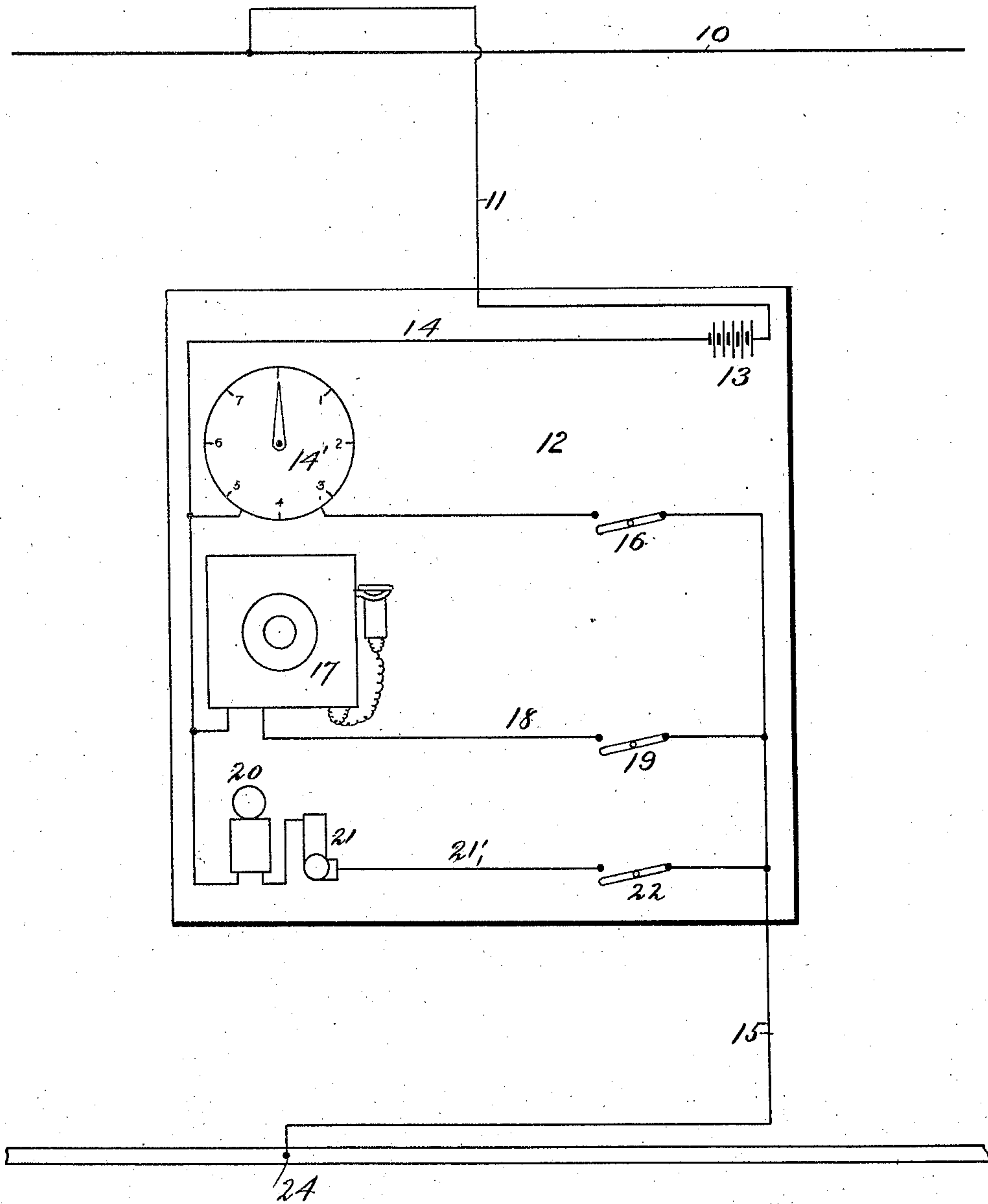
PATENTED MAY 30, 1905.

E. L. & J. W. TATUM.  
ELECTRIC RAILWAY SIGNAL OR ALARM.

APPLICATION FILED SEPT. 2, 1904.

2 SHEETS—SHEET 1.

*Fig. 1*



Witnesses:

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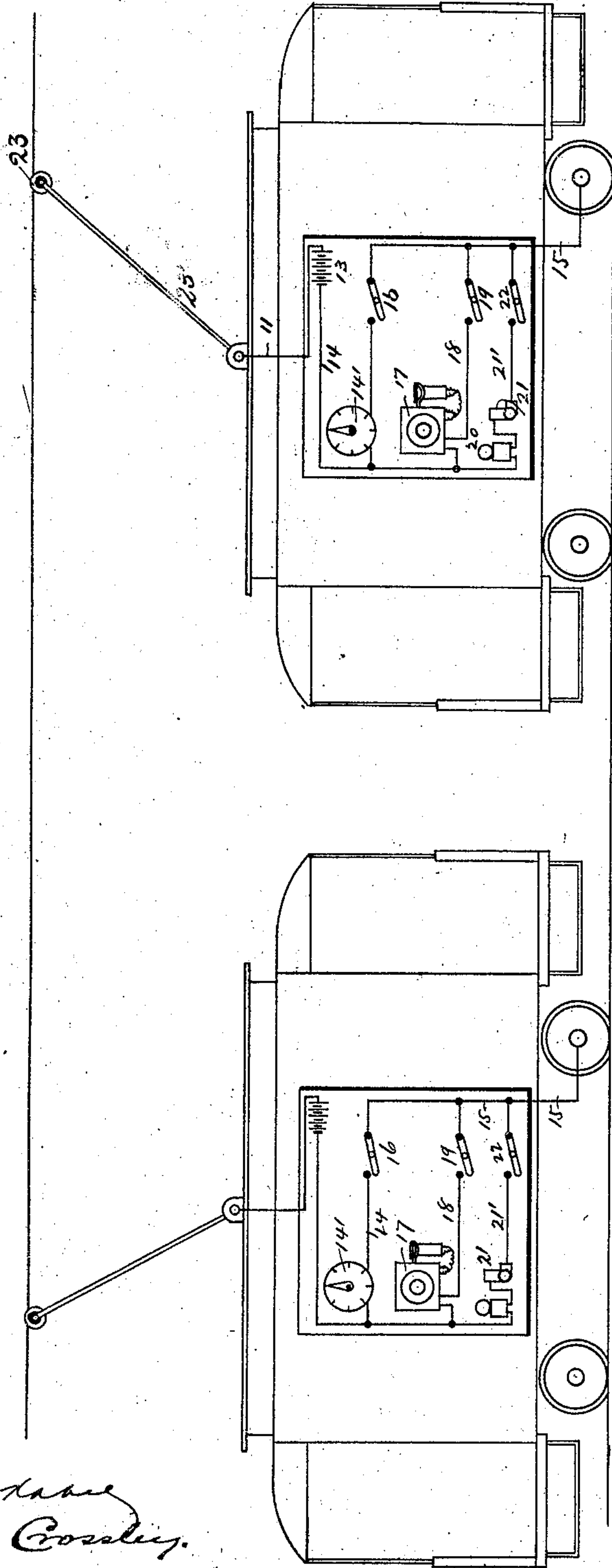
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2 SHEETS—SHEET 2.

Fig. 2.



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# UNITED STATES PATENT OFFICE.

EARL L. TATUM, OF WASHINGTON, DISTRICT OF COLUMBIA, AND  
JAMES W. TATUM, OF DURHAM, NORTH CAROLINA, ASSIGNORS  
OF ONE-HALF TO ROBERT B. BOONE AND JOHN W. SMITH, OF  
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## ELECTRIC RAILWAY SIGNAL OR ALARM.

SPECIFICATION forming part of Letters Patent No. 791,228, dated May 30, 1905.

Application filed September 2, 1904. Serial No. 223,154.

*To all whom it may concern:*

Be it known that we, EARL L. TATUM, residing at Washington, District of Columbia, and JAMES W. TATUM, residing at Durham, in the county of Durham and State of North Carolina, have invented new and useful Improvements in Electrical Railway Signals or Alarms; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part thereof.

This invention has relation to electrical indicators for train or car service generally; but in its present design it is particularly adapted for use on trains or cars and in stations to indicate location of cars or trains and difficulties encountered and to afford means of communication between trains and stations, as well as between moving and stationary trains.

The invention consists in novel arrangements and combinations of devices whereby a simple and useful indicator of the character mentioned is provided, all as will fully appear from the detailed description hereinafter given, reference being had to the annexed drawings, and to the symbols of reference marked thereon, forming a part of this specification, the same symbols of reference indicating the same parts or features, as the case may be, wherever they occur.

In the said drawings, Figure 1 is an enlarged view of an indicating-board equipped with the various devices or showing their arrangement relatively to each other and to the entire plan of the invention. Fig. 2 is a diagram showing two cars of a line or system as provided with the indicating-board and its equipments and illustrating its mode of use.

In the drawings, 10 may designate the main trolley-wire, which in this case is made the conveyer of the main current from the batteries.

11 is the main line or wire which taps to the indicating-board 12 and its equipments in stations. The line 11 connects with the battery 13, and the instruments on the indicating-

board 12 connect, through the line 14, with the said battery 13.

It will be understood that the drawings are to a large extent merely diagrammatic by reason of necessity. It should be stated, therefore, at the outset that our invention is not intended for use in connection with electric cars, but rather with steam-engines, and the wire that the trolley-pole is connected with by wheel is nothing more than a telegraph-wire, and all the power that will be on the said wire will be furnished from the dry batteries on the engine in the cab. The power that they will have will be by the way the said batteries are made, and they will be governed by the winding of the batteries. In other words, they will be made to furnish sufficient current for a distance of ten miles, which will be sufficient, as we now believe.

Of the said instruments on the indicating-board, 14' is an ohmmeter, indicating by a pointer on a dial the number of miles (the ohms having been reduced to miles) distant of the nearest car or train or the station, as the case may be. The said ohmmeter is connected in series with ground-wire 15 through switch 16, which switch can be used for cutting out of said instrument.

17 is a telephone which can be used for communication between two moving trains or from train to train into a station, or vice versa, as the case may be, which telephone is connected in series with ground-wire 18 through switch 19, which switch can be used for cutting out the telephone, if need be.

20 indicates the trouble or signal bell whose "winding" enables it to ring at a certain electric pressure, which can be set for any number of miles, according to the strength of the battery or size and resistance of the trolley-wire used, which bell is connected in series with signaling-key 21, which latter is used in signaling from one moving train to another or to the engine from the train, or from any point to the station, or vice versa, as the case may be, which signal-key is connected in se-



ries with ground-wire 21' 15 through switch 22, which switch can be used for cutting out of said signal-key.

The electric source of supply to the instrumentalities on the switchboard on a train may be through the trolley 23 and its pole 23' from the batteries and the other connections mentioned or their equivalents.

24 designates the point where the ground-wire 15 is connected or grounded to the rail.

It is to be noted that our invention is very simple in construction and arrangement and is capable of being employed to "look after" and "care" for the ordinary affairs of a road and its equipments and that by nothing beyond the exercise of the skill of the artisan understanding the invention it is capable of being amplified and greatly extended in the amount or scope of service that it is capable of performing.

It will be clearly understood that each station and each train or car in service of a "road" or system will be equipped with an "indicating-board"—and by that term meaning the instrumentalities thereon—so that any authorized employee may use them for the purposes for which they are designed at any time for information and help in conducting a railway system or in running a number or line of cars; as he might look to a clock on the train or at a station to ascertain the time of day.

We claim—

1. An indicating-board equipped with an ohmmeter provided with an indicator, upon which the ohms are graduated into miles, a

telephone, and a key signaling instrument, all connected in multiple with each other and in series with a battery; and each provided with a switch by which it may be cut out, substantially as herein set forth.

2. In a system for the care of railway cars or trains, an indicating-board equipped with an ohmmeter provided with an indicator upon which the ohms are graduated into or reduced to miles, a telephone, and a key signaling instrument, all connected in multiple with each other and in series with a battery, and each provided with a switch by which it may be cut out, one such board being provided for each car or train in operation in a system and one for each station, the entire number being electrically combined or connected one with another, as set forth.

3. In an electrical signaling device of the character described, an indicating-board equipped with an electrical distance-indicating instrument, and an electrical signal-transmitting instrument, said instruments being connected in multiple with each other and in series with a battery, and each provided with a switch by which it may be cut out, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EARL L. TATUM.  
JAMES W. TATUM.

Witnesses:

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