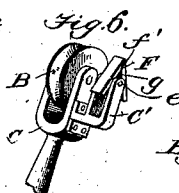
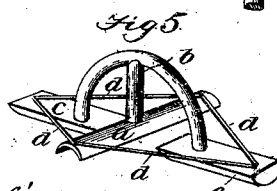
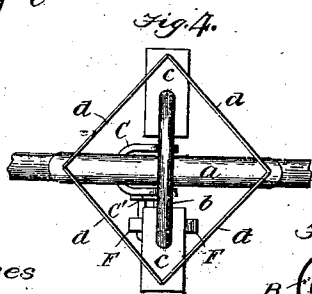
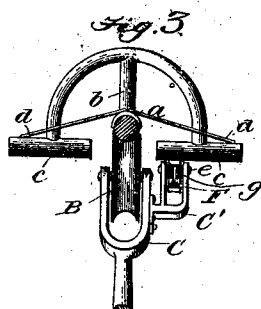
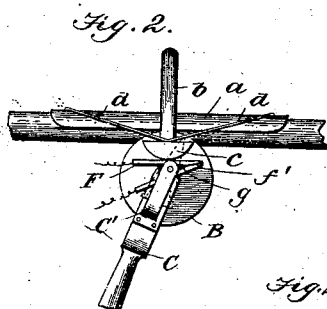
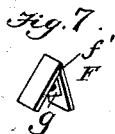
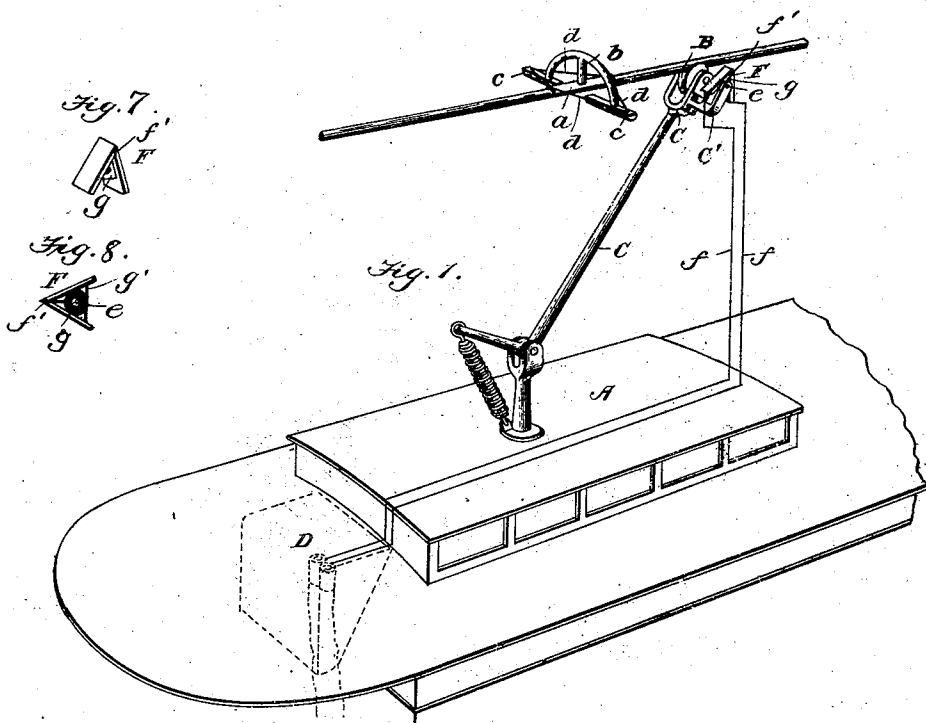


(No Model.)

R. B. AYRES.
OPERATING STREET OR STATION INDICATORS.

No. 498,607.

Patented May 30, 1893.



Witnesses
Edwin L. Bradford
Curis Hammond

Inventor
Ruben B. Ayres
By *Ymerus Entero*
Attorney

UNITED STATES PATENT OFFICE.

RUBEN B. AYRES, OF NEW YORK, N. Y.

OPERATING STREET OR STATION INDICATORS.

SPECIFICATION forming part of Letters Patent No. 498,607, dated May 30, 1893.

Application filed December 22, 1891. Serial No. 415,891. (No model.)

To all whom it may concern:

Be it known that I, RUBEN B. AYRES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Means for Operating Street or Station Indicators; 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 certain new and useful improvements in devices or means for operating street or station indicators of electric cars from the trolley or overhead wire of an electric railway system; and it consists substantially in such features of arrangement, construction and combinations of parts as will hereinafter be more particularly described and claimed.

It has been common heretofore to provide railway cars with automatic street or station indicators which are operated mechanically at regular intervals to give notice to passengers of the different streets or stations lying in the route of the car, such indicators being usually started or set in motion through the agency of mechanical appliances connecting the same with the track rail itself or with one or more of the car wheels passing over said track-rail. It has been common furthermore to provide railway cars with similar indicators which are operated or set in motion by the opening or closing of an electric circuit that is maintained by the use of an electric battery located within the car and suitable electric conductors connecting such battery with the indicator. In electric railway cars, the use of such devices as are necessary to operate the indicator in a mechanical way, when added to the connections requisite to the electric propulsion of the car renders the cost very great, besides requiring separate attention on the part of the attendant or operator. Also in electric railway cars the use of an independent battery and wire connections for operating the indicator in an electrical manner or way requires separate attention on the part of the operator besides adding much to the expense and being very liable to get out of order.

The object of this invention is to provide

for the operation of street or station indicators for electric railway cars directly from the trolley or overhead wire through the agency 55 of which the car is moved or propelled.

A further object of the invention is to dispense with the use of all devices or appliances beneath the car for operating the indicator, as well also as the use of a battery or 60 other independent source of electric power within the car.

A third and final object of the invention is to provide for the operation of street or station indicators of electric railway cars by the 65 use of the same current or electro-motive force by which the car is propelled, all as will more fully hereinafter appear when taken in connection with the accompanying drawings in which—

Figure 1 represents a view in perspective of my improved means or devices for operating street or station indicators of electric railway cars, the said figure indicating the use of a normally open electric circuit between 75 the indicator mechanism and trolley or overhead wire, as well as the preferred form of electrical contact devices which are employed to close the circuit at proper intervals or points along the line of the railway system. 80 Fig. 2 is a side elevation thereof, representing in full lines the position of the electric contact devices when in the act of closing the circuit, and in dotted lines the position assumed after the contacts have passed each 85 other. Fig. 3 is a front view of Figs. 1 and 2; and Fig. 4 is a top or plan view thereof. Fig. 5 is a detail view of the bracket. Fig. 6 is a similar view of the trolley wheel yoke and contact support; and Fig. 7 is also a 90 detail view representing the preferred form of movable or traveling electrical contact. Fig. 8 is a view in detail representing the construction and operation of the elastic cushion for restoring the contact finger after it has 95 been depressed.

As will be understood my invention is intended to cover both the use of mechanical or electrical means for operating the indicator from the trolley wire, and it will not be necessary to illustrate any particular form of indicator since it is evident that any well known form could be employed. The invention is intended more particularly however to be em- 100

played in connection with the kind of indicator described and claimed in my two former patents dated January 26, 1892, and numbered 467,678 and 467,884, respectively.

5 In the practice of my invention I prefer the use of an electric circuit between the trolley wire and indicator which serves to operate the latter on the opening or closing of said circuit, accordingly as an open or closed circuit is had.
10 As a preferred construction I provide upon the trolley or overhead wire at points corresponding to the several streets or stations (preferably mid-way of the crossings) a suitable shell which is shaped to fit said wire and
15 which supports a vertically disposed bracket having arms or branches designed at proper intervals to be brought into electrical contact with a point or finger carried by the yoke of the trolley wheel which travels the wire in the
20 usual manner. As soon as the point or finger of the wheel yoke is brought into electrical contact with one of the arms of the bracket a closed electric circuit is established with the indicator inside of the car by means of suitable
25 conductors employed between the two.

In the drawings A represents the top portion of an ordinary electric railway car having thereon the usual trolley wheel B carried by a yoke or frame C.

10 D represents any preferred style of indicating mechanism designed to be located in the car and which is supposed to be operated at intervals to display an indicator band or ribbon.

35 In the present instance the style of indicator shown is one in which the shaft for moving the indicator band or ribbon is set in motion by a spring motor (not shown) whenever released by the automatic action of the
40 contact devices, but as this invention relates entirely to the means for producing this automatic action from the trolley wire no special form of connection with the indicating mechanism itself need herein be shown or de-
45 scribed.

At points of the trolley wire corresponding with the several streets or stations I solder or otherwise secure to the upper surface of said
50 wire a suitable shell *a* shaped to fit the wire and supporting centrally thereof a vertically disposed bracket *b* having contact arms or
55 branches *c, c*, on a plane about coincident with the lower or under surface of said wire. The under side or surface of the said arms or
60 branches is preferably curved or rounded so as to permit the same to pass easily over the surface of the moving contact points herein-
after referred to. Connecting the two ends of the shell with the sides of the contact arms
65 or branches are suitable stay rods *d* for strengthening and maintaining the parts in proper relative position.

Attached or secured to one side of the trolley wheel yoke or frame C is a supplemental
70 yoke C' in which is pivoted or supported by means of a pintle *e*, a movable contact-point or finger F which moves against the under

side of the arms or branches *c, c*, and establishes an electrical connection therewith whenever the car has moved along to bring said
75 arm and finger together. The conducting wires *f, f*, being attached to the two ends of the pivoted finger and passed down through the roof of the car and attached to any suitable
80 device for releasing and starting the indicating mechanism within said car it is evident that the several streets or stations along the line will be successively brought to view
85 before the passengers. The said contact point or finger F is preferably <-shaped; and, fitting between the two members thereof on the pintle *e* is a rubber or other spring cushion *g* which serves to restore said point or finger to its original position (see full lines Fig. 2) after
90 the same has passed against the surface of the arm or branch *c* of the bracket *b*, and been made to assume the position shown by the dotted lines in Fig. 2.

The two members of the contact F are joined or intersected by a small web *g'* which, as
95 shown, is much thinner than the said members themselves; and, the spring cushion *g* being arranged on the pintle *e* in such manner as to maintain the contact normally in the position indicated in the drawings, it is evi-
100 dent that when said finger is struck or depressed the said cushion will by its own resiliency, restore the contact or finger after pressure is relieved therefrom. This restoration is due to the fact that the cushion is of such
105 thickness or diameter as not to be compressed during the stationary position of the contact, but becomes immediately compressed whenever the contact or finger is struck or turned in the manner indicated.

The two members or portions of the contact F it will be observed are insulated at *f'* so that the electric circuit will be properly es-
110 tablished, and, passing through the wires *f, f*, will be grounded, as seen in dotted lines at the electro-magnet located within the car. Two conducting wires are shown to conform to the construction of contact shown, so as to
115 establish the electric circuit. It is evident however that a single wire only could be employed with but slight change or alteration in the particular form of movable contact.

It will be understood that many changes could be resorted to in the construction and arrangement of the several parts constituting
120 the devices for operating the indicator, without departing from the scope intended; and it will also be seen with what reliability either set of said devices will perform their intended function. The form of bracket as well as its
125 appurtenances could also be considerably varied, and the style or shape of the contact F as well, could be altered to suit the different requirements incident to its use.

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

1. In means for operating station indicators of railway car systems, the combination with

the trolley wire and trolley, and an automatic indicator located within a car, of electrical contacts arranged at intervals along the wire, and a movable contact attached directly to the trolley and engaging the contacts first named for operating the signal or indicator within, substantially as described.

2. In an electric railway car system, the combination with the trolley wire and trolley, and an automatic indicator located within a car, of a stationary electrical contact supported by said wire, a corresponding movable contact mounted on the trolley, and electric conductors leading therefrom to the indicator, substantially as shown and for the purpose described.

3. In an electric railway car system, the combination with the trolley wheel and its yoke, of the supplemental yoke, and the pivoted or swinging electric contact finger held

by said supplemental yoke, and a cushion against which said finger works, substantially as shown and for the purpose described.

4. In an electric railway car system, the combination with the trolley wire and the wheel and its yoke, of the bracket supported by said wire and having the lateral electric contact arms or branches, the supplemental yoke, the pivoted contact finger for engaging said arms or branches, a spring cushion for said finger, and conducting wires leading to an indicating mechanism located within a car, substantially as described.

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

RUBEN B. AYRES.

Witnesses:

H. R. KUHNE,
W. W. SIMONS.