

No. 744,354.

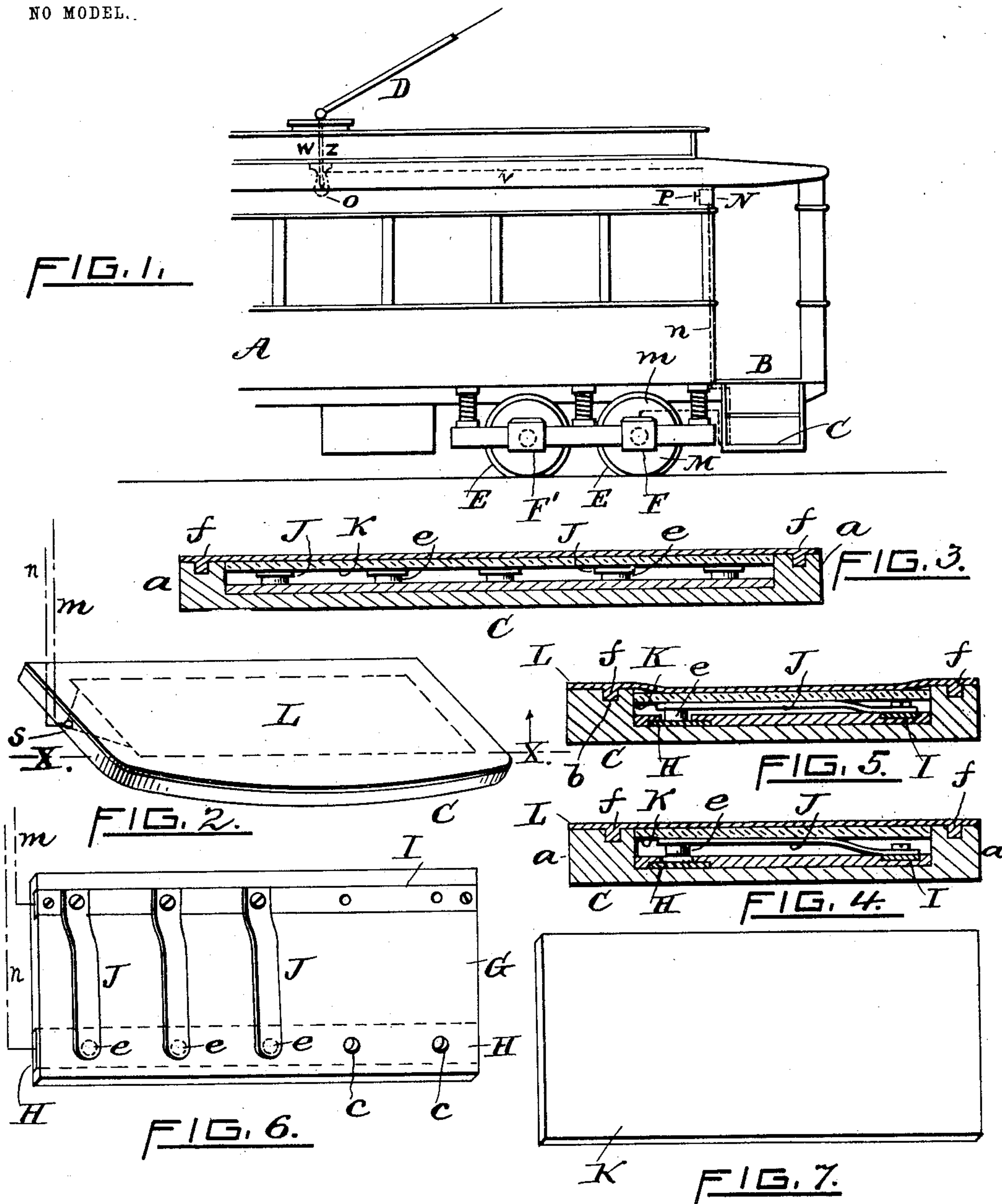
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ELECTRIC ALARM SIGNAL FOR RAILWAY CARS.

APPLICATION FILED JAN. 29, 1903.

NO MODEL.



WITNESSES.

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ELECTRIC ALARM-SIGNAL FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 744,354, dated November 17, 1903.

Application filed January 29, 1903. Serial No. 141,002. (No model.)

To all whom it may concern:

Be it known that I, DAVID N. JORDAN, a citizen of the United States, residing at East Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Electric Alarm-Signals for Railway-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

Like letters indicate like parts.

Figure 1 is a side elevation of an electric street-railway car provided with my invention. Fig. 2 is a perspective view of a step of such a car containing my said invention. Fig. 3 is a sectional view of the device as seen on line *xx* of Fig. 2. Fig. 4 is a central transverse section of the same as seen in its operative position. Fig. 5 is the same as Fig. 4 except that the parts are shown in their normal or inoperative position. Fig. 6 is a plan view of the contact-board. Fig. 7 is the rubber mat which covers the operative parts of the device.

My invention is an electric alarm-signal adapted to notify the conductor of a railway-car whether or not there is a passenger or weight upon the car-step, and it is designed as a means of prevention of accidents to passengers in entering a car or alighting therefrom.

Most of the accidents which occur in the passenger traffic of street-railways take place at the car-step when persons are stepping on or off it while the car is in motion. When the conductor is inside the car collecting fares he cannot, especially when the car is crowded and many passengers are standing, positively know when a person is on the car-step in either entering or leaving the car, but must depend entirely upon his judgment as to the possible whereabouts of the incoming or outgoing passenger or act upon the information given to him on inquiry by some one who may be standing on the platform. In either case, however, the street-car company is liable for damages suffered by an injured passenger on account of the assumed negligence of the conductor in not accurately knowing whether the passenger is wholly on the car or wholly off.

My invention relates to the class of elec-

tric alarm-signals; and it consists of the novel construction and combination of the several parts, as hereinafter particularly described, and specifically set forth in the claims.

In the drawings, A represents an electric street-railway car; B, the platform; C, the lower step; D, the trolley-pole; E E, the car-wheels, and F F' the journal-boxes for said wheels.

The car-step C is placed in series with the trolley and ground. It has a rectangular depression or chamber in it. (Indicated in section in Figs. 3, 4, and 5, but most plainly by the dotted lines in Fig. 2.) This car-step C is usually made of iron and is supported in the well-known manner, as illustrated in Fig. 1. On the four flanges *a*, constituting the walls of said depression, is the top groove *b*. On the bottom of this car-step depression is placed first the contact-board G, made of wood, fiber, or other suitable substance which is not a conductor of electricity. The contact-board G has a series of holes or openings *c* through it, preferably in a line near the front edge thereof, and on its under side it is longitudinally channeled. A brass or other metallic strip H is laid and secured in the channel so formed and lies in contact with the step C in the depression or chamber thereof. This strip H is in line with the holes *c*. It is shown in section in Figs. 4 and 5 and in dotted lines in Fig. 6. Near the opposite (inner) edge of the contact-board G it is channeled longitudinally upon its upper side, and a brass or other metallic strip I is laid and secured in the channel so formed, as seen in Figs. 4, 5, and 6. Spring-arms J, of tempered brass or other suitable metal, are fastened at one end thereof to the metallic strip I by the screws *d* or otherwise. At the opposite (front) end of each spring-arm J is a contact-block *e*, made of metal or other material adapted to conduct electricity and of a size and shape to enable it to pass easily through the hole *c*, to which it is adjacent, until its lower surface is in contact with the upper surface of the strip H.

A cover K, rectangular in shape or otherwise formed to fit loosely in the depression of the car-step C, is made of wood, fiber, or other suitable material which does not con-

duct electricity and rests upon the top surface of the spring-arms J J, as shown in Figs. 3, 4, and 5.

L is a mat or tread, preferably made of india-rubber or other material which does not conduct electricity, and constitutes the entire upper surface of the car-step C. The mat L has the four ribs *ffff* on its lower surface, and these ribs enter the grooves *a* of the car-step, as fully represented in Figs. 3, 4, and 5, and are cemented or otherwise secured therein.

A wire *m*, properly insulated, passes through an opening *s* in the side of the car-step C and is fastened at its lower end to the strip I by a screw or otherwise, as shown in Fig. 6, and its opposite end passes to the journal-box M or other suitable support for grounding. A wire *n*, properly insulated, passes through said opening *s* of the car-step and is fastened at its lower end to the strip H by a screw or otherwise, as shown in Fig. 6, and its opposite end passes up to the switch and fuse-box N, and a wire *v* passes from the switch or fuse-box N to the electric lamp O in the ceiling of the car, and the wires *w* and *z* from the lamp O connect, as usual, with the trolley-pole D to complete an electric circuit for lighting.

The position of the parts contained in and upon the car-step is normally as shown in Fig. 5. Here the upper surface of the mat L is flush or even with the top of the car-step C, and the contact-blocks *e* of the spring-arms J are raised by the resilience of said springs above and out of contact with the metallic strip H. The cover K, resting upon the spring-arms J, is also elevated, as seen in said figure; but whenever a person steps upon the mat or tread L said mat or tread is depressed in its center and crowds down the cover K, and the cover K presses down the spring-arms J J, and when said spring-arms have come to the position shown in Fig. 4 the contact-blocks *e e*, passing down through the holes *c c* of the contact-board G, come into contact with the metallic strip H. The electric circuit is then complete and the electric lamp is lighted. As soon as the person steps off the car-step C the spring-arms J J, being then relieved of pressure, rise from the operative position (shown in Fig. 4) to the normal or inoperative position, (shown in Fig. 5,) thus breaking the electric circuit, and consequently the electric light is extinguished. It is thus evident that the lamp O will be lighted, and so continue as long as a person is upon the car-step C, and in this manner the conductor is always able to know whether said step is occupied or not. It is to be understood, however, that the electric lamp O is independent of the regular illuminating-lamps for lighting the car and is on an electric circuit of its own shunted off from the main circuit. This signal-lamp O, connected with the car-step, should have its globe red or of some other distinguishing color.

It is obvious that instead of using a lamp O for an alarm-signal I may use a bell or a dial or other suitable indicating means.

The ribs *ff* of the mat or tread L, fitting in the grooves *b* of the car-step flanges *a*, constitute a protection against the weather and prevent rain, snow, or moisture from reaching the interior operative parts of the device. Instead of this a rubber bag or any other suitable weather-proof protector may be used to cover said operative parts.

Whenever for any reason it is desired that this step-protecting device shall not be used, the electric circuit can be broken by turning the switch P.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. In an electric car, the combination of an electric signal, a car-step having a depression or chamber in its upper side, a contact-board which is not a conductor of electricity located in said depression or chamber and having two longitudinal metallic strips one upon the upper side thereof near the back edge and one upon the lower side thereof near its front edge, which contact-board has a series of holes or openings through it near the front edge, a series of metallic spring-arms fastened at their rear ends to the first-named strip and each provided at its front end with a contact-block capable of passing through that hole of the contact-board adjacent thereto to touch the upper surface of the second-named strip and thus to complete an electric circuit therewith, a wire from said signal to the last-named strip, and a grounding-wire from the first-named strip, to a proper support, substantially as specified.

2. In an electric car, the combination of an electric signal, a car-step having a depression or chamber in its upper side, a contact-board located in said depression or chamber and having two longitudinal metallic strips one upon the upper side thereof near the back edge and one upon the lower side thereof near the front edge, which board is provided with a series of holes or openings through it near the front edge, a series of metallic spring-arms fastened at their rear ends to the first-named strip and each provided at its front end with a contact-block capable of passing through that hole of the contact-board adjacent thereto to touch the upper surface of the second-named strip and thus to complete an electric circuit therewith, a wire from said signal to the last-named strip, a grounding-wire from the first-named strip, to a proper support, and a cover in said depression or chamber resting upon said spring-arms, substantially as described.

3. In an electric car, the combination of an electric signal, a car-step having a depression or chamber in its upper side and a groove in its upper surface near the edge thereof, a contact-board located in said depression or chamber and having two longitudinal metallic strips one upon the upper side thereof

near the back edge and one upon the lower side thereof near the front edge, which board is provided with a series of holes or openings through it near the front edge, a series of
5 metallic spring-arms fastened at their rear ends to the first-named strip and each provided at its front end with a contact-block capable of passing through that hole of the contact-board adjacent thereto to touch the
10 upper surface of the second-named strip and thus to complete an electric circuit therewith, a wire from said signal to the first-named strip, a wire from said signal to the last-named strip, a grounding-wire from the first-named
15 strip to a proper support, a cover in said depression or chamber resting upon said spring-arms, and a mat resting upon said cover and car-step and provided with ribs which enter into said grooves of the car-step, said con-
20 tact-board, cover and mat being made of ma-

terials which do not conduct electricity, substantially as described.

4. In an electric car, the combination of a car-step having a depression or chamber therein, a depressible board having contact- 25 points, a wire-circuit connecting said board with the signal and closed by said contact-points when depressed, a grounding-wire from said board to a proper support, and a weather-proof protecting device arranged and adapted 30 to protect from moisture the said operative parts contained in said depression or chamber of the car-step, substantially as specified.

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

DAVID N. JORDAN.

Witnesses:

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HOWARD A. LAMPREY.