

No. 736,345.

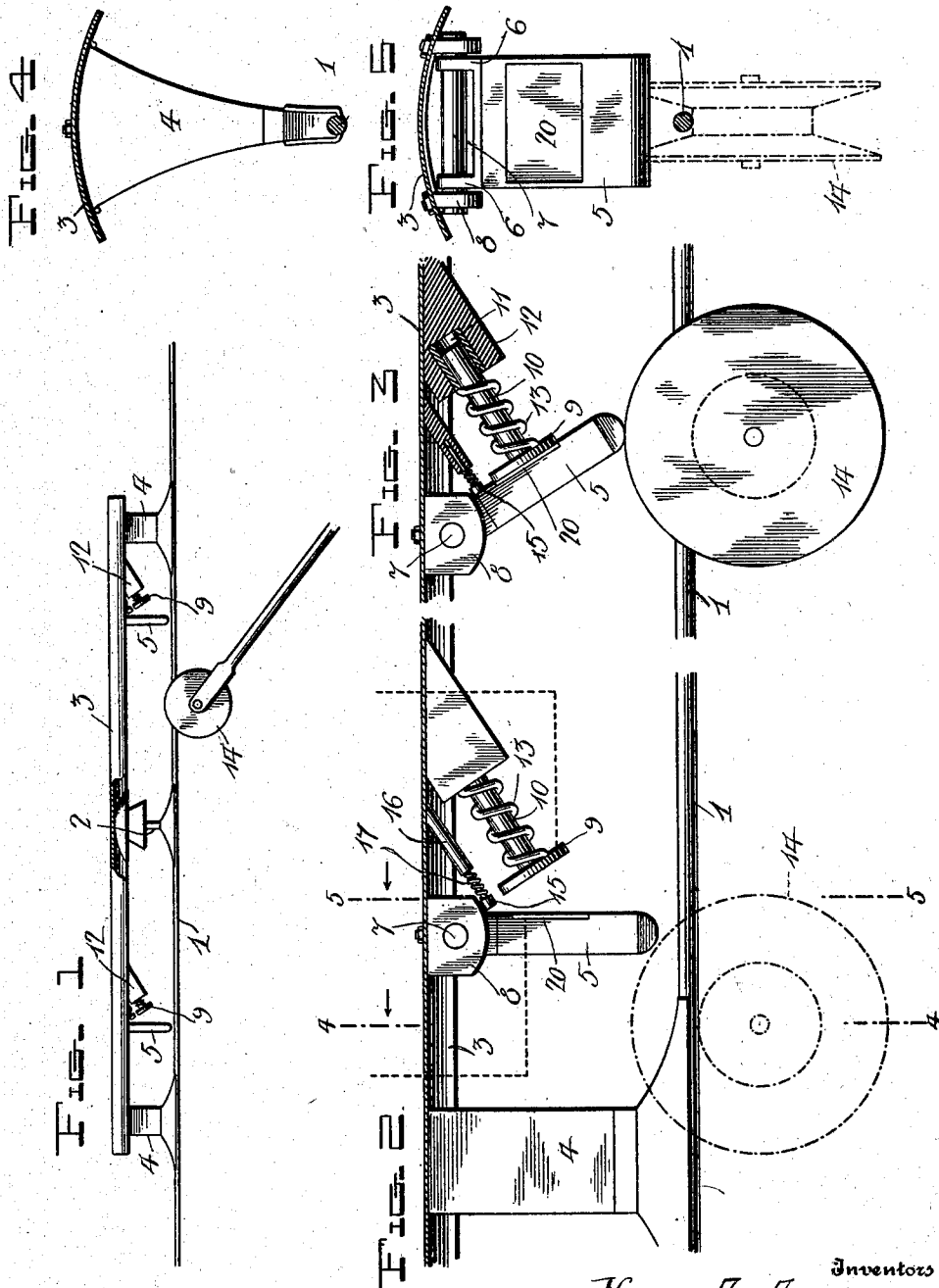
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ELECTRIC RAILWAY SIGNAL.

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NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 736,345, dated August 18, 1903.

Application filed November 19, 1902. Serial No. 131,935. (No model.)

To all whom it may concern:

Be it known that we, HENRY ARNOLD AMMANN and ALBERT DONALD CAMPBELL, citizens of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Electric Railway-Signals; and we 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 signaling appliances, and has for its object the production of a simply-constructed and efficient electric signaling mechanism adapted for employment more especially in connection with electric railways to signal the approach and location of the cars or trains at points adjacent to the line of road or at distant points, the signaling being accomplished preferably through the engagement by the trolley of the means by which the signaling-circuit is closed.

The details of the invention will be readily comprehended, reference being had to the following description and to the accompanying drawings, illustrating the invention in its preferred form, it being understood that various modifications may be made therein without departing from the spirit of the invention defined by the concluding claims.

In the drawings, Figure 1 is a side elevation of an electric signaling appliance embodying the invention. Fig. 2 is an enlarged detail view of a circuit-closer forming part of the invention. Fig. 3 is a similar view of the circuit-closer engaged by the trolley-wheel. Fig. 4 is a sectional view on line 4 4 of Fig. 2. Fig. 5 is a sectional view on line 5 5 of Fig. 2.

Referring to the drawings by numerals, 1 denotes an overhead trolley-wire, supported in the usual manner by a hanger 2. A transversely-curved plate or hood 3 is attached toward its ends to supports 4 4, secured to the trolley-wire, the plate or hood being immediately supported by the hanger 2. The plate or hood is preferably insulated from the trolley-wire by the interposition of insulating material at the supports 4 and hanger 2.

Depending from the plate or hood 3 is a movable contact, preferably in the form of

an arm 5, having at its upper end ears 6 6, pivotally connected by a pin 7 to ears 8 8, extending downwardly from the plate or hood. On the plate or hood adjacent to the movable contact is a fixed contact, preferably in the form of a yieldingly-supported plate 9. This plate 9 has a stem 10, slidable in an opening 11, provided in a supporting-bracket 12, secured to the plate or hood, and said plate 9 is normally extended to the position shown in Fig. 2 by the action of a spring 13, coiled around the stem and interposed between the bracket and plate.

In practice the lower end of the arm 5 is within the path of the trolley-wheel 14 and is engaged by the latter in the movement of the car or train and swung to the position shown in Fig. 3, when engagement between the contacts is effected, the spring-pressed plate 9 yielding sufficiently to enable the trolley-wheel to ride past the contact 5, whereupon the latter swings back to first position. Inasmuch as the contact 5 is liable after engagement by the trolley-wheel to rebound or swing by its own impetus forwardly in the direction of the contact 9 and establish by a second engagement a second circuit, there is provided in the path of the contact 5 a buffer 15, the stem of which is slidable in a bracket 16 on the plate or hood and which is extended normally beyond the contact 9 by the action of a coiled spring 17. Obviously the tension of the spring 17 will be sufficient to prevent movement of the contact 5 sufficiently to cause the engagement of the latter with the contact 9 unless such movement is effected by the trolley-wheel.

In a circuit is provided proper signaling devices which may be either visual or audible, or both. The terminals of the circuit-wires may be connected with the contacts in any one of a number of ways. For instance, one wire 18 may lead from the contact-plate 9, in which event the plate is insulated from the plate or hood, and the other wire 19 may lead from a plate 20, secured to and insulated from the arm 5. It will be understood that upon engagement of the plates 9 and 20 the circuit is closed and the signaling devices are actuated to give warning of the approach of a car or train, and, if desired, to give in addition

the location of such car or train on the line of road. Signal-bells or annunciators in the circuit may be provided at points along the road, and houses and buildings adjacent to the track may be likewise equipped; also, signaling devices may be provided at the offices of the railroad.

Any number of circuit-closers may be provided at any given point whereby a distinctive signal may be sent in, and said closers may be in the same or in different circuits. The plate or hood protects the parts from rain and snow, thereby insuring proper operation in all conditions of weather. Obviously the circuit-closers, as shown, are moved to establish the circuit by the wheel of a car or train going in one direction—namely, that indicated by the arrow in Fig. 1. Where there is a single track, reversely-disposed circuit-closers will be provided, whereby cars moving in either direction will send in the signals.

We claim as our invention—

1. In combination, a support, a freely-swinging gravity-arm pivoted at its upper end on the support and having its lower end in

the path of the trolley-wheel, a contact carried by the arm, a yielding contact on the support in the path of the arm contact, and a spring-buffer on the support located to be engaged by the arm in the movement of the latter, said buffer extending normally beyond the plane of the yielding contact.

2. In combination, a support, a freely-swinging gravity-arm pivoted at its upper end on the support and having its lower end in the path of the trolley-wheel, a contact-plate carried by the arm, a spring-pressed contact-plate on the support in the path of the arm-contact plate, and a spring-pressed buffer-plate on the support located in the path of the arm and extending normally beyond the plane of the spring-pressed contact-plate.

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

HENRY ARNOLD AMMANN.
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Witnesses:

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