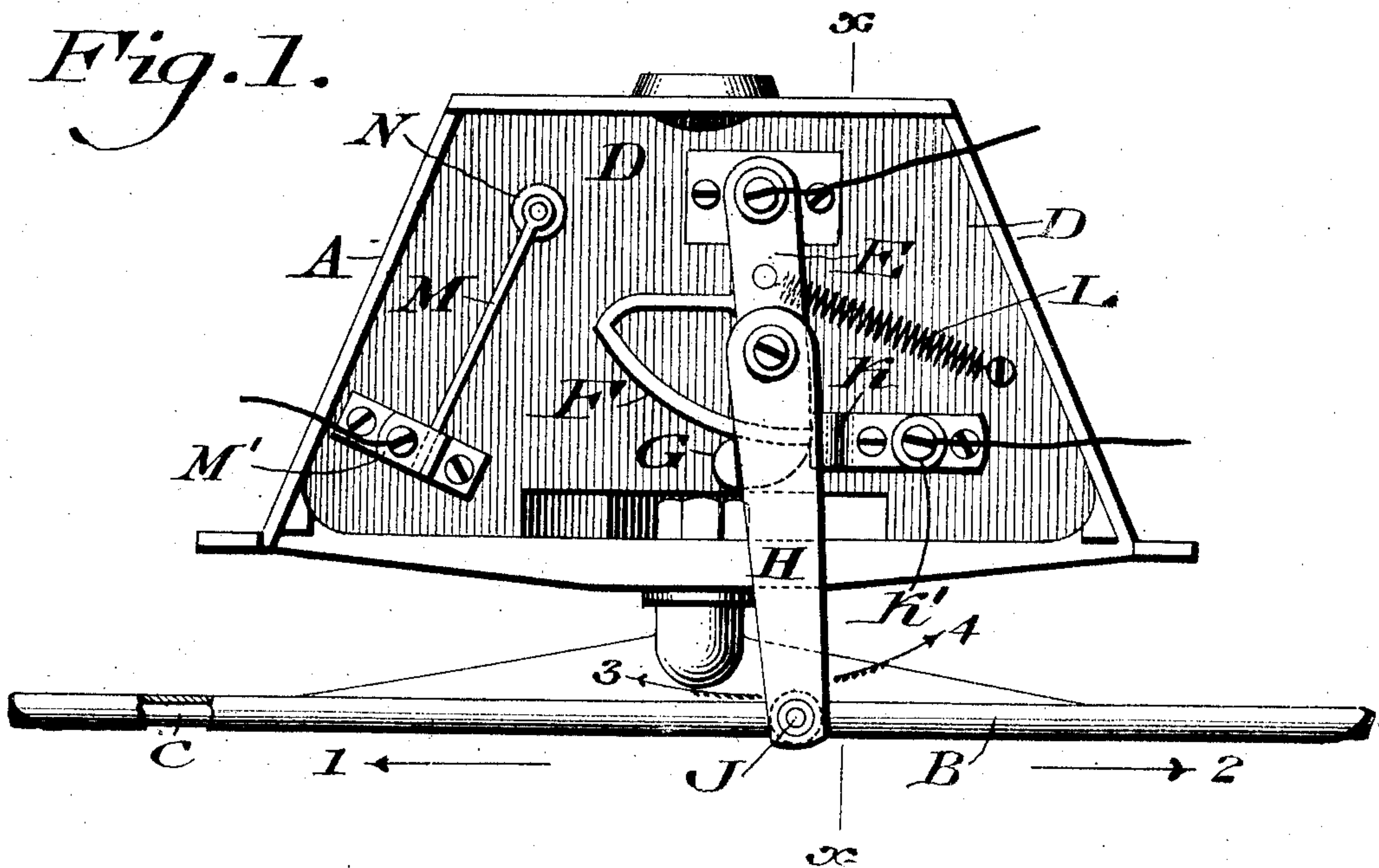
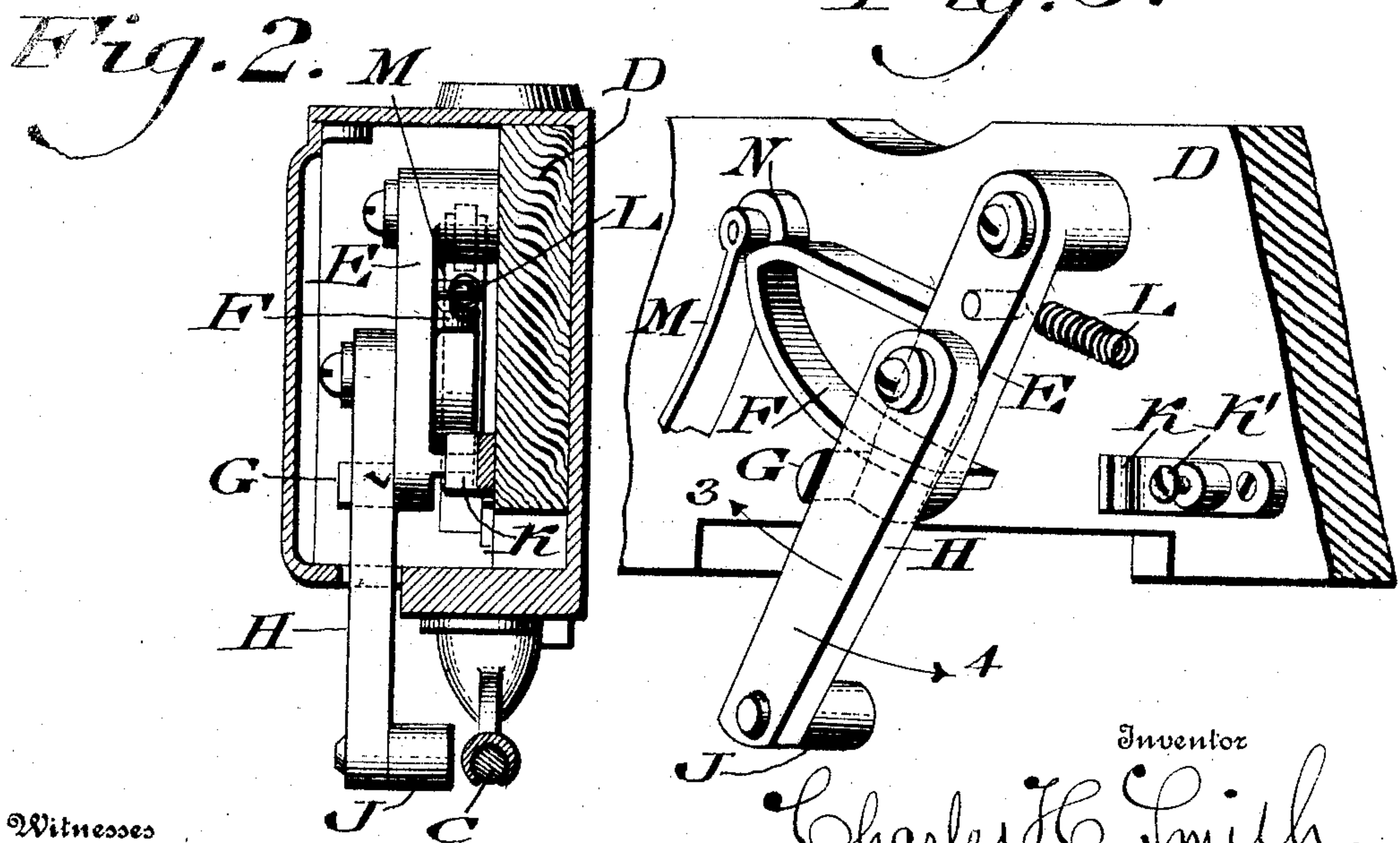


908,895.

*Fig. 1.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## ELECTRIC RAILWAY-SIGNAL.

No. 908,895.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed December 7, 1907. Serial No. 405,473.

*To all whom it may concern:*

Be it known that I, CHARLES H. SMITH, a citizen of the United States, residing at Lebanon, in the county of Lebanon, State of Pennsylvania, have invented a new and useful Electric Railway-Signal, of which the following is a specification.

My invention relates to an electric railway signal of the type commonly known as trolley-actuated contacts, and consists of means located adjacent a trolley wire adapted to be engaged by a trolley wheel to close an electric circuit for the purpose of operating a signal, generally at some distant point, as a notification of the approach of a car or train.

It further consists of means which are adapted to become operative only on the passing of a car in one direction, that is a car passing say to the left would operate the signal means, while one passing to the right would have no effect.

For the purpose of explaining my invention, the accompanying drawing illustrates a satisfactory reduction of the same to practice, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific arrangement and organization shown and described.

Figure 1 represents a side elevation of an electric railway signal embodying the invention. Fig. 2 represents a section thereof on line  $x-x$ , Fig. 1. Fig. 3 represents a perspective view of a detached portion.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawing:—A designates a box or box-like structure, and B designates a trolley ear, which is secured thereto in any suitable manner and engaging the trolley wire C, as well known.

D designates a block of insulating material, which is contained in the box A, and has mounted thereon the lever E, on one side of which is the forwardly projecting piece F preferably of the form of a quadrant and constituting a contact-maker, said lever having also thereon at its lower end a shoulder G, which projects laterally outward therefrom.

H designates an arm, which is pivotally connected with the lever E, and adapted to abut against the shoulder G, whereby said arm, when moved in the direction of the arrow 3, will carry with it said lever. On the lower end of the arm H is an inwardly extending limb J, which is adapted to be in the

path of an approaching trolley wheel and engaged by the same. Connected with the block D, is the stop K, which is so located as to have the lever E, on its return motion and normal position, abut thereagainst, and connected with the block D and the lever E, is the spring L, whose tendency is to return said lever to its normal position.

M designates a plate of resilient material forming a spring, one end of which is connected by the piece M' with the block D, and the other end has mounted upon it the roller N, which is adapted to have the member F contact therewith when the latter is advanced thereagainst.

The operation is as follows:—When the car is running in the direction of arrow 1, and it reaches the arm H and it is desired to signal ahead, the trolley wheel strikes the limb J and moves said arm in the direction of the arrow 3, when, as the lever E is engaged by said arm, the piece F is advanced to the roller N and rides upon the same, this making contact and closing the circuit, whereby the signal is occasioned. When the trolley wheel trips said limb J or clears the same, said arm is released, when the spring L causes the lever E and said arm H to return to their normal positions, the lever abutting against the shoulder K as a stop, and the circuit being broken. Should the car move in the direction of arrow 2, the signal can not be given. In this case, the trolley wheel strikes the limb J, and the arm H yields in said direction, and so clears the trolley wheel without disturbing the lever E, which, as is evident, remains at rest against the shoulder K. It will be seen that on the forward movement of the lever E when the contact piece F rides freely on the roller N, the spring or resilient arm M causes said roller to press against said piece and make the contact as effective and long as possible, thus assuring the positive closing of the current. On the return motion of the lever, the piece F rides freely backward on the roller, thus continuing the circuit until said piece fully clears the roller, when the circuit is broken. The shoulder or stop K is provided with the screw K', to which, if desired, may be attached a circuit wire for use for another purpose.

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

1. In an electric railway signal of the



character stated, a contact maker, a lever carrying the latter, an arm mounted on said lever, said arm and lever being adapted to move together in one direction of said contact maker and being movable independent of the other in the opposite direction thereof, said contact maker being disposed adjacent the pivotal connection between said lever and arm and an insulated support on which said lever is mounted.

2. In an electric railway signal of the character stated, a contact-maker consisting of a contact piece, and a resilient arm carrying the same combined with a two part carrier, the parts being adapted to move together in one direction of the carrier and one of the parts being movable independent of the other in the opposite direction of said carrier, and a contact piece carried by one part of the carrier.

3. In an electric railway signal, a contact-maker consisting of a contact piece substantially of the form of a quadrant, an oppositely disposed contact piece, and means for carrying the first named piece to the second named and holding the pieces engaged in the forward and return motions of the first named piece, said means being jointed and the parts thereof being adapted to move together in one direction of the carrier and one of the parts being movable independent of the other in the opposite direction of said carrier.

4. In an electric railway signal of the character stated, oppositely disposed contacts, one of which is carried by a resilient arm, and the other by a pivoted arm, the first named contact being in the path of the

second named contact, said pivoted arm being jointed, with one part movable independent of the other in one direction of its movement.

5 In an electric railway signal, a contact-maker, a lever carrying the same, means for pivotally mounting said lever, an arm pivotally mounted on said lever, means adapting said arm to move with said lever in the advance direction of said contact-maker, and a stop for said lever on the return motion thereof, said arm being out of the path of said stop on said return motion.

6. In an electric railway signal, a contact-maker, a lever carrying the same, an insulating support on which said lever is pivoted, an arm pivotally mounted on said lever, a shoulder on said lever with which said arm may engage in the advance motion of the contact-maker, thus engaging said lever and arm as one, and a stop on said support for said lever on the return motion of said contact-maker, said arm being out of the path of said stop on said return motion.

7. In an electric railway signal, a contact-maker and a two-part carrier therefor, the two parts thereof being in different planes, one member being pivotally mounted on the other part and engageable therewith in the advance of said contact-maker and having a motion independent of the same on the return of said contact-maker.

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