

E. R. CUNNINGHAM.
SIGNAL CONTACT.
APPLICATION FILED SEPT. 3, 1910.

1,005,418.

Patented Oct. 10, 1911.

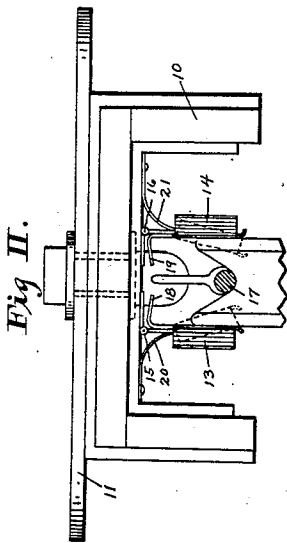


Fig. II.

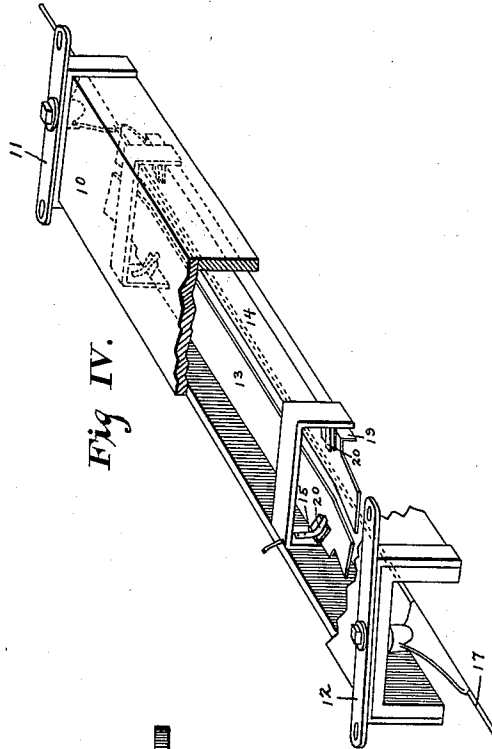


Fig. IV.

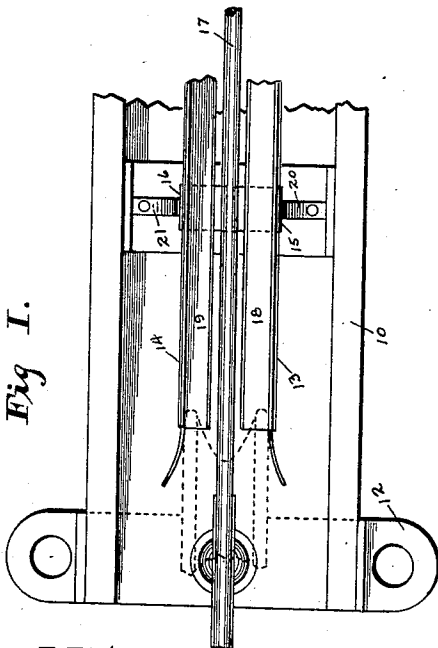


Fig. I.

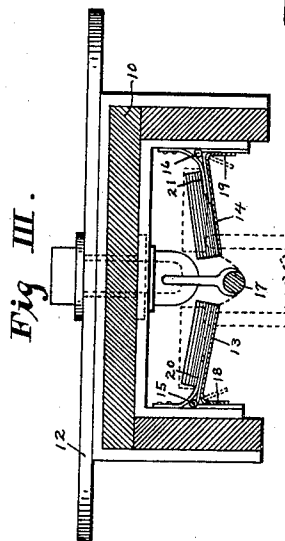


Fig. III.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD R. CUNNINGHAM, OF DES MOINES, IOWA, ASSIGNOR OF ONE-THIRD TO E. B. BEIGHLER AND ONE-THIRD TO FRANK C. TATE, OF DES MOINES, IOWA.

SIGNAL-CONTACT.

1,005,418.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed September 3, 1910. Serial No. 580,405.

To all whom it may concern:

Be it known that I, EDWARD R. CUNNINGHAM, a citizen of the United States, residing in Des Moines, county of Polk, and State of Iowa, have invented a new and useful Improvement in Signal-Contacts, of which the following is a specification.

The object of my invention is to provide a signal contact for trolley roads, simple, strong, durable and inexpensive, in construction which will not interfere with the free and uninterrupted passage of the current collecting device as it passes along the trolley wire and through the contact.

A further object is to so construct such a signal contact that the current that is used to operate the car will not pass through the contact but will continue to pass from the wire to the trolley wheel in the same manner as it would if the wheel was not within the contact. By such a construction it is obvious the efficiency in the operation of the car is not impaired.

Another object is to construct a contact for this purpose in such a manner that it will not be necessary to cut the trolley wire, to secure it in position, or to deflect the wire from its normal position.

Another object is to so construct my signal contact that there will be no jerking or jarring of the parts when the trolley wheel comes in contact with, and passes through, the contact.

My invention relates to signal contacts which are designed to be electrically and mechanically connected with various danger and safety signals on an electric railroad but as the signals and their connections are no part of this invention I have not shown them nor will I describe the same except to make general reference thereto.

My invention consists of certain details of construction, hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings in which—

Figure I shows an inverted plan view of a part of my device; Fig. II shows a front end view of the same; and Figs. III and IV show views of a modified form I employ.

Referring to the accompanying drawings the reference numeral 10 is used to indicate a housing, constructed of wood or other insulating material, which serves to hold the operating parts in proper position, relative to the trolley wire.

The numerals 11 and 12 indicate cross arm supports secured to the housing and designed to provide means for anchoring same by cross suspension wires attached thereto which may be secured to supports at the side of the track.

Secured within the housing are two plates, 13 and 14, arranged one on each side of the wire and hinged, at 15 and 16 respectively, to their respective sides in such a manner as to incline slightly from the vertical, their inner ends being in close proximity to the wire 17, and parallel therewith but not connecting with it, so as to be in position to be engaged by the trolley wheel, or other current collecting device, as it passes through the contact. The extremities of these plates are curved to receive the trolley wheel, as it passes through, without any great jarring of the parts. The plates are constructed of any suitable material and are angled, as shown at 18 and 19, at the points where they are hinged, the object of same being to stiffen them and also to limit their movement toward the trolley wire, or inwardly when the wheel is not within the contact.

The numerals 20 and 21 indicate springs designed to actuate their respective plates for the purpose of pressing them toward the trolley wire, and trolley wheel, when the wheel is passing through the contact. In Figs. III and IV I have illustrated a modified form of this contact which is practically the same except that the plates are mounted to the sides of the housing, their positions being such as to cause them to be slightly inclined downwardly toward the trolley wire and their extremities are curved upwardly the wheel being designed to pass beneath the plates and deflect them upwardly. The contact plates may be hinged to lie either in a vertical or horizontal plane at the side of the trolley wire, or in any intermediate plane or position parallel with the trolley wire, as may best suit the design and construction of the particular kind of trolley wheel and pole or other current collecting device which may be employed to operate the car, and I do not wish to be limited to any particular location of these plates, relative to the trolley wire, but to be free to secure them either in a vertical or horizontal plane, or in any intermediate position parallel with, and at a convenient distance from, the trolley wire so as to make contact with the trolley wheel, or

other current collecting device, as it passes along the trolley wire in its normal operation of collecting current for the operation of the car. These plates are so arranged as not to interfere with the free and uninterrupted passage of the current collecting device as it passes along the wire and through the contact.

My contact is so constructed and the parts so wired as to transmit energy from the current collecting device to a setting switch but as this is no part of this invention it has not been shown nor will it be claimed.

The current which is used to operate the car does not pass through the signal contact but passes from the wire to the wheel in exactly the same manner as it would if the wheel was not within, or near the contact, the groove of the trolley wheel running on the wire in the usual manner and retaining its usual and normal contact therewith, so that its efficiency, so far as the operation of the car is concerned, is not diminished nor is its mechanical operation interfered with in any manner. This I consider as very important and, by this construction, it is obvious it is not necessary to cut the trolley wire or to deflect it out of its normal position, as the contact plates are located at the side of, or above, the trolley wire so that the trolley wheel, as it passes along the wire, remains in continuous contact therewith as it passes through the contact. In this connection it should be noted that in most trolley contacts the current which operates the car is compelled to pass through the contact and through the flange of the wheel producing severe arcing at the contact which causes it to rapidly deteriorate and wear away. Also in most contacts in use the trolley wheel runs on the flange through the contact and as the diameter of the wheel to the flange is greater than the diameter of the wheel to the groove, the speed of the wheel is greatly diminished as it passes through the contact and this causes a jerk or jar when the wheel strikes the contact. In my improved contact this is entirely obviated as the speed of the wheel does not change while it is passing through the contact.

With my improved contact only that portion of the current which is actually used to operate the signals passes through the signal contact and the flange of the wheel and there is a little or no burning of the wheel and contact and consequently my contact gives

much longer service. Furthermore with most of the contacts in general use it is necessary for the trolley wheel to make connection with both sides of the signal contact in order to operate the signals, and also to carry current to operate the car, whereas, with my improved contact it is only necessary for the wheel to connect with one side of the signal contact. This is very important since at high rates of speed if the trolley wheel happens to be slightly tilted to one side it will pass through the contact and only touch one plate, being carried through on one flange of the wheel, and, if the signal contact plates are in series, the circuit is interrupted both to the car and the signal. With my contact the wheel is carried continuously on the wire and the circuit to the car is never interrupted and, as the contact plates are in multiple, if the flange of the trolley wheel touches either of the contact plates the signals will operate.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. A trolley contact including a housing, and spring pressed hinged plates carried by the housing, said plates having a horizontal portion to engage the trolley wheel and a depending portion to engage the sides of the housing to thereby restrict the downward movement of the plates.

2. A trolley contact including a housing, plates having sides arranged at an angle to each other and hinged to the housing so that one side of each plate will engage the trolley wheel and the other side of each plate will engage the housing and limit the movement of the plate toward the trolley wheel, and springs secured to the housing and engaging said plates to normally force the plates toward the trolley wheel.

3. A trolley contact including a housing, plates having sides arranged at an angle to each other and hinged to the sides of the housing below the top thereof, and flat springs secured to the sides of the housing at one end and having their free ends bearing on the upper sides of said plates, the other sides of said plates engaging the housing sides to restrict the downward movement of the plates.

EDWARD R. CUNNINGHAM.

Witnesses:

LUCILLE ROE,
ZELL G. ROE.