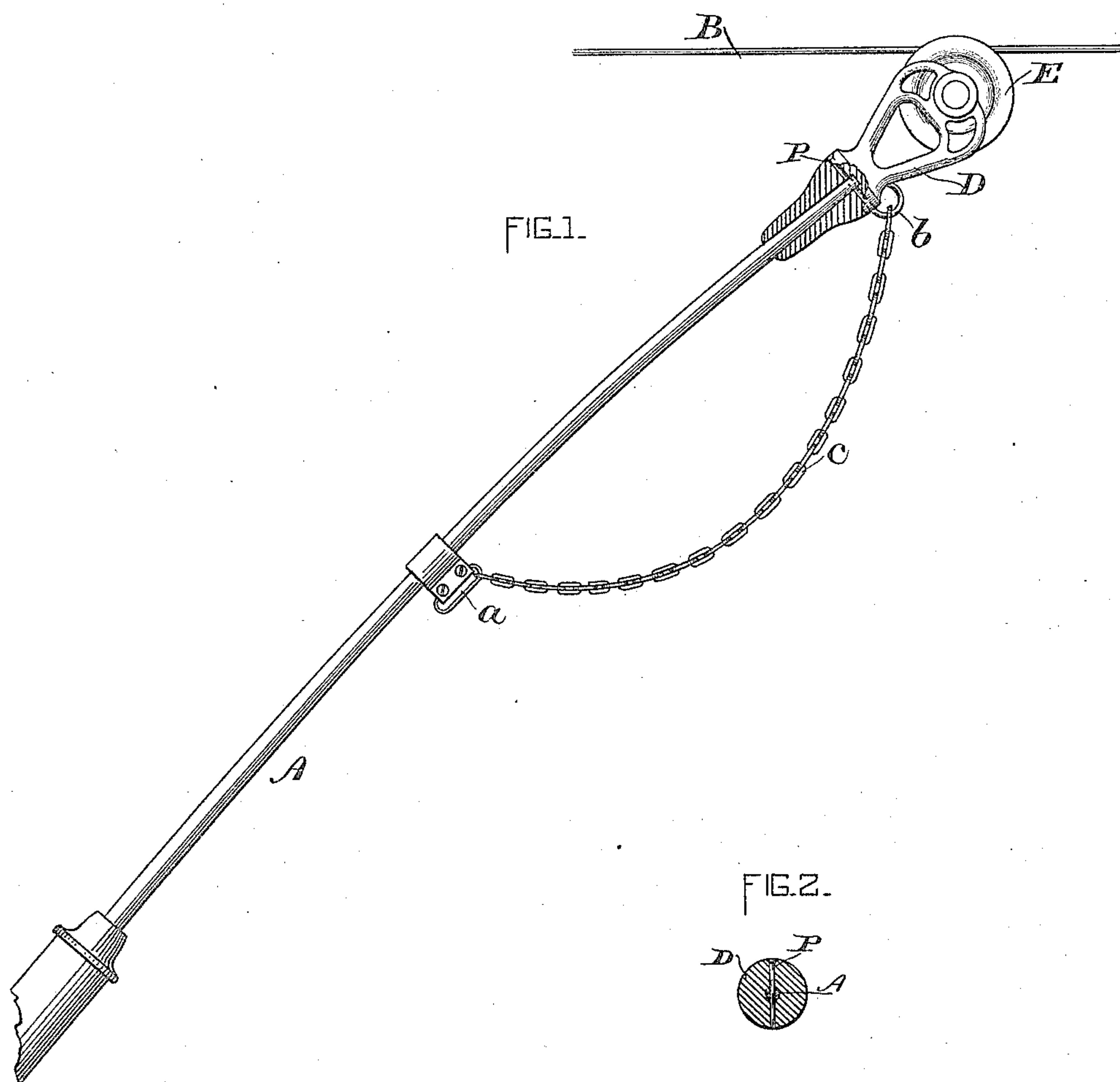


(No Model.)

J. B. CAHOON & I. F. BAKER.
CONTACT TROLLEY FOR ELECTRIC RAILWAYS.

No. 446,428.

Patented Feb. 17, 1891.



WITNESSES:

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INVENTOR:

Isaac F. Baker
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UNITED STATES PATENT OFFICE.

JAMES B. CAHOON AND ISAAC F. BAKER, OF LYNN, MASSACHUSETTS,
ASSIGNORS TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF
CONNECTICUT.

CONTACT-TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 446,428, dated February 17, 1891.

Application filed July 3, 1890. Serial No. 357,655. (No model.)

To all whom it may concern:

Be it known that we, JAMES B. CAHOON, a citizen of the United States, residing at Lynn, county of Essex, and State of Massachusetts, and ISAAC F. BAKER, a subject of the Queen of Great Britain, and a resident of Lynn, county of Essex, and State of Massachusetts, have invented a certain new and useful Improvement in Contact-Trolleys for Electric Railways, of which the following is a specification.

Our invention relates to contact devices for electric railways, especially those of a well-known type, in which the upwardly and rearwardly extending trolley-arm carries a wheel traveling in contact with the under side of a suspended line-conductor. The suspended conductor is usually held up by guy-wires leading off to supports at the sides of the street and making a light net-work structure, which is easily pulled down if any unusual strain is brought upon the conductor. In operating railways of this character accidents have often occurred by reason of the trolley-wheel becoming caught in the conductor, especially at switches and on curves, so that as the car advances a direct pull is exerted upon the line-conductor sufficient to bring it down into the street.

The object of our invention is to avoid all difficulties arising in this way, and we do it by connecting to the trolley-arm an automatically-detachable contact-maker, as described and claimed hereinafter. The normal operation of the contact device is the same as in those now used; but should the trolley-wheel become caught it will be pulled away from its normal connection to the arm and fall down without injury to the line structure.

Our invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the trolley-arm and trolley, and Fig. 2 is a cross-section through the trolley frame and arm.

B is an overhead line-conductor, which may be supported by cross-wires or other means well known in the art and not calling for specific description. From the car (which is not shown) there extends upwardly and rear-

wardly the supporting-arm A, and to the outer end of the arm is connected the trolley-wheel E, which makes a trailing contact with the under side of the conductor. The wheel E is journaled in a frame D, and this frame is slipped onto the end of the supporting-arm, as shown, and held there by friction alone. Connected to the frame D at *b* is a guard-chain or other flexible conducting-guard C, whose other end is attached to the long link *a*, fastened by a collar to the trolley-arm. A pin P passes through the frame D and engages in a slot in the end of the trolley-pole, so as to prevent the wheel turning.

Fig. 2 is a section through the trolley-pole at the pin.

The operation of our device will now be readily understood. Should the wheel become caught, the frame D is pulled away from its normal attachment with the trolley-arm and the wheel drops down, but is prevented from falling into the street or becoming entirely disconnected from the car by the guard-chain C. It is an easy matter to replace the wheel again in its operative position upon the arm, and in this simple manner a great deal of the trouble experienced with suspended line-conductors may be avoided.

It will of course be understood that modifications in the mechanical features of the invention may be made without avoiding the invention. For instance, contact-makers other than the wheel described may be used, and different means also may be employed for connecting the contact-maker to the trolley-arm.

If when the trolley-wheel leaves the trolley-bar the current should be interrupted on the arbor, it would produce an arc at this point which would rough the metal or raise a burr upon it and prevent the replacing of the wheel on the bar. By the construction illustrated, however, the current is shunted through the chain when the trolley-wheel flies off, thus preventing sparking at the arbor.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a contact device for engagement with a suspended electric line-conductor, the combination of an upwardly-extending trolley

arm or pole, with an automatically-detachable contact-maker carried thereby, as described.

2. The combination, with a rearwardly and upwardly extending trolley-arm, of a contact-maker for engaging the under side of the line-conductor secured to the outer end of the said arm by a slip-joint, so that when the contact-maker becomes caught it may be automatically detached from the arm, as described.

3. In a contact device for electric railways, the combination of the arm and contact-maker detachably connected thereto, with a guard for holding the contact-maker when automatically disconnected from its normal attachment to the arm, as described.

4. The combination, with the upwardly-extending trolley-arm, of a frame in which is journaled the trolley-wheel, connected to the outer end of the arm by a slip-joint, and the

chain or equivalent flexible guard attached to the said arm and frame, respectively, as described.

5. The combination of the upwardly-extending trolley-pole with the automatically-separable contact device and the flexible connection of conducting material between the pole and contact device.

6. The combination of an upwardly-extending trolley-arm, an automatically-separable trolley, a flexible connection between the trolley and trolley-arm, and means for preventing the trolley from rotating on the arm.

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Witnesses:

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