No. 661,458. Patented Nov. 6, 1900.

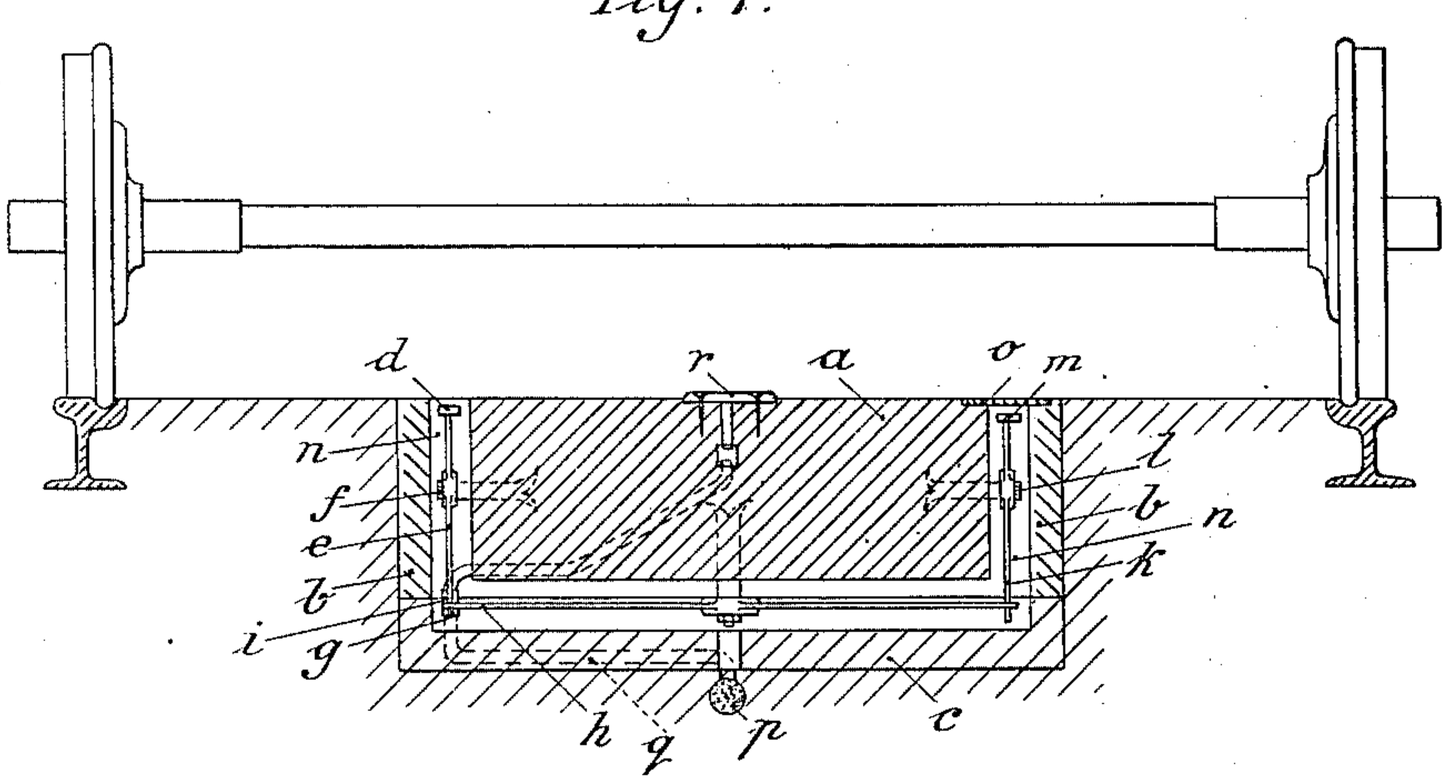
H. SCHRAMM.

CURRENT DISTRIBUTER FOR ELECTRIC RAILWAYS.

(Application filed May 9, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



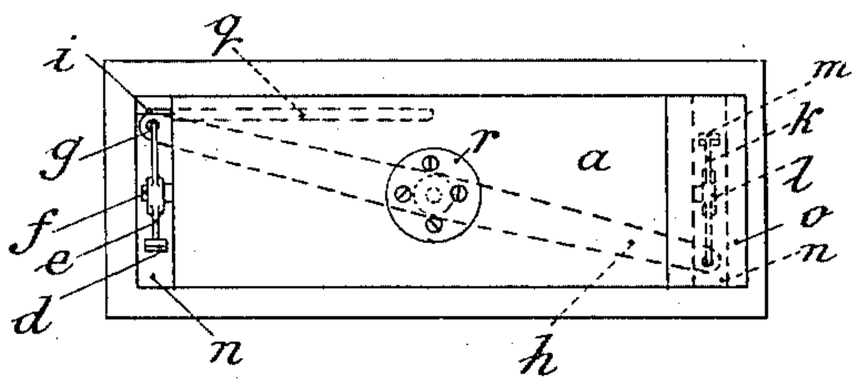


Fig. 3.

Fig. 2.

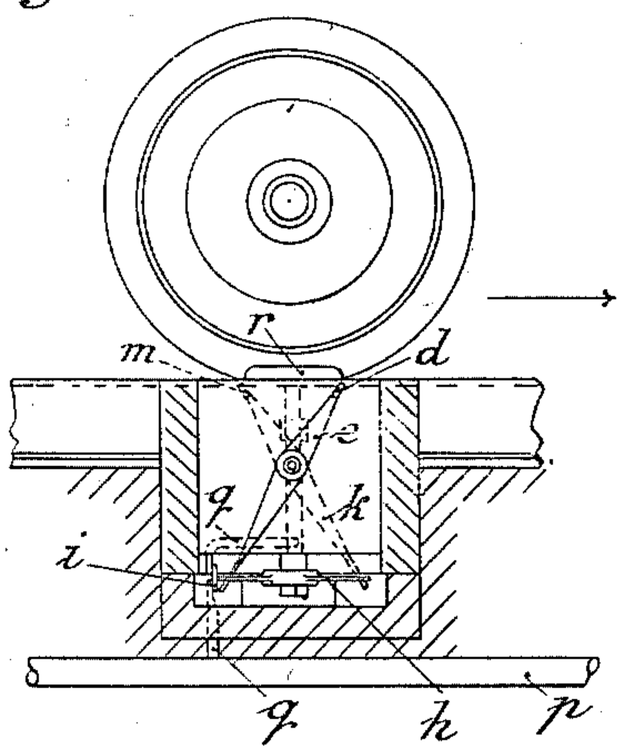
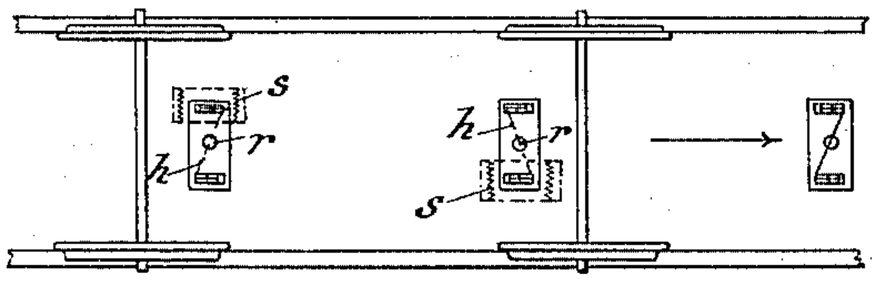


Fig. 4.



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No. 661,458. Patented Nov. 6, 1900.

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CURRENT DISTRIBUTER FOR ELECTRIC RAILWAYS.

(Application filed May 9, 1900.)

(No Model.) 2 Sheets—Sheet 2.

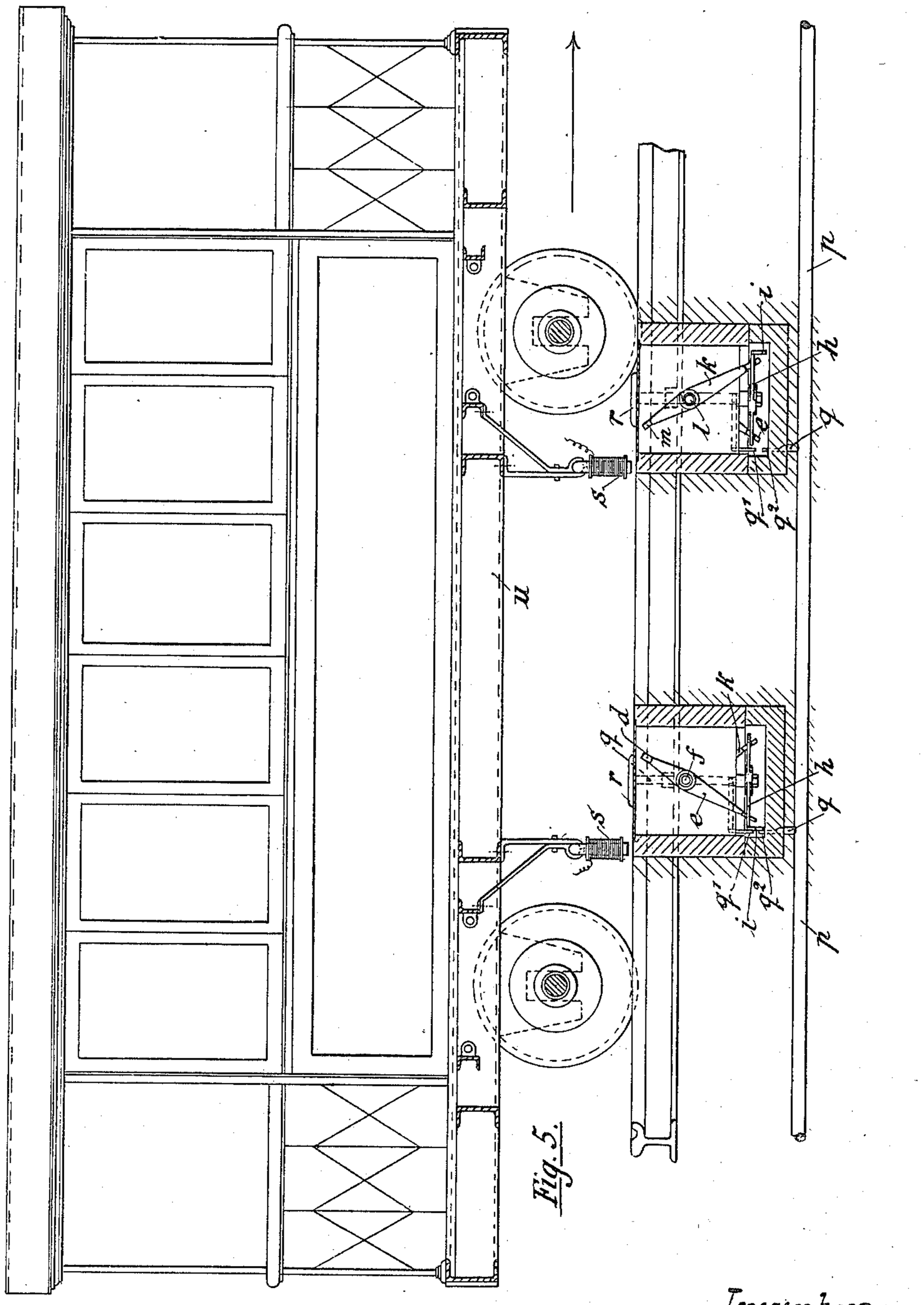

Fig. 5.

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UNITED STATES PATENT OFFICE.

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CURRENT-DISTRIBUTER FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 661,458, dated November 6, 1900.

Application filed May 9, 1900. Serial No. 16,075. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH SCHRAMM, of 8 Untere Wörthstrasse, Nuremberg, in the Kingdom of Bavaria, Germany, have invented new and useful Improvements in Underground Current-Distributers for Electric Railways, of which the following is a specification.

The subject of the present invention is a device for distributing the current from an underground main to the carriages of electric railways. The device is based upon the well-known principle of taking a current from the contact-button of the distributer by means of a sliding contact only when the carriage is passing over this distributer.

The essential feature of the invention consists in the arrangement of a double-armed lever swinging horizontally and provided with a contact-piece which when required connects the free ends of the conductor. In the position of rest, on the other hand, the lever takes up such a position that the contact-piece is withdrawn from the conductor. The horizontal lever is caused to turn on its fulcrum by two other levers swinging in a vertical plane, which engage loosely with the horizontal lever and are actuated by two electromagnets provided on the carriage.

The invention is illustrated on the accompanying drawings.

Figures 1 and 2 show two sections of the distributing device, taken at right angles to each other. Fig. 3 is a plan view of the same. Fig. 4 is a plan view showing the position of certain parts of the apparatus when the carriage is passing over it. Fig. 5 is a longitudinal section of the track and car.

The box *a b c* consists of three parts, the central part *a* being provided on one side with a lever *e*, mounted on the pivot *f* and carrying an iron block *d* or the like at one end. The other end *g* of this lever *e* engages loosely in the horizontal lever *h*, on one arm of which a small insulated disk *i* (the contact-piece) is secured. At the other end of the lever *h* another vertical lever *k*, pivoted at *l*, loosely engages. At the upper end of this lever is a metal block *m*, similar to the block *d*. The two levers *e* and *k* swing in the spaces *n*, covered at the top by plates *o*. The main conductor *p* lies below the center of the boxes, and from it branch the conductors *q*, running to the contact-buttons *r*. These conductors are broken at the place where the vertical lever *e* engages with the horizontal lever *h*. (See Figs. 2 and 5.)

The operation of the new device is as follows: If the carriage is traveling on the track in the direction of the arrow, Figs. 4 and 5, an electromagnet *s*, applied in any suitable manner to the frame *u*, Fig. 5, of the car, causes the arm *e* to turn on its pivot in such manner that the horizontal lever *h*, carrying the contact-piece *i*, connects the two free ends q' q^2 of the branch conductor *q*. The branch conductors *q*, leading from the main *p* to the contact-button *r*, are thus closed, whereby a current can be led to the carriage by means of a sliding contact or the like. The lever *e* remains so long in this position (*i. e.*, the branch conductors are kept closed) until a second electromagnet provided on the carriage actuates the other arm *k* in such manner that the lever *h* is now turned to the other side, whereby the contact-piece *i* is brought out of contact with the ends of the branch conductor *q*. The circuit through *q* is thus interrupted. Meanwhile the first electromagnet has closed the circuit through the branch conductor of the next device, and the operation begins anew. The position of the car, as shown in Fig. 5, is such that the first magnet *s*, which previously actuated lever *e*, turns lever *k* as it passes over the latter by carrying forward the metal block *m*, and thereby effects closing of the circuit at the front of the car, while at the rear of the latter the second magnet actuates lever *k*, so as to break or interrupt the current-supply.

I claim as my invention—

1. A current-distributer for electric railways, by which a current can be taken from the contact-button by a sliding contact as long as the carriage is above the distributer in question, characterized by a horizontal indicator-lever *h*, provided with a contact-piece *i* at one end, engaging loosely with two vertical pivoted arms *e k*, actuated by two electromagnets located on the carriage, in such manner that through one of the electromagnets the circuit to the contact-piece *i* of the hori-

zontal lever *h* is closed and through the second one interrupted.

2. A horizontal contact closing and opening lever combined with lateral swinging electromagnetic-actuated levers for moving the horizontal lever to closing and opening position substantially as described.

3. A main or feeder conductor *p* combined with a broken or open branch *q*, a contact-closer *i* for the break in the branch, a lever made to carry the contact-closer, and oppositely-acting electromagnetic-actuated levers for moving the first-named lever to and from closing position substantially as described.

4. A box or receptacle having a central or supporting portion *a*, a horizontal lever fulcrumed to the under side of the supporting portion, oppositely-acting levers fulcrumed to the sides or ends of the supporting portion and made to move the horizontal lever in opposite directions, a contact carried by the horizontal lever, a broken conductor adapted to be closed by the contact, and an exposed button or face *r* connected with the conductor substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HEINRICH SCHRAMM.

Witnesses:

OSCAR BOCK,

JOHANN HAHN.