

(No Model.)

T. VON ZWEIGBERGK.

TROLLEY AND CONDUCTOR FOR ELECTRIC RAILWAYS.

No. 590,082.

Patented Sept. 14, 1897.

Fig. 1,

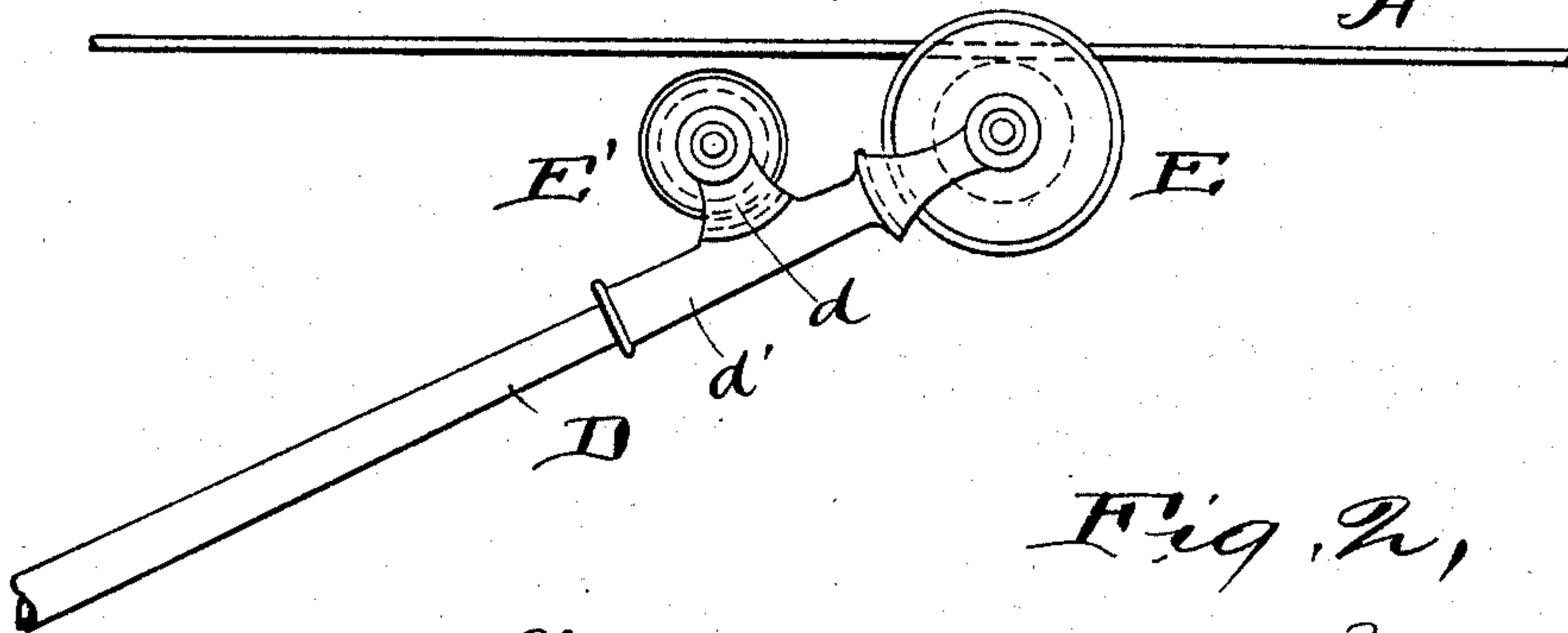


Fig. 2,

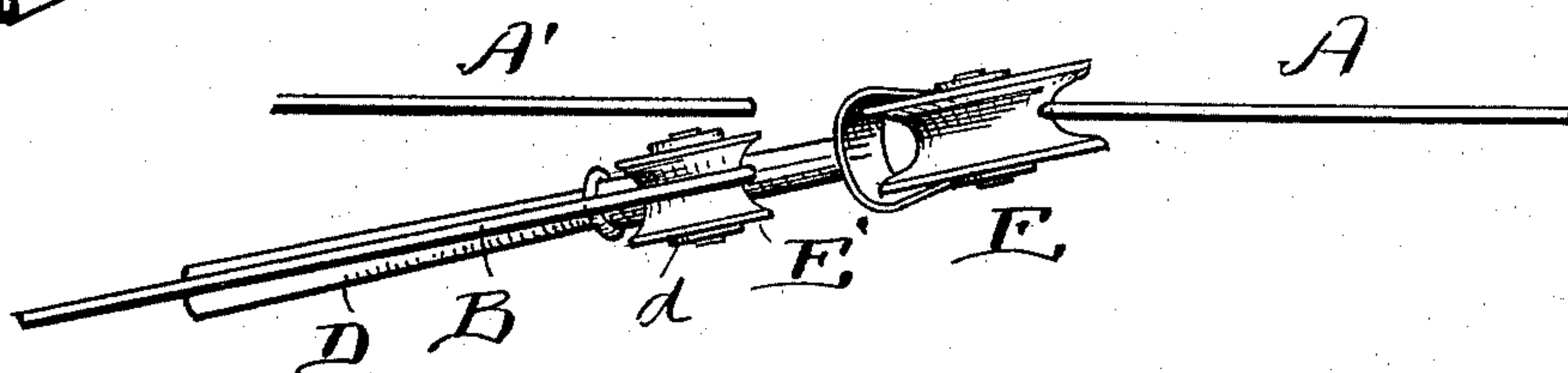


Fig. 3.

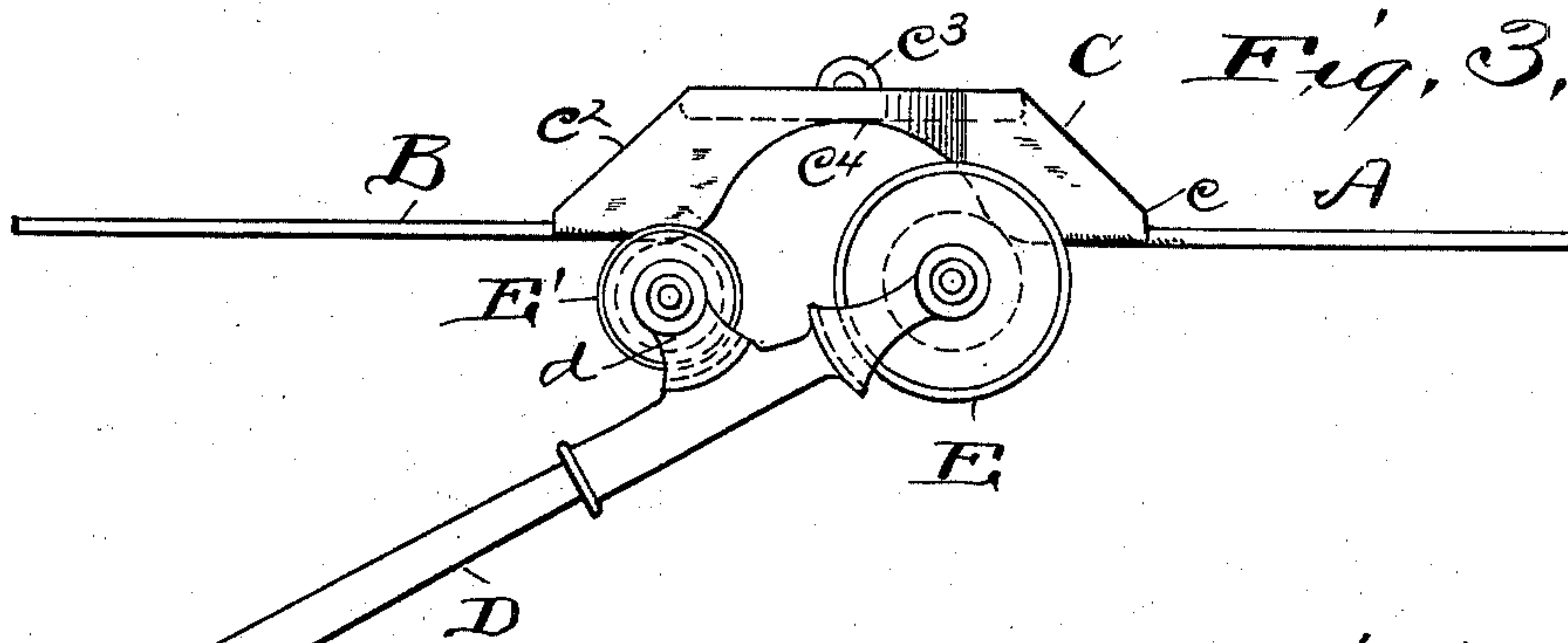
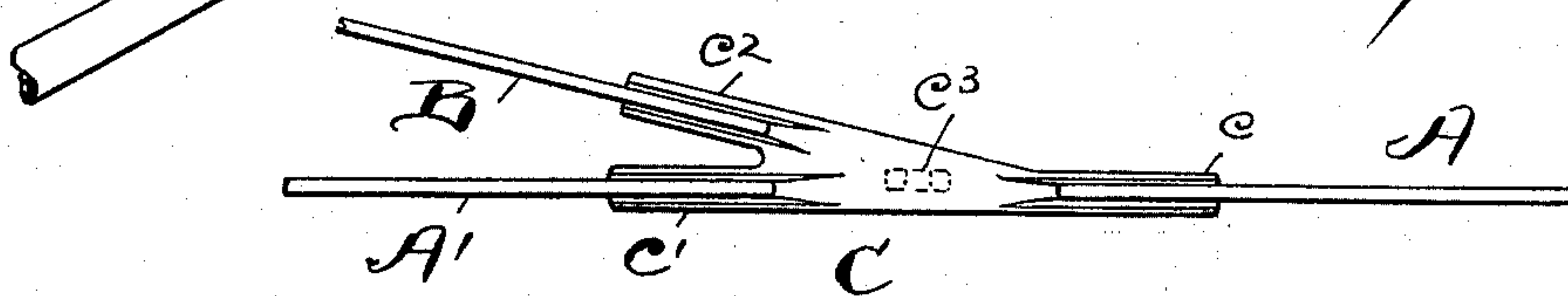


Fig. 4,



Witnesses
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UNITED STATES PATENT OFFICE.

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TROLLEY AND CONDUCTOR FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 590,082, dated September 14, 1897.

Application filed January 30, 1897. Serial No. 621,271. (No model.)

To all whom it may concern:

Be it known that I, THORSTEN VON ZWEIGBERGK, a subject of the King of Sweden and Norway, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Trolleys and Conductors for Electric Railways; and I 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.

My invention relates to the construction of the conductors at and near the point where a branch conductor-wire would join the main conductor-wire and to the construction of the traveling contact device or trolley.

The object of the invention is to so construct these parts that when a car passes a switch in the tracks the trolley will pass into operative contact with the conductor which is associated with the track onto which the car passes without being guided or directed into such contact by any switching or deflecting mechanism which forms a part of or is associated with the conductors.

The invention consists in the described construction of the trolley and of the conductors, as definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the upper end of a trailing trolley-arm of my invention and of a conductor with which it is engaging. Fig. 2 is a plan view of said trolley and of the main conductor and the diverging conductors, the device for connecting said conductors being omitted. Fig. 3 is a side elevation of the parts shown in Fig. 2, together with the member which connects the several conductors; and Fig. 4 is a bottom plan view of the conductors and connecting member shown in Fig. 3.

Referring to the parts by letters, A represents a part of the main conductor-wire, and A' and B two diverging conductor-wires. As shown, the wire A' is in line with the wire A and is a part of the main conductor-wire. The proximate ends of these wires are separated a distance, substantially as hereinafter described, and all are connected together by the connecting member C. This member has the leg c at one end, and the wire A is se-

cured in its lower edge. The member has at the other end two diverging legs c' c^2 , and the wires A' B are secured in their lower edges. The lower edges of all of these legs are in the same plane, but the member between these legs is arched or curved upward above said plane. An eye C^2 may be formed on the top and at the middle of the member C, whereby it and the conductors may be suspended.

The trailing trolley-arm is indicated by D. Its upper end only is shown, because it is only at its upper end that it need to differ from the trolley-arms now in common use. It is intended that this arm shall be fastened upon a car in the ordinary manner, whereby its rear end is constantly pressed upward, and this arm may or may not be adapted to move laterally when in service.

On the upper and rear end of the trolley-arm a grooved contact device in the form of a wheel E is mounted in the usual or any suitable manner. This wheel may be substantially like the wheels now used for the described purpose, although I prefer to make the circumferential groove therein somewhat wider than in the wheels now commonly used. A second grooved contact device (wheel) E' is mounted on the upper side of the arm D a short distance in advance of the wheel E. This wheel is mounted in ears d d , which project upward from the top side of the same metal end d' of the arm D on which the wheel E is mounted. This metal end is preferably separable from the arm D, having a socket into which that arm extends. The ears d and the furcated end in which the wheel E is journaled are formed integral with said metal end. The wheel E' is placed in such position relative to the wheel E that when the latter wheel is engaging with one of the conductor-wires the wheel E' is below the plane of the wire, and it is far enough below said plane to permit the said wheel E' to pass under the wire while the wheel E maintains its contact with the wire; but at the same time it must be so near to the plane of said wire that when the wheel E runs under the arched part c^4 of the connecting member, whereby the end of the trolley is permitted to move upward, the wheel E' will engage with the conductor-wire before the wheel E strikes the arched top c^4 of the said connecting member.

The described construction of trolley and conductor coöperate in the following manner: Normally the wheel E contacts with the conductor, and the wheel E' is below said conductor. If the trolley is being carried in the direction from right to left, as shown in the drawings, and a car continues upon the main track, which is beneath the conductors A A', the wheel E' will be under the conductor A' when the wheel E runs off the end of the conductor A. The end of the trolley-arm rises a little, and the wheel E' immediately makes contact with the conductor A'. The wheel E presently strikes the inclined surface of the connecting member, is forced down thereby, and passes into engagement with the same conductor A'.

When the car passes onto the branch track below conductor B, it drags the trolley-arm with it, whereby before the wheel E reaches the end of conductor A the trolley-arm has been swung around into the position relative to the conductors A and B, as shown in Fig. 2, in which position the wheel E' is under the conductor B. When the wheel E runs off the end of conductor A and the arm swings upward, the wheel E' will engage with conductor B. The wheel E necessarily moves in the same direction, and presently it engages with the connecting member, is forced down thereby, and then engages with the branch conductor B.

It is clear that the specific construction of the connecting member which the drawings show is not essential to the described operation of the trolley shown. In fact, Fig. 2 shows a construction which will be operative provided some means were provided for holding the conductors in the relative position shown. It is necessary, however, that the main conductor should not be continuous in the same horizontal plane. It must either end abruptly or be bent upwardly near the point at which the branch wire would join it. At some suitable distance from this point the two diverging conductors must begin.

The connecting member shown is a thoroughly practical and convenient means for

holding the conductors in the desired relative positions. The distance between the two wheels E E' may be varied, always having in mind that they must be near enough together to span the distance between the end of conductor A and the ends of conductors A' and B, whereby when wheel E runs off one conductor and the arm D swings upward the other wheel E' will engage with one of the other conductors.

Having described my invention, I claim—

1. The combination of the conductor A and the diverging conductors A' B, all held in the same approximately horizontal plane, except that at and near the point where said conductors would meet, they are turned out of their normal course whereby the trolley-path is interrupted and the trolley-arm allowed to ascend somewhat, combined with a trolley-arm and two grooved contact devices carried one in advance of the other by said trolley-arm, one of said contact devices being below the other when the trolley-arm is in normal operative position, substantially as and for the purpose specified.

2. The combination of the conductor A and the diverging conductors A' B, all held in the same approximately horizontal plane, except that at and near the point where said conductors would meet, they are discontinued or elevated, combined with a trolley-arm and two grooved contact devices carried thereby, one being in advance of and below the other, when the trolley-arm is in the normal operative position, substantially as and for the purpose specified.

3. In a trolley, in combination, the arm D, the separable metal end *d'* furcated at its end and having the integral ears *d* projecting from its side, the wheel E journaled in said furcated end and the wheel E' journaled in said ears, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THORSTEN VON ZWEIFBERGK.

Witnesses:

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