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Patented Aug. 6, 1901.

K. DE KANDÓ.
ELECTRICAL CONTACT APPARATUS.

(Application filed Dec. 31, 1900.)

(No Model.)

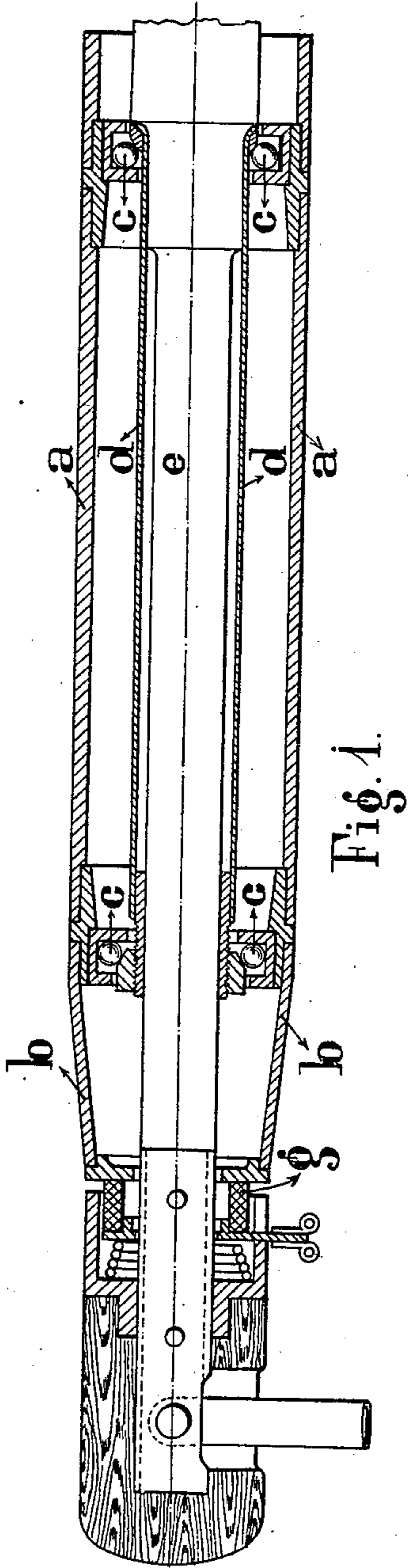


Fig. 1.

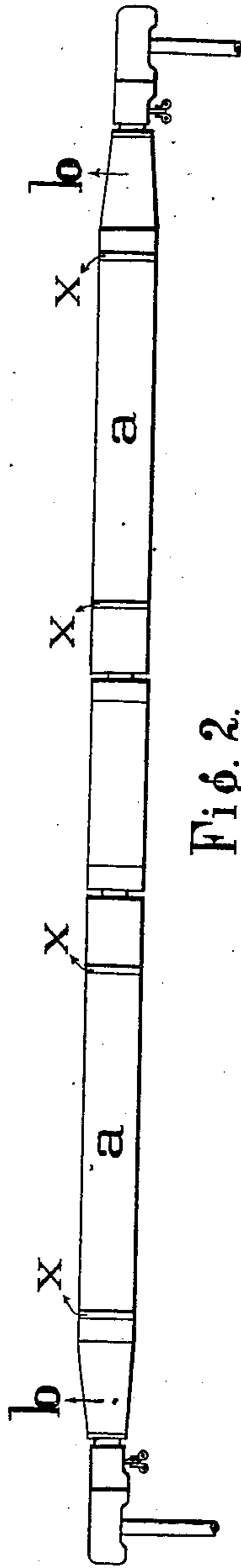


Fig. 2.

WITNESSES:

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ELECTRICAL CONTACT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 680,134, dated August 6, 1901.

Application filed December 31, 1900. Serial No. 41,653. (No model.)

To all whom it may concern:

Be it known that I, KOLOMAN DE KANDÓ, electrical engineer, of Klotidutóra 22, Budapest, in the Empire of Austria-Hungary, have
5 invented certain new and useful Improvements in Electrical Contact Apparatus for Use in Trolleys, of which the following is a specification:

In the construction of electrical roller con-
10 tacts one of the drawbacks to the employment of ball-bearings or roller-bearings is that such bearings will only act properly if the surfaces of the balls, rollers, and bearings are perfectly smooth. However, the current
15 passing from the rotating part of the contact through the pivot-cushion to the stationary part, or vice versa, burns the rolling-surfaces of the bearings in places, especially if during stoppage a powerful current is drawn off, the
20 rolling-surfaces become soft, and rapid wearing of the bearings results. The present invention removes this disadvantage by the fact that the passage of the current through the bearing is interrupted by means of insula-
25 tion, which is effected by constructing the bearing itself of electrically-non-conductive material or by insulating the bearing either from the stationary part or from the rotating part or from both and conducting the current from
30 the rotating part to the stationary part, or vice versa, by means of a suitable separate contact. One form of this construction is represented in the annexed drawings.

Figure 1 is an enlarged sectional view, and
35 Fig. 2 is side elevation showing compound contacts.

A cylindrical roller contact *a*, with taper-
ing end *b*, is mounted upon two ball-bearings
40 *c c*, fixed to a metal tube *d*. The said tube *d* is placed upon an insulating-rod *e*, which may consist of wood or other suitable non-conductive material. Between the rolling cylinders of the contact and the electrically-conductive part of the device a separate an-

nular sliding contact *g*, which may consist of 45 carbon or graphite, produces conductive connection. The said separate contact *g* fits against the correspondingly-shaped end of the conical part of the cylinder *a*, against which it is pressed by a spring. The same 50 construction is suitable for compound contacts, as will be seen in Fig. 2, in which the various contacts are designated *a* and the places where the ball-bearings are provided by *x*. 55

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination, the roller contact part, 60 an insulating-rod within the said roller contact part, the ball-bearings between the roller contact part and the insulating-rod and the sliding contact part bearing against the rolling contact part, substantially as described. 65

2. In combination, the rolling contact part 70 *b*, the insulating-rod *e* within the same, the tube *d* carried by the rod within the rolling contact part, the ball-bearings between the rolling contact part and the tube *d*, a contact bearing against the end of the rolling contact and a spring for pressing the said con- 75 tacts, substantially as described.

3. In combination, the roller contact part, 80 an insulating-rod within the said roller contact part, the ball-bearings between the roller contact part and the insulating-rod and the annular sliding contact *g* fixed concentrically to the insulating-rod and pressed by a spring in axial direction against the side faces of 85 the rolling contact part, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

KOLOMAN DE KANDÓ.

Witnesses:

EUGENE FLORRONY,
FRANK DYER CHESTER.