

C. LE G. FORTESCUE.
INSULATING TUBE.
APPLICATION FILED JUNE 9, 1910.

984,129.

Patented Feb. 14, 1911.

Fig. 1.

Fig. 2.

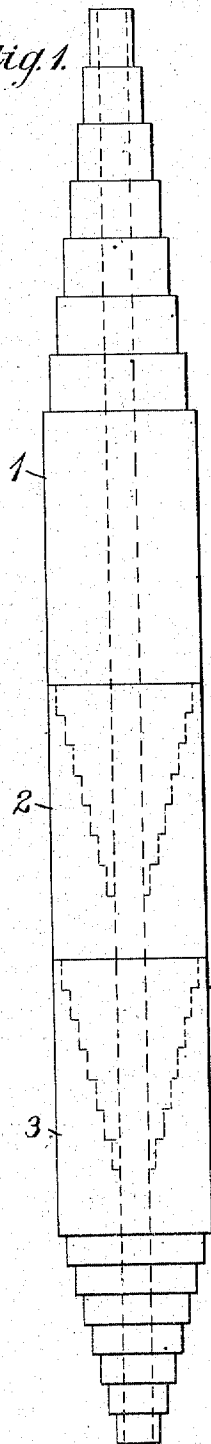
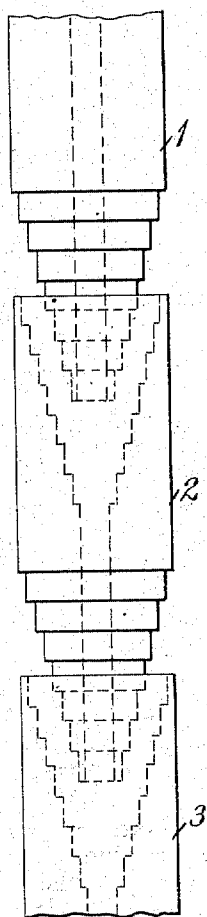


Fig. 3.

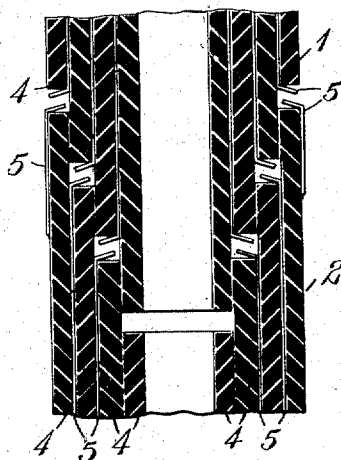
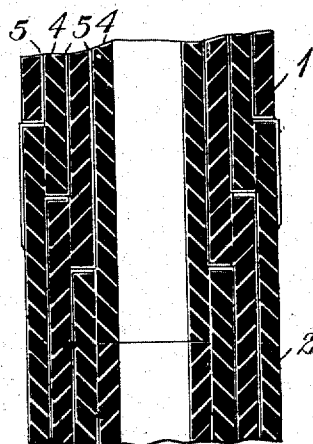


Fig. 4.



WITNESSES:

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CHARLES LE G. FORTESCUE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

INSULATING-TUBE.

984,129.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed June 9, 1910. Serial No. 566,102.

To all whom it may concern:

Be it known that I, CHARLES LE G. FORTESCUE, a subject of the King of Great Britain, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Insulating-Tubes, of which the following is a specification.

My invention relates to insulating tubes or bushings and it has special reference to so-called condenser-type insulating bushings, such as that shown and described in Patent No. 952,513, granted March 22, 1910 to the Westinghouse Electric & Manufacturing Co., upon an application filed by James C. Dow.

The object of my invention is to provide a structure, of the class above indicated, that shall comprise a plurality of sections so arranged that the insulating properties of the tube or bushings are not impaired, in order that bushings of comparatively great length may be constructed with a minimum expense.

It is sometimes desirable to make an insulating sleeve or bushing of such great length that it is very difficult to utilize the method of construction set forth in Patent No. 858,385, granted July 2, 1907 to the Westinghouse Electric & Manufacturing Co., upon an application filed by Emil Haefely, for the reason that the length of the mandrel and the width of the paper must equal the length of the tube desired.

According to my present invention, I utilize the Haefely method and I interpose layers of conducting material at suitable intervals, as set forth in the Dow Patent, above referred to. When I have made several comparatively short tubes in the manner specified, I prepare the ends of one member by cutting a series of steps thereon and hollow out the adjacent end of the member which is to be assembled next to it so that the one may fit into the other, the ends of the conducting layers of adjacent members being brought together so that the continuity of the conducting plates may be maintained.

Figure 1 of the accompanying drawings is an elevation of a tube or bushing constructed in accordance with my invention. Fig. 2 is a similar view of a portion of the same bushing with its segments slightly separated in order to make the form of each

section clear. Fig. 3 is a sectional view, on a larger scale, of a fragment of the tube shown in Figs. 1 and 2, and illustrating the arrangement of insulating and conducting layers at the joints between segments, and Fig. 4 is a similar view in which the two segments are shown in their assembled position instead of slightly separated, as in Fig. 3.

Referring to the drawings, the insulating tube or bushing here shown comprises a plurality of segments 1, 2 and 3, each of which is built up of alternate layers 4 and 5 of insulating and conducting materials, as shown in Figs. 3 and 4. The ends of the segment 1 are stepped by turning off the insulating layers at unequal lengths so as to expose the ends of the conducting layers and at the same time keep them separated by a surface distance greater than the direct distance between them. The innermost insulating layers of segment 1 are longest, each layer being shorter than the one directly within it, as shown in Fig. 1. Section 2 of the insulator is stepped at one end but at the opposite end it is hollowed out so that the stepped end of section 1 may fit into it.

The arrangement of layers at the joint is shown in Figs. 3 and 4. It is evident that the diameters of the conducting layers for the two sections which are connected are unequal, this arrangement being preferable in order to provide a greater surface distance between adjacent conducting layers. The electrical connection between conductors is established by bending back the edges of the conducting plates where they extend beyond the nonconducting layers, those of one section being bent outwardly and those of the adjacent section inwardly so that they may be brought firmly into engagement with each other when the two sections are assembled, as shown in Fig. 4.

The joint between sections 3 and 2 is similar to that between sections 2 and 1 and therefore need not be described in detail. Other sections may obviously be added, within the spirit and scope of my invention, and the structure may be otherwise modified to suit the conditions of service and the voltage for which the tube is intended to insulate.

I claim as my invention:

1. An insulating tube or bushing compris-

ing a plurality of telescoping sections, each comprising alternate layers of insulating and conducting materials.

5 2. An insulating tube or bushing comprising a plurality of telescoping sections each comprising alternate layers of insulating and conducting materials, the conducting layers of adjacent sections being severally connected when the sections are assembled.

10 3. An insulating tube or bushing comprising a plurality of telescoping sections having stepped engaging surfaces, each section comprising alternate layers of insulating and conducting materials and the ends of
15 the conducting layers being so formed as to establish electrical connections between the conducting layers of adjacent sections when the sections are assembled.

20 4. An insulating tube or bushing comprising a plurality of telescoping sections severally consisting of alternate conducting and

insulating layers; the ends of the conducting layers being bent laterally across the adjacent ends of insulating layers to make contact with each other when the sections 25 are assembled.

5. An insulating tube or bushing comprising a plurality of telescoping sections severally consisting of alternate conducting and insulating layers, the adjacent ends of conducting layers being bent laterally in opposite directions across the ends of insulating layers to make contact with each other when the sections are assembled.

In testimony whereof, I have hereunto 35 subscribed my name this 27th day of May, 1910.

CHARLES LE G. FORTESCUE.

Witnesses:

R. J. DEARBORN.

B. B. HINES.