

No. 778,005.

PATENTED DEC. 20, 1904.

C. BOOKER.  
ELECTRIC INSULATOR.  
APPLICATION FILED FEB. 1, 1904

NO MODEL.

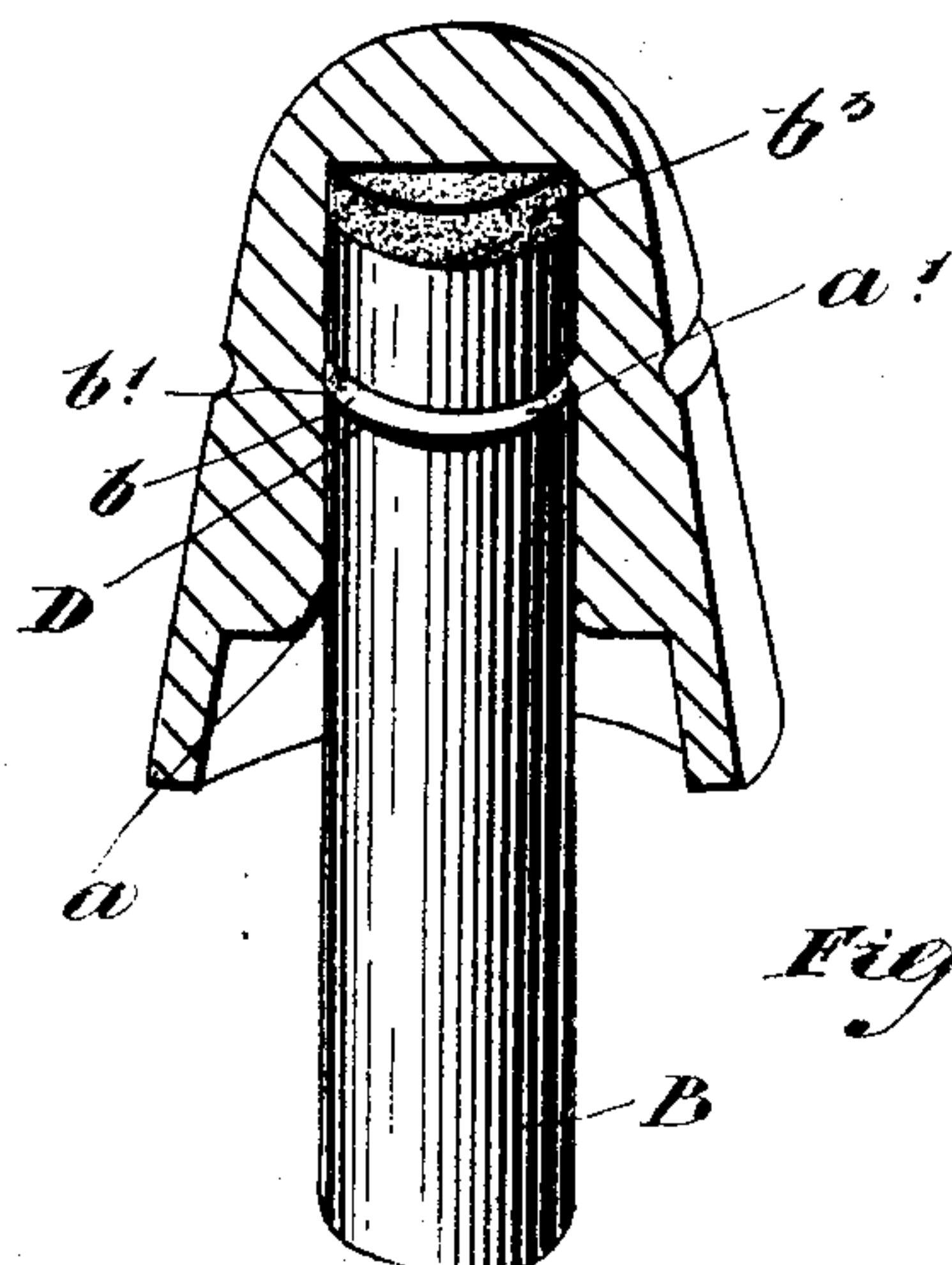


Fig. 1.

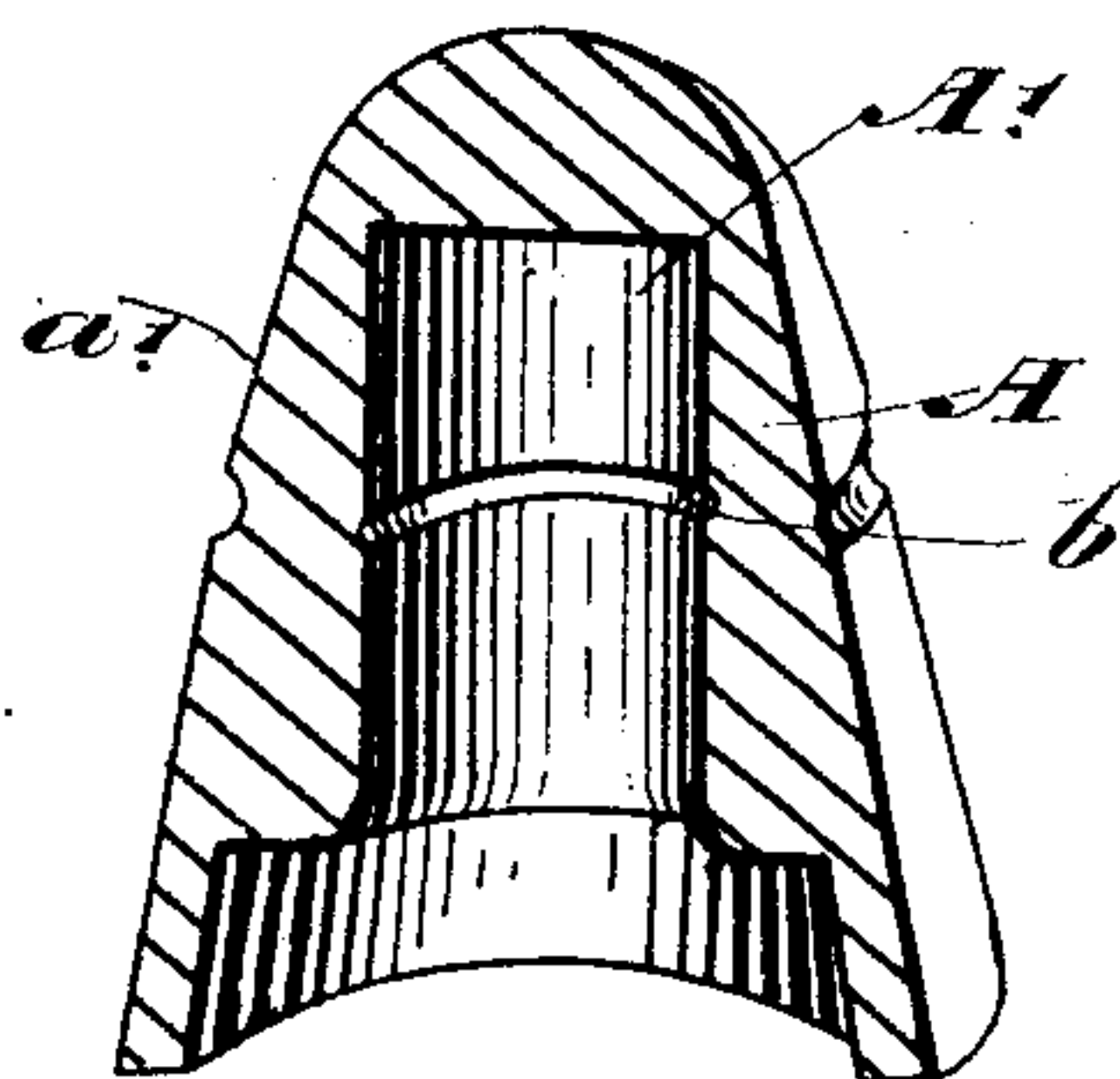


Fig. 3.

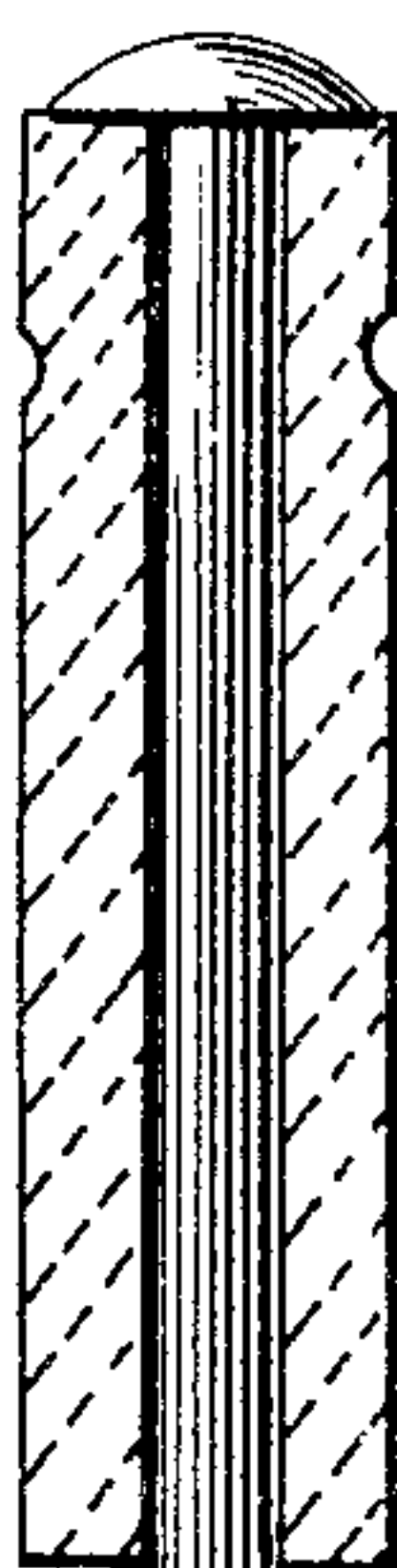


Fig. 2.

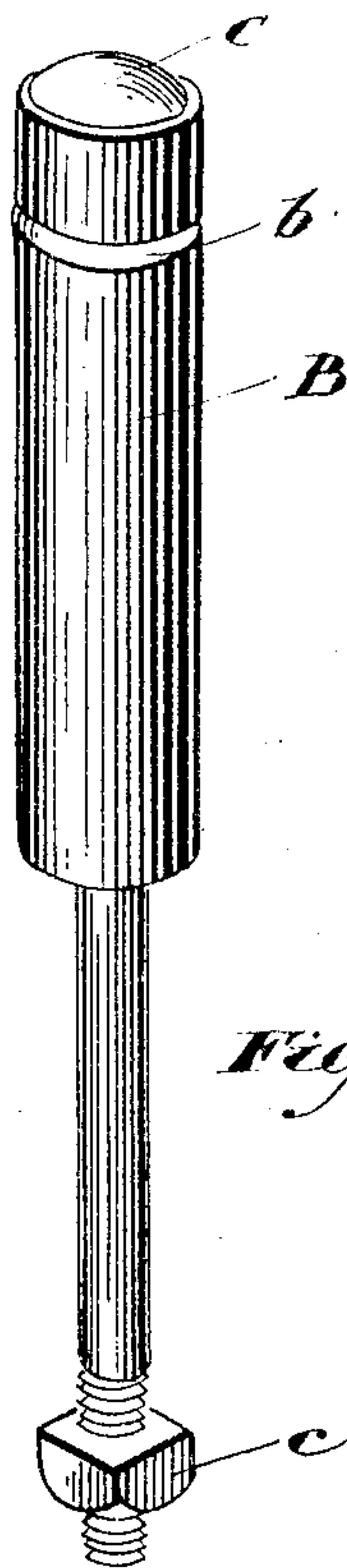


Fig. 4.



Fig. 5.

Witnesses.  
A. B. Bate.  
A. Hewlands.

Inventor:  
Charles Booker  
By  
Wm. B. Fitchman  
Att'y.

# UNITED STATES PATENT OFFICE.

CHARLES BOOKER, OF TORONTO, CANADA.

## ELECTRIC INSULATOR.

SPECIFICATION forming part of Letters Patent No. 778,005, dated December 20, 1904.

Application filed February 1, 1904. Serial No. 191,546.

*To all whom it may concern:*

Be it known that I, CHARLES BOOKER, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented  
5 certain new and useful Improvements in Electric Insulators, of which the following is a specification.

My invention relates to improvements in electric insulators particularly used for line-  
10 wires; and the object of the invention is to devise a simple, durable, and secure means for attaching the insulator to the pin; and it consists, essentially, of an insulator having a cylindrical hole provided with an internal groove  
15 intermediate of its length, a pin having a bolt extending therethrough and an annular groove formed on its exterior periphery, and a spring-ring designed to be located in such groove and spring into the groove in the cy-  
20 lindrical hole when the pin is fitted into the insulator, a suitable washer being provided at the head of the pin to take up the slack between the spring-rings and the grooves and the parts being arranged and constructed in  
25 detail as hereinafter more particularly explained.

Figure 1 is a sectional perspective view showing my improved insulator. Fig. 2 is a sectional perspective view of the insulator  
30 proper. Fig. 3 is a longitudinal section through the pin and bolt. Fig. 4 is a perspective view of the pin and bolt. Fig. 5 is a detail of the split or divided ring.

In the drawings like letters of reference in-  
35 dicate corresponding parts in each figure.

A is the insulator, which is made of glass, porcelain, or any other suitable material and is provided with the usual exterior groove whereby the line-wire may be attached thereto  
40 in the usual manner. The insulator is of the usual hood-shape form and is provided with a cylindrical hole A', having an internal annular groove a'.

B is a pin which is preferably made of wood  
45 or any other suitable material and is made substantially the diameter of the cylindrical hole A', being, however, sufficiently loose so that it will fit it snugly and yet not tightly. The periphery of the pin B is provided with

an annular groove b, which has a square shoulder b' at the outside and is of a taper or substantially wedge-shape form b<sup>2</sup> toward the inner side of the groove.

C is a bolt which extends through an orifice in the center of the pin B, the head of the  
55 bolt being at the top and the bolt being designed to extend through the cross-piece which carries the insulator. A suitable nut c is provided at the bottom of the bolt, so as to secure the pin B against the cross-piece, (not  
60 shown,) and thereby hold the insulator in an upright position.

D is a divided ring which is placed within the annular groove b in the pin B.

It will be noticed that the lower end of the  
65 cylindrical hole A has a flaring mouth a<sup>2</sup>. To fit the insulator on the pin, the spring-ring D is sprung into the groove b over the pin B and a washer, of felt or other suitable flexible or yielding material, b<sup>3</sup>, is placed at  
70 the top of the cylindrical hole. The pin B, with the ring in place, is then forced into the cylindrical hole A' until the groove b comes opposite the groove a', when the spring-ring  
75 will spring into the groove a', the ring being of sufficient thickness so that it will extend partially into the groove b and partially into the groove a' circumferentially, and thereby hold the insulator proper securely in position,  
80 the washer b<sup>3</sup> serving to take up the slack between the spring-ring D and the grooves a' and b.

The form of the groove b, with the square shoulder b', serves to hold the divided ring D in place as the pin B is pushed into the cylin-  
85 drical hole A', and the wedge-shaped shoulder b' serves to wedge the ring securely in position between the groove b and the groove a' by the pin being pushed slightly outwardly by the resiliency of the washer b<sup>3</sup>.  
90

It will thus be seen that the insulator A will be securely held in place and yet will of course be permitted to turn without any danger of breaking the insulator, which is one of the defects in the common form of screw-pin  
95 and insulator now commonly used.

As the pin does not need to fit the cylindrical hole closely, the same as in the common



form above referred to, it will be readily seen that the liability of the insulator cracking or breaking is avoided.

What I claim as my invention is—

5 1. An insulator comprising a hood of insulating material having a cylindrical hole provided with an annular groove intermediate of its length, a cylindrical pin fitting into the hole and provided with an annular groove de-  
10 signed to be brought opposite the annular groove in the wall of the cylindrical hole, a divided spring-ring designed to be sprung, so as to partially fit in each groove and a resilient washer between the head of the pin and  
15 the top of the hole as and for the purpose specified.

2. The combination with the hood of insulating material provided with a cylindrical hole and a pin fitting therein, of spring means

for holding the pin within the hole, and a re- 20  
siliant washer between the top of the pin and the top of the hole, so as to take up any slack in the spring connection as and for the purpose specified.

3. The combination with the insulating- 25  
hood having a cylindrical hole, of a pin fitting into the cylindrical hole and provided with an annular groove, a divided ring fitting partially into each annular groove, and the bolt extending through the pin and having the head 30  
thereof resting on the top of the pin, and a spring-washer extending between the head of the bolt and the inner end of the cylindrical recess as and for the purpose specified.

CHARLES BOOKER.

Witnesses:

M. McLAREN,

E. B. MATTHEWS.