

No. 732,088.

PATENTED JUNE 30, 1903.

K. S. LEMSTRÖM.
INSULATOR FOR HIGH TENSION CURRENTS.

APPLICATION FILED SEPT. 9, 1902.

NO MODEL.

FIG. 1.

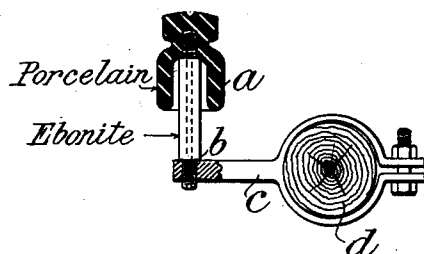
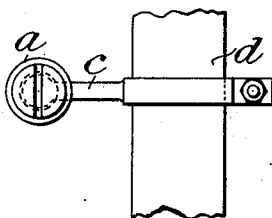


FIG. 2.



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INSULATOR FOR HIGH-TENSION CURRENTS.

SPECIFICATION forming part of Letters Patent No. 732,088, dated June 30, 1903.

Application filed September 9, 1902. Serial No. 122,728. (No model.)

To all whom it may concern:

Be it known that I, KARL SELIM LEMSTRÖM, a subject of the Grand Duke of Finland, Emperor of Russia, residing at Helsingfors, Finland, Russia, have invented certain new and useful Improvements in Insulators for High-Tension Currents, of which the following is a specification.

The ordinary porcelain insulators fastened on iron rods, which are commonly used for supporting telegraph and telephone wires, suffice for currents of low tension; but for currents of higher tension—as, for example, the currents generated by influence-machines—these ordinary insulators occasion too great a loss of current by reason of the outer and inner faces of the insulator becoming moistened, and thereby forming a path for the escape of some of the current from the wires to the earth.

The present invention aims to provide an insulator which is especially adapted for use in connection with influence-machines generating currents of high tension and in which it is especially desirable to provide against the loss of any portion of the current.

My improved insulator is also especially advantageous in wet weather and at such times of day as the dew falls.

The working efficiency of my improved insulator approaches very closely that of the so-called "sulfuric-acid" insulator, in which the current can only pass from the wire to the insulator-support by passing through sulfuric acid.

The accompanying drawings illustrate an embodiment of the invention, in which—

Figure 1 is a side view of the same partly in section. Fig. 2 is a plan of the same.

According to my invention the insulator comprises a rod of highly-polished ebonite or material of higher insulating power, and at the upper end of this support a bell of weatherproof material, such as porcelain or the like, which is connected to said rod by a screw connection, as shown. By means of this construction the current which might escape by way of the moistened surface of the porcelain bell is interrupted by the ebonite support, to the polished surface of which water does not adhere, while the porcelain bell acts to protect the ebonite from the deterior-

ating effects which are usually caused in the polish of ebonite by exposure to the weather.

Referring now to the drawings, the porcelain insulator *a* is shown of ordinary bell form, but is not, as in the usual construction, fastened directly to an iron support. On the contrary, it is mounted directly on a rod *b*, of ebonite, interposed between the porcelain bell and the iron clamp *c*. Preferably, as shown, the iron clamp *c* is provided with an extending arm, at one end of which the ebonite rod is screwed into it, while at the other end it is formed into a clamping-ring, by means of which the entire insulator is fastened to a post, frame, or the like. The distance between the lower edge of the porcelain bell *a* and the iron clamp *c* may be about four centimeters or more. It should be great enough to avoid accidental escape of current directly from the bell to the iron clamp, but not greater than necessary, so that it may protect as far as possible the ebonite rod *b*. The porcelain bell, which is a common article of commerce and very cheap, serves especially as a protector for the ebonite rod and protects it not only against rain and dampness in general, but also against dew and other moisture which is generated by the increased coolness caused by radiation. The porcelain bell also protects the ebonite to a considerable extent against deformation or like injury which might be due to the softening of the ebonite under an exposure to excessive heat from the sun and to the weight of the wires supported by the insulator and exerting both vertical and lateral strains thereon. A porcelain or similar bell serves this purpose much better than would a bell of similar shape formed of ebonite directly on the upper part of the rod *b*, since the latter structure would be of comparatively short-lived usefulness. In order to preserve its high insulating power, ebonite needs to be polished, and this polish is destroyed by exposure to the weather to such an extent that it would no longer be practically useful in insulating high-tension currents. Furthermore, the combination of porcelain and ebonite described is much cheaper than would be a structure composed entirely of ebonite.

Though I have described with great particularity of detail an insulator embodying

my invention, yet it is to be understood that the invention is not limited to the specific insulator described. Various modifications thereof are possible to those skilled in the art without departure from the invention.

What I claim is—

An insulator for high-tension currents, comprising in combination a supporting-arm, a rod of polished ebonite of comparatively high insulating power as compared with porcelain connected by a screw connection to said arm, a porcelain bell of comparatively high weather-resisting quality as compared with ebonite on the upper end of said rod extending downward over the same as near to the arm as is possible without danger of an escape of current to the arm, and

connected to said rod by a screw connection whereby said ebonite interrupts the current tending to escape by way of the moist surface of said porcelain bell, and said bell protects the rod of ebonite and especially the polished surface thereof from the effects of the weather, from softening by the sun's heat, and from cooling by radiation, said rod through its non-hygroscopic qualities resisting the moistening by dew and mist.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

KARL SELIM LEMSTRÖM.

Witnesses:

F. KOLSTER,
L. A. GROSS.