(No Model.)

F. B. GRIMM & J. H. NESSLER.

INSULATOR.

No. 590,832. Patented Sept. 28, 1897.

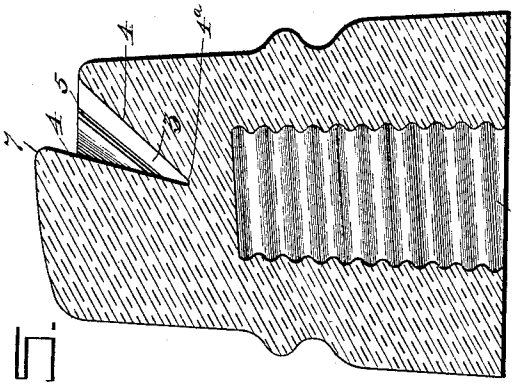


FIG. 1.

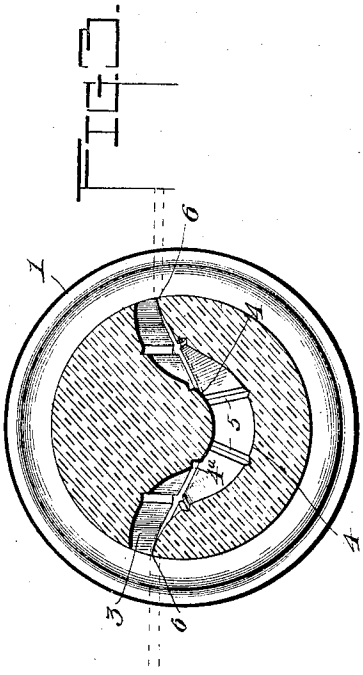


FIG. 5.

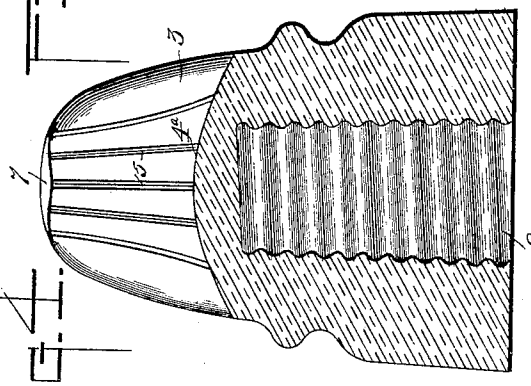


FIG. 4.

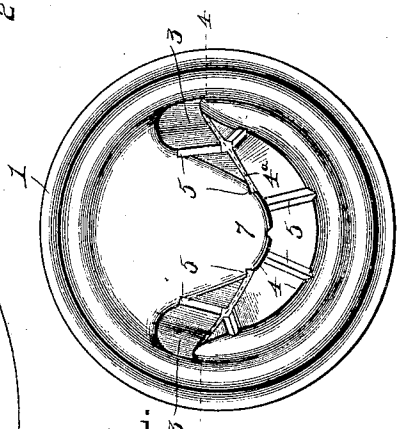


FIG. 2.

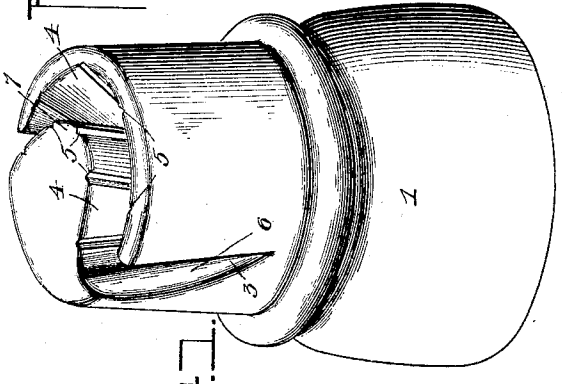


FIG. 3.

Witnesses
W. J. Lavarre,
D. C. Hollaupeter

Inventors
Fred B. Grimm and
John H. Nessler.

By their Attorneys,
C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRED B. GRIMM AND JOHN H. NESSLER, OF QUINCY, ILLINOIS.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 590,832, dated September 23, 1897.

Application filed January 4, 1897. Serial No. 617,940. (No model.)

To all whom it may concern:

Be it known that we, FRED B. GRIMM and JOHN H. NESSLER, citizens of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented a new and useful Insulator, of which the following is a specification.

This invention relates to insulators for use on poles in connection with telegraph, telephone, and electric-light wiring, and has for its special object the provision of means for tightly securing the wire to the insulator without the use of the extra tie-wire which is commonly employed for this purpose.

The invention also contemplates an improved construction of insulator which insures a secure binding of the wire in place, while at the same time obviating sharp kinking or straining of the wire, and also relieves the pin supporting the insulator from the side stress or strain which is an incident to the use of the side-tie wire usually employed for fastening the wire in the groove of the insulator.

A further object of the invention is to so construct the insulator as to provide a perfect drainage or shedding of water to lessen the waste of the electric currents and prevent corrosion of the wire.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of an insulator constructed in accordance with this invention. Fig. 2 is a plan view thereof. Fig. 3 is a cross-sectional view of the insulator. Fig. 4 is a vertical sectional view on the line 4 4 of Fig. 2, the line of section following the sigmoidal or ogee curvature of the wire-receiving groove. Fig. 5 is a vertical sectional view of the insulator.

Referring to the accompanying drawings, 1 designates the body of the insulator, which is preferably made of glass, but of course may be made of any other suitable non-conducting material. The glass insulator-body 1 is made in substantially the same shape as the insulators in common use and is provided in its lower end with the usual threaded socket 2, which engages with the threaded pin of the cross-arm of the pole in the ordinary manner, such connection being the common way of fastening insulators on telegraph and similar poles.

In the present invention the upper end of the insulator-body 1 is indented with a deep vertical transverse wire-receiving groove 3, which groove, while extending in a transverse direction across the insulator-body, has a sigmoidal or ogee curvature to provide for bending or kinking the wire sufficiently to prevent it pulling or drawing out of place after having once been inserted and pressed downward within the groove. The deep vertical transversely-extending sigmoidal groove 3 is provided with opposite downwardly-convergent side walls 4, which converge in a direction toward the vertical center of the insulator-body, so as to dispose the wire, which is inserted in the groove, as nearly as possible at the transverse vertical center of the body, whereby the cross-arm pin on which the insulator is fastened is relieved of the side stress or strain incident to the use of the usual extra side ties.

The downwardly-convergent side walls 4 of the wire-receiving groove 3 produce a groove that is V shape in vertical section to adapt the same for receiving and gripping any gage of wire, and the vertex or base 4^a of the groove declines in opposite directions toward the opposite sides of the insulator-body to provide a perfect drainage or shed for water that runs into the groove, and the said opposite downwardly-convergent side walls 4 of the wire-receiving grooves are provided with a plurality of upright channels 5, that serve to deliver the water freely into the bottom of the groove 3, whence it readily escapes at the ends of the groove, which ends of the groove terminate at opposite sides of the insulator-body in inclined slots 6.

The central portion of one of the walls 4 of the wire-receiving groove is rounded, as at 7, and projects above the plane of the top edge of the opposite wall to form a bearing-knob against which the wire can be pressed and bent to conform to the shape of the groove, and thereby facilitate the ready insertion of the line-wire into the groove, after which insertion the wire is forced downward, so as to

be wedged firmly in place. To insure a secure binding of the line-wire in the groove, the ends of such groove are more sharply curved than the intermediate major portion of the groove, as clearly illustrated in Fig. 3 of the drawings.

From the foregoing it is thought that the construction and use of the herein-described insulator will be readily apparent, and at this point it is to be further observed that while the ordinary extra tie-wire is dispensed with, yet the line-wire can be quickly and readily attached to the insulator and also released therefrom.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. An insulator provided in its top with a transverse sigmoidal wire-receiving groove having downwardly-convergent side walls formed with a plurality of upright channels, substantially as set forth.

2. An insulator provided in the top thereof with a deep vertical sigmoidal wire-receiving groove having downwardly-convergent side walls converging in a direction toward the vertical center of the insulator-body, substantially as set forth.

3. An insulator provided in the top thereof with a vertical transverse wire-receiving groove having a sigmoidal curvature and downwardly-convergent side walls, the vertex or base of the grooves declining in opposite directions toward the ends thereof, substantially as set forth.

4. An insulator provided in the top thereof with a deep vertical sigmoidal wire-receiving groove having downwardly-convergent side walls formed with a plurality of upright channels, the vertex of the groove declining in opposite directions, and the central portion of one of the walls being rounded and projected above the plane of the top edge of the opposite wall, substantially as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FRED B. GRIMM.
JOHN H. NESSLER.

Witnesses:
THOS. GORDON,
CARL E. WEBER.