(No Model.)

E. T. GREENFIELD.

INSULATOR.

No. 369,447. Patented Sept. 6, 1887.

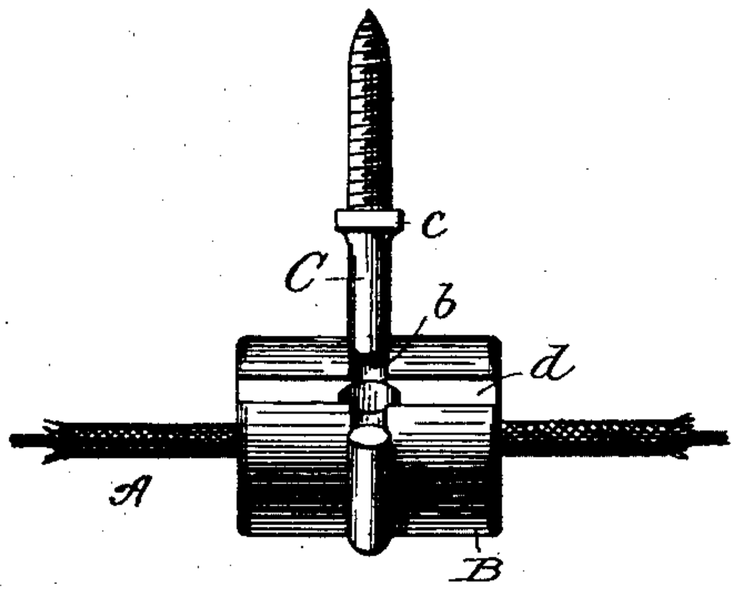

Fig. 1.

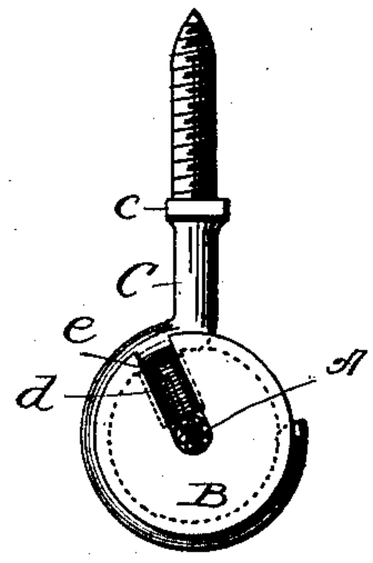

Fig. 2.

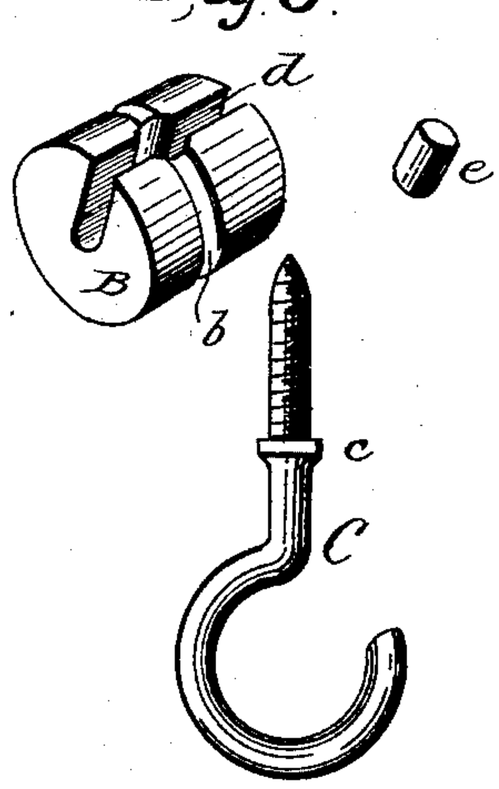

Fig. 3.

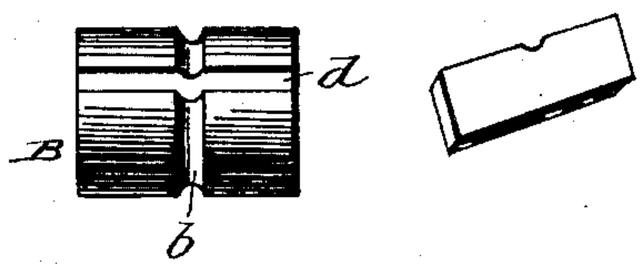

Fig. 4.

WITNESSES:

Wm. C. Rosenbaum

Chas. A. Seal.

INVENTOR

Edwin T. Greenfield.

BY W. J. Johnston

ATTORNEY.

UNITED STATES PATENT OFFICE.

EDWIN T. GREENFIELD, OF NEW YORK, N. Y., ASSIGNOR TO GREENFIELD & CO., OF SAME PLACE.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 369,447, dated September 6, 1887.

Application filed March 4, 1887. Serial No. 229,690. (No model.)

To all whom it may concern:

Be it known that I, EDWIN T. GREENFIELD, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Insulating Supports for Electrical Conductors; and I do hereby declare that the following is a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a substitute for that type of glass or porcelain insulator which is commonly employed in the stringing of electric-light wires or other electrical conductors. My device is especially adapted to take the place of such insulators on the inside of buildings, where they are applied to the ceilings of rooms.

It is customary in stringing wires along the ceiling to put up cleats or other supports at regular intervals and to attach the insulators to these supports. These cleats in themselves are unsightly; but aside from that, owing to the fact that the insulators of the class of which I speak require that the wire be wound around it, it is almost impossible to make the wire follow the same line in approaching and leaving a given insulator. This also makes the completed work offensive to the eye. Moreover, by the bending of the insulated wire the insulation is often injured, so that the bare wire is exposed; or, if not that, the insulating-covering is so far broken as to allow moisture from the support to come into contact with the wire and so cause a leak. The fact, also, that the body of the insulator usually lies flat against its support tends further to increase the danger from this cause. The body of my insulator is also made, preferably, of porcelain or glass, although it may be constructed of any other suitable insulating material. Instead, however, of bringing the porcelain into contact with its support, I cause it to be separated therefrom, after it is put in place, by a considerable space. Besides, it is not necessary with my insulator to wind the wire around it. On the other hand, a groove is left in the insulator into which the wire can be laid, and after being laid it can be held firmly in place by means which will be described hereinafter. This construction and arrangement of insulator does away with the danger of getting the wire out of a true alignment, and also prevents the danger of abrading or breaking the insulating-covering of the wire.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my insulator. Fig. 2 is an end elevation of the same. Fig. 3 is a detail view, and Fig. 4 shows a modification of one of the parts.

A is an insulated electrical conductor, and B an insulating support therefor. The insulator B is of cylindrical shape, and is provided with a groove, *b*, around its periphery, into which groove is bent the lower end of a supporting-screw, C. The bent portion of the said screw does not form a complete circle, but it extends far enough to hold the insulator secure from falling out, without preventing its being turned within the ring or bent portion. The insulator is also provided with a radial groove, *d*, extending from center to circumference. This groove is of different widths in different insulators, being graduated to the sizes of different electrical conductors which are likely to be used with the insulators. The groove *d* is designed to receive the insulated conductor, and before the said conductor is inserted in place the insulator will be so turned within the ring of the screw C as to cause the said groove to lie across the open portion of the ring. This position is shown in Fig 1. At its middle portion the groove *d* is enlarged slightly and rounded out, so as to be fitted by a round pin or plug, *e*, of somewhat larger diameter than the width of the groove. The pin is preferably made of wood or some other insulating substance which will yield slightly under pressure. It is rounded at the top, and after it is put in place over the insulated wire the top portion extends slightly above the bottom of the groove *b*. After the parts are in this position the operator takes the insulator by the ends and turns it into the position shown in Fig. 2—that is, he turns it so that the mouth of the groove *d* is covered by the ring, and so that the pin *e* is pressed down upon the inclosed wire. The pin *e*, being larger in diameter than the width of the groove, is in no danger of being drawn out by

the slipping of the wire; nor is the wire likely to slip, owing to the pressure upon it.

It will be observed that the screw C is provided with a shoulder, *c*, at some distance above the point where it is bent to form the ring. This shoulder will rest against the ceiling, and there will always be between the ceiling and the insulator a space not less than that which is represented by the distance of the shoulder above the bend. Thus there is little danger of moisture from the ceiling being communicated to the wire in the insulator. Moreover, the wire is at all points separated by the radius of the insulator from any part of the screw C.

In putting up electrical wires in a building with insulators such as I have now described, the insulators are first put up in a straight line along the ceiling, each insulator being left in the position illustrated in Fig. 1, with the plug or pin taken out. Of course any variations from a straight line which may become necessary in the wiring of a building can also be brought about by turning my insulators to the proper angle. The insulators being screwed in place, the wire is simply laid in the longitudinal groove of successive insulators, the operator inserting the plugs and turning the insulators in their rings as he goes along. When the work is completed, all the insulators occupy the position illustrated in Fig. 2.

Instead of cutting the groove *d* larger in the middle and inserting the round plug *e*, I may leave the groove straight and insert a plug which fits approximately the whole groove. In this case I shall make a groove at the top of the plug corresponding to the groove *b*, so as to prevent the plug from being withdrawn by the pull of the wire. The modification here indicated is shown in Fig. 4.

Having now described my invention, what I claim is—

An insulating-block provided with a slot for carrying the conducting-wire and with a plug for holding the wire in place, also with a peripheral groove to receive the hanger, in combination with a hanger consisting of a ring having less than half of its body cut away and provided with a screw-threaded shank, the ring portion adapted to fit in the peripheral groove of the block and allow the block to rotate within it, substantially as described.

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

EDWIN T. GREENFIELD.

Witnesses:
AUGUSTUS MERRITT,
WM. A. ROSENBAUM.