

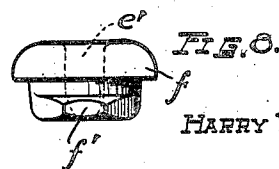
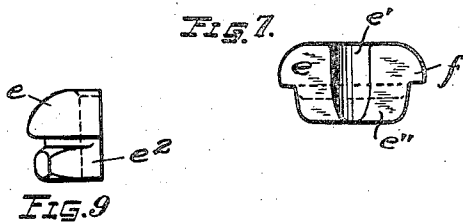
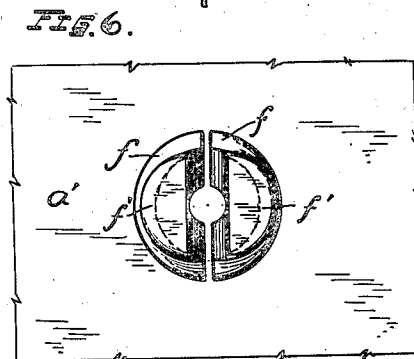
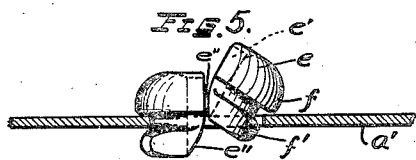
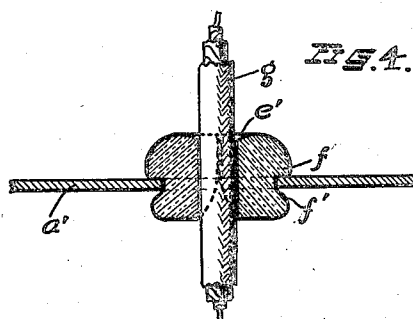
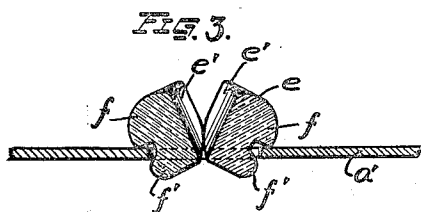
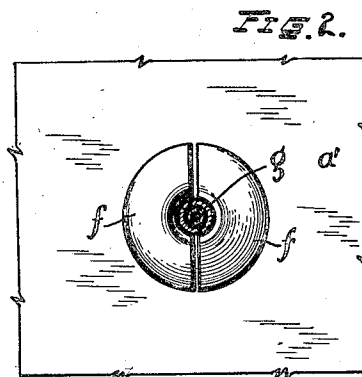
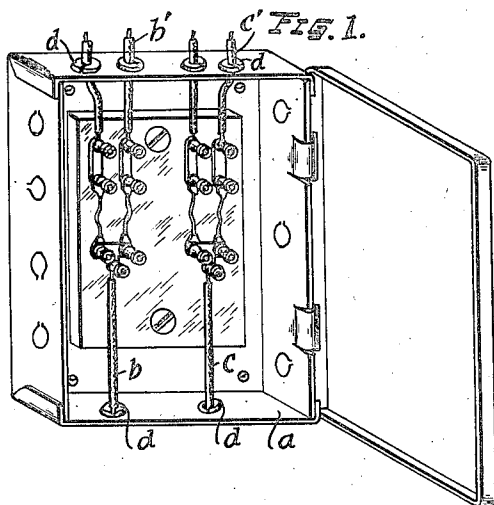
May 25, 1926.

1,586,348

H. W. ALLEN

SECTIONAL INSULATOR

Filed March 30, 1921



Inventor-
HARRY W. ALLEN,

384 *Robert L. ...*
Attorney.

Patented May 25, 1926.

1,586,348

UNITED STATES PATENT OFFICE.

HARRY W. ALLEN, OF CLEVELAND, OHIO.

SECTIONAL INSULATOR.

Application filed March 30, 1921. Serial No. 456,847.

My invention relates to improvements in sectional insulators, and has for its object the provision of insulating bushings and the like for outlet openings of wall cabinets and for other suitable insulating purposes, which bushings shall be readily insertable and removable, yet will be self retaining while in use.

I am aware that sectional insulators previously have been devised for application to intermediate portions of electrical conductors, in order to avoid threading the conductors through a complete tubular form of insulator. In this type of insulator self retaining members are provided upon each insulator section for locking complementary sections together against removal or displacement, as in U. S. Patent No. 607,315, Wingard, July 12th, 1898.

However, my improvements do not relate primarily to this type of insulator, nor to one that inherently possesses or affords integral locking members, but instead, to a novel type of insulator formed of sections that preferably are symmetrical, which are adapted to be locked in place by a suitable keying member, to wit, the inserted electrical conductor or conductors.

The preferred embodiment of my invention is shown in the accompanying drawing in its simplest and most adaptable form, but is subject to variation, both as to the number and shape of the insulator sections and their retaining members, without departing from my invention as defined in the appended claims.

Fig. 1 is a view of an ordinary sheet metal wall cabinet for electric circuits, to which my invention is applied.

Fig. 2 is an enlarged fragmentary view of one of the preferred type of sectional insulators in position, with the keying insulated wire shown in cross section and with the insulator members slightly separated, as compared with actual practice, better to illustrate the construction and principle thereof.

Fig. 3 is a fragmentary sectional view of the insulator sections as they are about to be inserted in the outlet opening.

Fig. 4 is a similar view showing the sections fully inserted and keyed in place by the conductor.

Fig. 5 is a similar view to that of Fig. 3 illustrating the insulator sections in side elevation.

Fig. 6 is a reverse view of the two complementary insulator sections upon their removal from the outlet opening and Figs. 7 and 8 are inner and outer face views of the symmetrical insulator section, and Fig. 9 is a view in side elevation of a modified section.

Throughout the several figures of the drawing I have employed the same character of reference to indicate similar parts.

Merely to illustrate the principal use to which I now apply my improvements, I have shown the sheet metal wall cabinet *a* through which the main conductors *b*, *c*, and their sub-circuits *b'*, *c'* are led; the outlet openings being adequately insulated by the sectional insulators *d* of my improved design, and hereinafter fully explained.

Preferably the insulator sections are symmetrically molded from porcelain, so that they may be made and handled in quantities without prior matching of members. The preferred type may most readily be explained by referring to Figs. 5 to 8. The structure is semi-cylindrical or semi-tubular, with full and mutilated flanges *f*, *f'* respectively molded upon the exterior and interior portions of the body *e*, affording the semi-cylindrical duct *e'* for the conductor *g*. The sections are adapted to be assembled facing each other along the plane of their bisection, but the inner face of one or both sections is rounded or cut away transversely, as at *e''*, so that one or both sections may be rocked into position, as indicated in Figs. 3 and 5. It is obvious that one section may be complete along the transverse portion *e''*, as indicated by Fig. 9, although practical use of the invention normally dictates absolutely symmetrical and interchangeable insulator sections for the greater convenience secured thereby.

Upon inserting the insulator sections, as above explained, within the circular outlet of the cabinet wall or side *a'*, and introducing the conductor *g* within its bore *e'*, as shown in Fig. 4, it will be appreciated that the mutilated flanges will be maintained in engagement with the rim of the opening in *a'*, and the sections may not be removed or accidentally displaced as long as the conductor fills the tubular bore of the insulator.

Thus, with the normal use of the device, my improved sectional insulator becomes self-keying, and no additional locking mem-

ber or means are required, as demanded by analogous bushings for wall cabinets and the like, now commonly in use. The structure is extremely simple and cheap to manufacture, and the workman may take any desired number of the sections with him for installation without previous matching or pairing, ready to be assembled in position. This comprehends several practical advantages that are not found in any prior device with which I am acquainted.

Having now described and illustrated the preferred embodiment of my invention, I claim as new and desire to secure by Letters Patent, the following:—

1. An insulating bushing of the class described, comprising two symmetrical, semi-cylindrical sections; each section being complementary in forming a cylindrical bore wherein an inserted conductor is adapted to key the insulator against removal, substantially as set forth.

2. An insulating bushing of the class described, comprising two semi-cylindrical, complementary sections having flange members at both ends adapted to be inserted in an outlet opening; one of said sections being cut away transversely along a portion of its engaging or opposing face, whereby said section may be inserted in position or removed from the outlet opening with its complementary member in place, substantially as set forth.

3. An insulating bushing of the class described, comprising two semi-cylindrical, complementary sections adapted to be inserted in an outlet opening; each section affording a mutilated retaining flange and together affording a cylindrical bore wherein an inserted conductor is adapted to key the sectional bushing against displacement from the supporting opening, substantially as set forth.

4. An insulating bushing of the class described, comprising a plurality of complementary insulating exteriorly flanged sections adapted to be inserted in an outlet opening; each section having a mutilated retaining flange and one of the sections being transversely cut away along a portion of its opposing face, whereby it may be inserted or removed past its complementary section within said opening, substantially as set forth.

5. An outlet bushing for electric conductors, comprising two complementary sections of insulating material matching to form a tubular body flanged at its inner and outer rims; one of said sections being transversely shaped to afford a reduced cross section opposite its inner rim, whereby the section

may be rocked into position within an enclosing outlet opening, substantially as set forth.

6. The combination with a sectional outlet bushing formed of complementary sections of insulating material matched to afford a tubular member with a bore extending substantially from end to end; said sections affording both inner and outer flange members of greater diameter than the intermediate body, of an encircling member about the reduced diameter of said body, and a keying member within the bore of the bushing adapted to prevent its displacement, substantially as set forth.

7. An outlet bushing for electric conductors, comprising a plurality of complementary sections of insulating material matching to form a tubular body affording an enclosing conduit for the conductor substantially from end to end; said sections having partial inner and outer retaining flanges adjacent to their ends, and one of said sections being of reduced cross section opposite its inner flange member, whereby it may be inserted and removed past its complementary section with the conduit unoccupied by the conductor, substantially as set forth.

8. A sectional insulating bushing for electrical conductors, comprising a plurality of complementary sections having flange members at both ends adapted to be inserted from the same side of an outlet opening and retained normally thereby; one of said sections being cut away transversely along a portion of its opposing face relative to the other section, whereby said section may be inserted in position or removed from the outlet opening, substantially as set forth.

9. A sectional insulating bushing of the class described, comprising a plurality of substantially symmetrical insulating sections; each section being complementary in forming a cylindrical bore wherein an inserted member is adapted to key the bushing against displacement or removal, substantially as set forth.

10. A sectional insulating bushing of the class described, comprising a plurality of substantially symmetrical insulating sections, one of which is cut away along a portion of its opposing face relative to the other section or sections; each section being complementary in forming a cylindrical bore wherein an inserted member is adapted to key the bushing against displacement or removal, substantially as set forth.

In testimony whereof I do now affix my signature.

HARRY W. ALLEN.