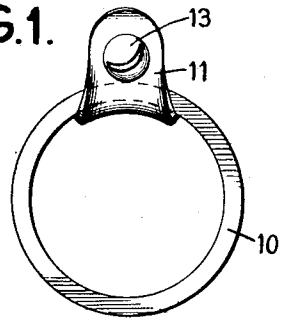
Jan. 2, 1934. J. E. MAIR 1,941,905

GROUNDING DEVICE FOR ELECTRICAL WIRING SYSTEMS

Filed Dec. 5, 1930

FIG.1.



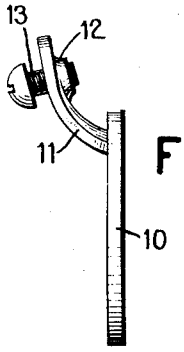


FIG.2.

FIG.3.

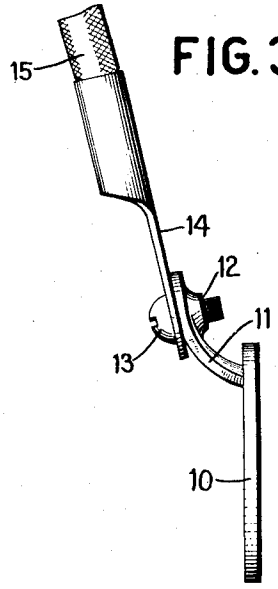
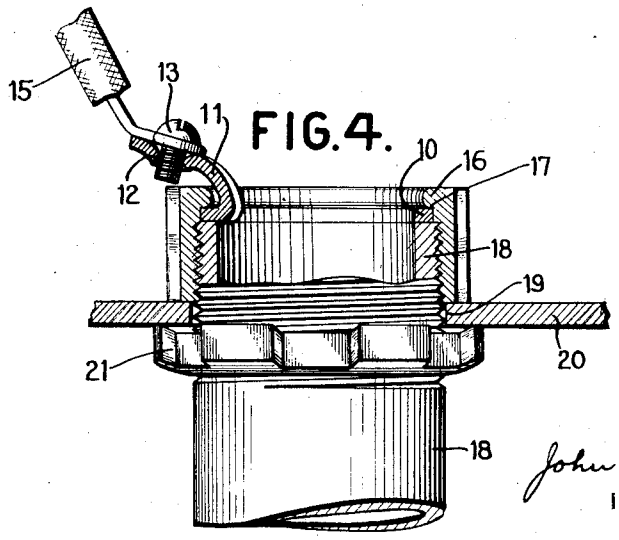


FIG.4.



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GROUNDING DEVICE FOR ELECTRICAL WIRING SYSTEMS

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Application December 5, 1930. Serial No. 500,237

5 Claims. (Cl. 247—1)

This invention relates to grounding devices for electrical wiring systems.

At the present time the insurance code requires that metallic electrical wiring systems provide means to assure the continuity of the grounding systems through the connections which are made at junctions, outlets, etc. Heretofore, one system for obtaining such grounded connections depended upon tightly setting up the various threaded portions of such connections. The obtaining of the proper ground with this arrangement is entirely dependent upon the painstaking work of the installer and, at points where it is difficult to obtain access to connections, it frequently happens that such connections are not set up tightly enough to assure a good ground connection.

Another means heretofore used to secure a ground connection is to provide a grounding ring to which a grounding or bonding wire is secured and which ring is clamped between the securing members and the box to be grounded. This arrangement again depends on the connection being tightly set up and has the same objections as previously outlined.

A further previous grounding arrangement involves the use of a bushing or securing means which contains as an integral part, a lug or screw to which a grounding or bonding wire may be attached. Such an arrangement necessitates a duplication of the stock of such bushings or securing means in order that they may be marketed both with and without the lug or grounding screw.

The present invention has for its object the provision of a simple grounding ring which will eliminate the necessity of duplicating stocks of existing fittings.

A further object of the present invention resides in the provision of a grounding ring which is adapted to have direct contact with the conduit material used in the wiring system.

A further object of the present invention is to provide a ring which will be simple to manufacture and economical of material.

A further object of the present invention resides in the provision of a new form of ground connection which embodies the feature of a grounding ring secured within an embracing bushing and cooperating with the end of a conduit, the ring being provided with a projecting lip portion extending without the bushing to which a ground wire may be attached.

Further and other objects will be hereinafter set forth in the accompanying specification and claims and shown in the drawing, which by way of illustration shows what I now consider to be a preferred embodiment of the invention.

Referring to the drawing:

Figure 1 shows a plan view of a preferred form of grounding ring;

Fig. 2 is a side elevational view of the ring shown in Fig. 1;

Fig. 3 is a view similar to Fig. 2, but shows a terminal secured to the ring to which a wire may be soldered; and

Fig. 4 is a part sectional assembling view showing my grounding ring in use.

In more detail in the drawing, the grounding ring is preferably made of a disk of conducting material such as brass or copper and comprises a narrow band or ring 10 with an angularly projecting lip 11 which is suitably threaded at 12 to receive a screw 13 (see Fig. 2). The inner opening of ring 10 is approximately the same diameter as that of the inside of the conduit with which the ring is to be used (see Fig. 4). In Fig. 3 the terminal 14 is secured to the lip 11 by means of the screw 13. A suitable wire 15 can be soldered to the terminal. It will be obvious that the wire 15 can be secured directly to the ring by placing the conductor of the wire between the head of the screw 13 and the lip 11.

In the installation of my grounding ring as is shown in Fig. 4, the ring is inserted in the bushing 16 underneath the shoulder 17 of the bushing as shown. The lip 11 projects beyond the shoulder of the bushing. The conduit 18 is first inserted through the opening 19 of box wall 20, the bushing 16 is then screwed on the threaded end of the conduit 18 until the band 10 of the ring is clamped between the end of the conduit 18 and the shoulder 17 of the bushing. A lock nut 21 is then run up so that the box wall 20 is securely gripped between the lock nut and the inner end of the bushing 16. A ground or bond wire 15 is then secured to the lip 11 by means of the screw 13. It will be noted that the lip 11 of the grounding ring may be fabricated by turning up of the metal which is pushed out to form the inner opening of the bonding ring. Thus the projecting lip portion may be said to be formed of metal gathered from the center of the ring in forming it. In this way there is a saving of material in the manufacture of the bonding ring. Furthermore by projecting the lip 11 from the inside annular edge of the ring 10 the exterior of the ring 10 may be of circular conformation with the smooth periphery free from projecting portions so as to be adapted to fit within the em-

bracing portions of the bushing 16, which bushing 16 not only surrounds the exterior of the ring, but projects over the top thereof as clearly shown in Fig. 10. The ring 10 accordingly can be proportioned so that its periphery snugly fits the shoulder of the bushing and grounding connection surfaces may be secured at the complete outer periphery of the ring 10 to the bushing as well as through the upper and lower surfaces of the ring to the bushing and to the end of the conduit 18 respectively.

It will be understood that the grounding or bonding wire may be soldered to the lip of the ring in place of being secured underneath the screw head and that other variations of the construction may be made all within the scope of the present invention as defined by the appended claims.

What I claim is:

1. A device of the class described including a bushing provided with a sleeve-like portion and an inwardly extending shouldered portion and a member within said bushing provided with an end portion disposed under the shouldered portion, a ground connection device comprising a band portion which peripherally fits the sleeve-like inside portion of the bushing and which has its upper and lower faces clamped by the inwardly extending shoulder of the bushing and by the upper end portion of the aforesaid member, and a projecting lip portion from said band portion extending beyond said shouldered portion of the bushing and in accessible position above the said shouldered portion for receiving a ground wire connection.

2. A grounding ring connection device comprising a band portion provided with a smooth external periphery free from projecting portions so that the ring may snugly fit within an embracing bushing, said ring also having a projecting ground wire securing lip portion extending from the inner periphery of the band portion, and ground wire securing means on said lip portion for securing a ground wire to said ring.

3. A grounding ring comprising an annular band portion and a projecting ground wire securing lip, said lip projecting from the inner annular edge of the band and being deformed out of the plane of the annular band portion substantially as described.

4. A grounding ring comprising an annular band portion and a projecting ground wire securing lip, said lip projecting from the inner annular edge of the band and being deformed out of the plane of the annular band portion and outwardly to a point without the exterior periphery of the annular band.

5. A grounding connection adapted for use in providing a ground connector to a conduit having a threaded end, a bushing on said threaded end having a shoulder inwardly directed over the end of the conduit, a grounding ring of conducting material clamped between said shoulder and the end of the conduit, said ring having an integral lip portion extending therefrom from the interior of the ring and extending over the shoulder of the bushing, said lip having a ground wire securing means carried thereby.

JOHN E. MAIR.