To all whom it may concern:

Be it known that I, Bryson D. Horton, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Electrical-Switch Inclosures or Cabinets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to an electrical switch inclosure or cabinet, and more particularly to an improved means on the said cabinet for holding and securing the grounding lug.

The National Electrical Code in this country requires that all service entrance switch cabinets or inclosures be suitably grounded and that the enamel with which such inclosures or cabinets are usually finished be removed at the place where the grounding lug is attached to the box so as to insure a good and positive electrical connection. In practice this is not always done, and it is the purpose of the invention to provide improved means whereby such a positive electrical connection between the grounding lug and the wall of the enclosing cabinet can be more readily obtained.

One of the objects of this invention, therefore, resides in the production of an improved means on the wall of the inclosing cabinet which is utilized in attaching the grounding lug to said cabinet whereby turning and rotating of the grounding lug is prevented.

Another object of the invention resides in the production of improved means on the side of the switch inclosing cabinet whereby positive and good electrical contact may be readily obtained on both the inside and outside of the cabinet where the grounding lug is attached to the wall of said cabinet.

Other objects of the invention will become apparent from the following descriptions; the accompanying drawings, and the appended claims.

To facilitate the description, the accompanying drawings have been provided in which—

Figure 1 is a front elevation of a service entrance switch inclosure with the cover opened and illustrates the method of attaching the grounding lug.

Fig. 2 is a side elevation of the service switch inclosure illustrating the grounding lug;

Fig. 3 is a front elevation of the means provided to improve the electrical connection between the grounding lug and the cabinet;

Fig. 4 is a view in cross-section taken on the plane represented by the line 4-4 of Fig. 3;

Fig. 5 is a sectional view taken on the plane represented by the line 5-5 of Fig. 3; and,

Fig. 6 is a sectional view taken on the plane represented by the line 6-6 of Fig. 3.

The evils which are met in practice in the incomplete electrical connection between the wall of the cabinet and the grounding lug, due to the fact that the enamel with which the wall is finished has not been properly removed, is preferably overcome in accordance with this invention by throwing up two projections on the outside of the cabinet wall and two further bosses on the inside of the cabinet wall. The projections on the outside of the cabinet wall are preferably made parallel and are spaced apart a distance to just accommodate the width of the grounding lug. By this spacing these projections of the grounding lug is prevented, since it is permanently held in position between these two parallel projections. These parallel projections also serve as a convenient guide for a screwdriver which is ordinarily used to remove the enamel from the cabinet wall. The bosses on the inner face of the cabinet wall are preferably thrown up on said wall at substantially right angles to the projections on the outside of said cabinet wall. These inner bosses are formed to present a blunt edge from which the enamel can be readily scraped by a knife or the edge of a screwdriver and these scraped edges serve to make good and positive contact with the nut which serves to bolt the grounding lug to the outside of the cabinet wall between the aforesaid parallel outside projections.

The invention is clearly illustrated in the drawings in which 10 represents the service entrance switch inclosure, which obviously may be of any desired type, which switch inclosure is provided with the exterior operating handle 11. In the inclosure are positioned the service switch consisting of the
blades 12 and 13 and the fuse receptacle 14 and 15. The switch may be connected to the load and service circuit in any desired manner, but for the purpose of illustration in the drawings, the wires 16 and 17 represent the service wires; the wires 18, 19, 20 and 21, the meter wires, and the wires 22 and 23 the load wires.

As illustrated in Figs. 1 and 2 the grounding lug 24 is connected to the side wall of the enclosure or cabinet. This lug can readily be positioned at any desired place.

The grounding lug 24 is positioned on the side wall of the cabinet between the two parallel projections 25 and 26, thrown up from the side of the cabinet. (See Figs. 3, 5 and 6.) These projections 25 and 26 are spaced apart so as to conveniently receive the grounding lug 24, and before the grounding lug 24 is placed in position a screwdriver or other sharp instrument is drawn over the face of the cabinet wall between the projections 25 and 26 to remove the enamel from the cabinet wall between the projections. In this operation the projections 25 and 26 serve as a suitable guide for the movement of the screwdriver, the enamel being readily scraped off.

The grounding lug is preferably secured to the cabinet by means of a bolt 27 and its associated nut 28. In order that good and positive electrical contact may be obtained between the nut 28 and the wall of the cabinet, two bosses are upset on the inner face of the cabinet wall. These bosses 29 and 30 (see Figs. 3 to 6 incl.) serve as a receiving surface for the nut 28 when it is drawn tight to secure the grounding lug 24 to the wall of the switch enclosure.

The enamel with which the enclosure is finished is scraped from the top part of the bosses before the nut 28 is drawn tight, so that good electrical contact will be obtained between the nut 28 and said bosses.

It will now be evident that according to the teachings of this invention the grounding lug 24, when placed in position on the service switch cabinet or enclosure, is held in this position between the parallel projections 25 and 26, and that good electrical contact between the bottom face of the grounding lug 24 and the wall of the cabinet will be obtained when the enamel finish from the wall is removed by means of a screwdriver. Also, that by the use of the bosses 29 and 30, which are preferably placed at right angles to the projections 25 and 26, good electrical contact is obtained between the bending nut 28 and the wall of the cabinet. The projections 25 and 26 prevent any rotary motion of the grounding lug 24, said grounding lug being held in its proper position by the bolt 27 and its cooperating nut 28 in conjunction with the projections 25 and 26. Without the use of the projections 25 and 26, the grounding lug could be readily turned and, due to this rotating motion, the securing nut 28 is frequently loosened and electrical contact between the wall of the cabinet and the grounding lug is broken. This difficulty encountered in practice is entirely eliminated by the teachings of this invention.

Obviously, the invention is not limited to the specific embodiment illustrated and described herein, but is capable of many variations and other applications within the spirit and scope of the invention as set out in the following claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, in combination, the wall of a switch enclosure comprising outwardly extending projections, inwardly projecting bosses, means inserted through said wall adjacent said projections, and a grounding lug, said projections and bosses cooperating with said means and lug to insure good electrical contact between the said wall and the said lug.

2. In a device of the character described, in combination, the wall of a switch enclosure comprising parallel outwardly extending projections, inwardly projecting bosses, means inserted through said wall adjacent said projections, and a grounding lug positioned between the parallel outwardly projections, said projections and bosses cooperating with said means and lug to insure good electrical contact between the said wall and the said lug.

3. In a device of the character described, in combination, the wall of a switch enclosure comprising two parallel outwardly extending projections, two inwardly projecting bosses positioned substantially at right angles to the outwardly projections, means inserted through said wall adjacent said projections, and a grounding lug, said projections and bosses cooperating with said means and lug to insure good electrical contact between the said wall and the said lug.

4. In a device of the character described, in combination, the wall of a switch enclosure comprising two parallel outwardly extending projections, two inwardly projecting bosses positioned substantially at right angles to the outwardly projections, a grounding lug positioned between said outwardly projections whereby rotation of said grounding lug is prevented, a bolt passing through said grounding lug between said parallel projections and said inwardly projecting bosses, and means cooperating with said bolt to draw said grounding lug into electrical contact with the cabinet wall between said outwardly projections and to insure electrical contact between the bosses and the securing means.
5. In a device of the character described, a switch inclosure comprising a wall, a grounding lug, means comprising projections positioned alongside of said lug, bosses projecting from said wall, and securing means bearing against said bosses for holding said lug against said wall and completing good electrical contact therewith, said lug being prevented from turning, during the tightening of said securing means, by said projections.

In witness whereof, I have hereunto subscribed my name.

BRYSON D. HORTON.

Witness:

THOMAS J. KAUFFMAN.