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H. O. PETERSON

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SHIELDING

Filed Feb. 25, 1928

Fig. 1

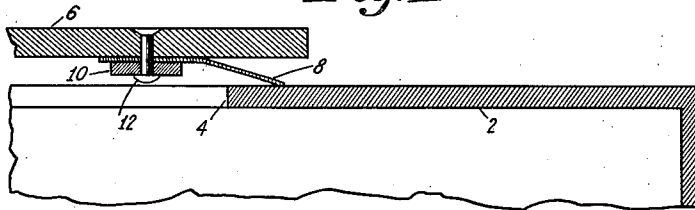


Fig. 2

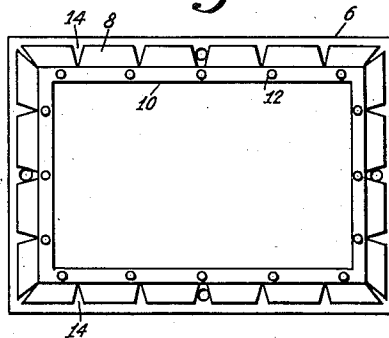
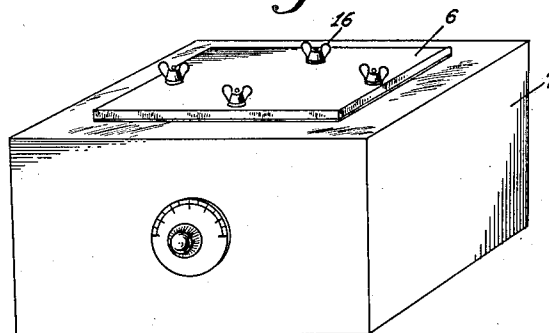


Fig. 3



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SHIELDING

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This invention relates to shielding, and more particularly to metallic shielding employed with alternating current apparatus to prevent undesired magnetic and electric coupling.

Frequently alternating current apparatus must be shielded, either to prevent it from radiating energy, or, in the case of sensitive apparatus, to protect it from the influence of interfering energy. For this purpose it is customary to surround the apparatus to be shielded in a metallic enclosure. If the shielded apparatus is to be accessible it is necessary to provide one of the shielding plates with an opening, or to make the enclosure with an open side, and to cover the opening or side with a removable conductive plate. The latter may be completely detachable, or hinged, or pivoted, and I intend the term "removable" to comprehend all equivalent arrangements.

I find that the resulting break in the continuity of the shielding destroys its effectiveness unless intimate conductive contact is made between the two plates, and to provide such contact is an object of my invention. For this purpose I insert resilient conductive means between the plates at the rim of the opening.

I prefer to make the resilient means in the form of a conductive flange of springy material, and I fix this flange to one of the plates. In order not to lessen the accessibility of the enclosed apparatus I prefer to attach the flange to the removable cover, so that it is entirely out of the way when the cover is removed.

It is essential that good electrical contact be made all around the periphery of the cover, and even with a resilient flange this result often is not attained, owing to irregularities in the surfaces brought into contact. To make a more perfect electrical union, even between surfaces which are not perfectly plane, is a further object of my invention, which I fulfill by transversely slotting the resilient conductive flange all around its edge in order to form a plurality of independently yieldable flange portions.

The invention is described more in detail

in the following specification, which is accompanied by a drawing in which

Figure 1 is a detail of a preferred form of flange;

Figure 2 is a view of the inside of a cover plate provided with a slotted flange; and

Figure 3 illustrates a metallic enclosure assembled with its removable cover.

Referring to Figure 1 there is a metallic enclosure 2, provided with an opening bounded by the edge 4. For closing the opening there is a cover plate 6, and between the plates 2 and 6 there is provided a resilient conductive flange 8, which is fixed on the cover plate 6 by means of a frame 10 attached to the cover plate by means of screws 12.

Referring to Figure 2 the cover plate 6 is seen to be, in this case, rectangular, and provided adjacent its periphery with a flange 8, fixed to the plate 6 by means of the frame 10, which is screwed to the plate 6 by means of screws 12. It will be seen in this case that the flange 8 has been provided with a number of slots 14, so that it is made up, in effect, of a plurality of independently yieldable flange portions, thereby making possible more perfect electrical contact all around the rim of the cover.

Figure 3 shows a complete metallic container 2 provided with a removable cover plate 6. The container may enclose any alternating current apparatus which is to be shielded, whether to prevent radiation, or to insulate from reception, through either magnetic or capacitive coupling. The cover 6, when provided with a slotted flange such as I have disclosed, need not be fastened by a large number of closely spaced screws, for merely a few tensioning means suffice, such as the four wing nuts 16, indicated in Figure 3.

I claim:

1. The combination with a conductive shielding plate having an opening, and a removable conductive shielding plate for covering said opening, of resilient conductive means situated between the plates at the rim of the opening for insuring good electrical contact between the plates.

2. The combination with a conductive shielding plate having an opening, and a removable conductive shielding plate for covering said opening, of a resilient conductive flange fixed to one of said plates in proper position to be between the plates and adjacent the rim of the opening when the plates are brought together, in order to insure good electrical contact therebetween.

3. The combination with a conductive shielding plate having an opening, and a removable conductive shielding plate for covering said opening, of a resilient conductive flange, transversely slotted to form a plurality of independently yieldable flange portions, fixed to one of said plates in proper position to be between the plates and adjacent the rim of the opening when the plates are brought together, in order to insure good electrical contact therebetween.

4. In combination, alternating current apparatus to be shielded, a metallic enclosure for shielding said apparatus having an opening for access thereto, a removable metallic cover for said opening, and resilient conductive means situated between the cover and enclosure adjacent the periphery of the cover for insuring good electrical contact between the cover and enclosure.

5. In combination, alternating current apparatus to be shielded, a metallic enclosure for shielding said apparatus having an opening for access thereto, a removable metallic cover for said opening, and a resilient conductive flange fixed to the cover adjacent its periphery for insuring good electrical contact between the cover and enclosure.

6. In combination, alternating current apparatus to be shielded, a metallic enclosure for shielding apparatus having an opening for access thereto, a removable metallic cover for said opening, and a resilient conductive flange, transversely slotted to form a plurality of independently yieldable flange portions, fixed to the cover adjacent its periphery for insuring good electrical contact between the cover and enclosure.

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