

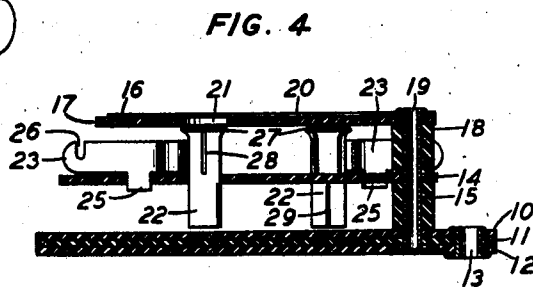
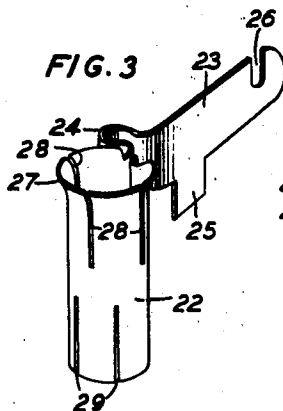
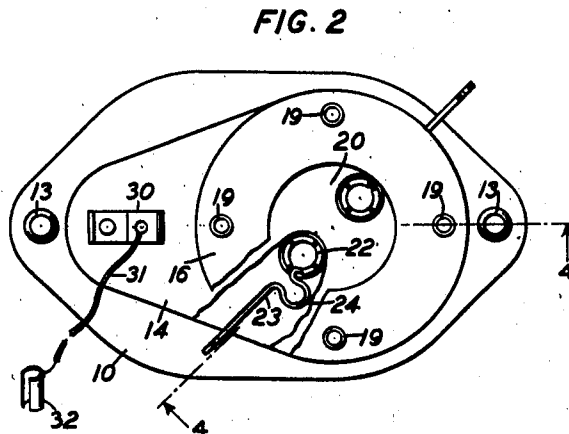
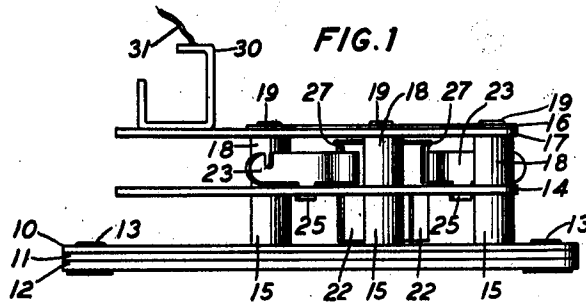
Dec. 18, 1934.

E. SORENY

1,984,998

MOUNTING FOR ELECTRICAL DEVICES

Filed July 25, 1931



INVENTOR  
E. SORENY  
BY

Walter C. Kiesel  
ATTORNEY

## UNITED STATES PATENT OFFICE

1,984,998

## MOUNTING FOR ELECTRICAL DEVICES

Ernest Soreny, New York, N. Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

Application July 25, 1931, Serial No. 553,107

6 Claims. (Cl. 173-328)

This invention relates to mountings for electrical devices and more particularly to such mountings for devices employing currents of large magnitude.

One object of this invention is to prevent deleterious heating of the contacts in mountings for electrical devices employing currents of large magnitude.

A further object of this invention is to simplify the structure, to expedite the manufacture, and to reduce the cost of mountings for electrical devices.

In accordance with this invention a mounting, such as a socket for high current discharge devices, comprises a base plate, a top plate and an intermediate plate secured in spaced parallel relationship. The top plate and the intermediate plate are provided with complementary aligned apertures for receiving terminal prongs on the device. A plurality of conducting members are mounted on the intermediate plate and each comprises an expandible cylindrical contact portion extending through one of the apertures in the intermediate plate and adjacent the corresponding aperture in the top plate, an outwardly extending terminal portion having an integral anchor or lug for attachment to the intermediate plate, and an intermediate flexible portion integral with the terminal and contact portions for compensating for variations in the spacing of the prongs of the device. Each of the contact portions is further provided with a plurality of slits extending from opposite ends thereof and alternately arranged to increase the resiliency of the contact thereby insuring positive engagement with the terminal prongs. An independent electrical terminal is mounted on the top plate for connection to a terminal on the device remote from the terminal prongs thereof.

The spacing of the plates allows adequate cooling and insures rapid dissipation of the heat generated in the contacts and thereby prevents deleterious heating of the contacts and the plates. The flexible portions and the slits in the contacts insure positive and efficient engagement of the contacts with the associated terminal prongs of the electrical device.

The features of this invention will be more readily apparent from the following detailed description with reference to the accompanying drawing in which:

Fig. 1 is a side view in elevation of a socket for electric discharge devices constructed in accordance with this invention showing the complete assembly;

Fig. 2 is a plan view of the socket shown in Fig. 1 with a portion of the top plate broken away to show the arrangement of a terminal and contact member;

Fig. 3 is an enlarged perspective view of a contact and terminal member in accordance with a feature of this invention; and

Fig. 4 is a cross-sectional view along line 4-4 of Fig. 2.

Referring now to the drawing, a mounting for electrical devices, such as a socket for an electric discharge device, comprises in accordance with this invention a base or support consisting of three similar flat plates 10, 11, 12 of insulating material, such as a phenol condensation product, secured together in any suitable manner, for instance, by eyelets 13. An intermediate plate 14, which also may be of an insulating material, such as a phenol condensation product, is spaced in parallel relation to the base or support by tubular spacers or sleeves 15.

A top member which may consist of two flat plates 16 and 17 of insulating material, is supported in superimposed relation parallel to the intermediate plate upon tubular spacers or sleeves 18. A plurality of eyelets 19 extend through the plates of the top member, the plate 14, plates 10, 11 and 12 of the base and spacers 15 and 18, and secure these elements together to form a compact, rigid structure.

The plate 16 is provided with a centrally positioned circular opening 20 which forms a recess with plate 17 in which are located openings 21 in the plate 17. The plate 14 is provided with apertures in alignment with the openings 21 in the plate 17.

Arranged in the apertures of the intermediate plate 14 are unitary conducting members, each comprising a cylindrical contact portion 22 for receiving a prong of an electrical device, such as a discharge device, an outwardly extending terminal portion 23 and an integral intermediate flexible portion 24. Each member is formed of a single metallic strip having the cylindrical portion formed at one end and an edgewise terminal portion 23 at the other end. These members are secured to the intermediate plate 14 by anchors or lugs 25 integral with the terminal portion 23 which extend downwardly through slits in the intermediate plate 14. Displacement of the conducting members is prevented by the top member and the base. The terminal portion 23 may be provided with a slot 26 for facilitating attachment of a wire connection to the terminal. The cylindrical contact portion 22 of each strip ex-

tends through one of the apertures in the plate 14 and is provided with a flared rim or lip 27 positioned adjacent one of the openings 21 in the plate 17. The contact portion 22 is further  
5 provided with sets of slits 28, 29 extending from opposite ends of the portion 22 and alternately arranged.

This socket construction allows the free circulation of air or other gaseous cooling medium  
10 between the several plates and around the contact portions 22 so that dissipation of heat generated in the conducting members during operation of the device mounted in the socket is insured, deleterious heating of the contacts is prevented and the handling of high currents is expedited. The slits 28, 29 in the contact portions  
15 22 insure a positive engagement between the contact portions 22 and the terminal prongs of the electric device inserted therein and also insure a low contact resistance between the contact portions and the terminal prongs. The flexible portion 24 allows displacement of the contact portions 22 to compensate for variations in the spacing of the terminal prongs on the base  
20 of the electrical device occasioned by manufacturing tolerances. The entire mounting is of simple construction and may be manufactured expeditiously in large quantities and at low cost.

An independent terminal 30 may be mounted  
30 on the plate 17. The terminal 30 is preferably mounted on the top member to provide high insulation between the terminal 30 and the terminal portions 23 of the conducting members. In high current rectifier discharge devices, for  
35 example, the anode terminal is usually sealed in the top of the enclosing vessel. Connection thereto may be established by a flexible wire 31 attached to the terminal 30 and a clip 32 adapted to engage the anode terminal. The  
40 cathode terminal prongs of such a device are usually mounted on an insulating base secured to the enclosing vessel and may be inserted into the cylindrical contacts 22 through the apertures 21.

While only two conducting members are shown  
45 in the drawing, it is, of course, understood that three or more conducting members may be arranged in spaced relation in the mounting. For instance, in high power amplifying devices the  
50 terminal prongs on the base thereof are connected to the cathode, grid and anode and, therefore, the mounting of this invention can easily be designed to accommodate the terminal prongs of such a device.

55 What is claimed is:

1. A mounting for an electrical device comprising a top plate, a supporting base plate, and an intermediate plate, means for securing said plates  
60 in fixed parallel spaced relation, said top and intermediate plates having axially aligned apertures for receiving terminal prongs on said device, contact members fitted in the apertures in said intermediate plate and extending adjacent the apertures in said top plate, and terminal  
65 members extending outwardly from said contact members and secured to said intermediate plate.

2. A mounting for an electrical device comprising a pair of plates secured in parallel spaced  
70 relation, said plates being provided with complementary aligned apertures for receiving terminal prongs on said device, and conducting members,

each member including a terminal portion having an integral extension for attachment to one of said plates, an expansible contact portion extending through one of said apertures in said one plate and adjacent the complementary aperture in the other plate, and an intermediate  
5 portion integral with said terminal and contact portions, said intermediate portion being rigid parallel to the axis of said apertures and flexible at right angles to said axis.

3. A mounting for an electrical device comprising a plurality of plate members rigidly secured in spaced parallel relation, two adjacent  
10 plates having a plurality of aligned apertures for receiving terminal prongs on said device, and unitary conducting members mounted on one of said adjacent plates, each including a split cylindrical contact portion extending through an aperture in said one of the adjacent plates and  
15 having an end juxtaposed to the corresponding aperture in the other of said adjacent plates, said member having a flat outwardly extending terminal portion having its plane parallel to the longitudinal axis of said contact portion, and a  
20 lug integral with said terminal portion for securing said conducting member to one of said adjacent plates.

4. A mounting for an electrical device comprising a base plate, a top plate, and an intermediate plate, means for securing said plates in  
30 parallel spaced relation, said top and intermediate plates having aligned apertures, a conducting member mounted on said intermediate plate including a split cylindrical portion extending through an aperture in said intermediate plate and having an end adjacent the corresponding  
35 aperture in the top plate, said cylindrical portion having a plurality of slits extending from opposite ends thereof and alternately arranged, a rigid terminal portion secured to said intermediate plate, and a flexible portion intermediate  
40 said cylindrical and terminal portions allowing lateral displacement of said cylindrical portion.

5. An air cooled socket comprising a flat base, an apertured top member, an apertured supporting  
45 plate between said base and top member, tubular posts spacing said base, supporting plate and top member in superimposed relation, and metallic members each having a tubular contact portion extending loosely through said supporting  
50 plate and having a terminal extension secured to said supporting plate, said base and top member being disposed immediately adjacent the ends of said tubular portions for preventing displacement of said contact portions with respect  
55 to said supporting plate.

6. A mounting for an electrical device, comprising a plurality of superimposed plates, means for rigidly spacing said plates in parallel  
60 relation, a plurality of tubular contact members extending through at least one of said plates, said contacts having terminal extensions projecting transverse to said contacts from said plates, and anchoring means on said terminal extensions  
65 projecting through the plate through which said contacts extend to prevent dislodgment of said contact members in a lateral direction, said other plates preventing dislodgment of said contacts in the direction of the axis of said contacts.

ERNEST SORENY.