Dec. 3, 1935. E. H. JONES 2,022,964

MOUNTING FOR ELECTRICAL DEVICES

Filed Aug. 2, 1933

FIG. 1

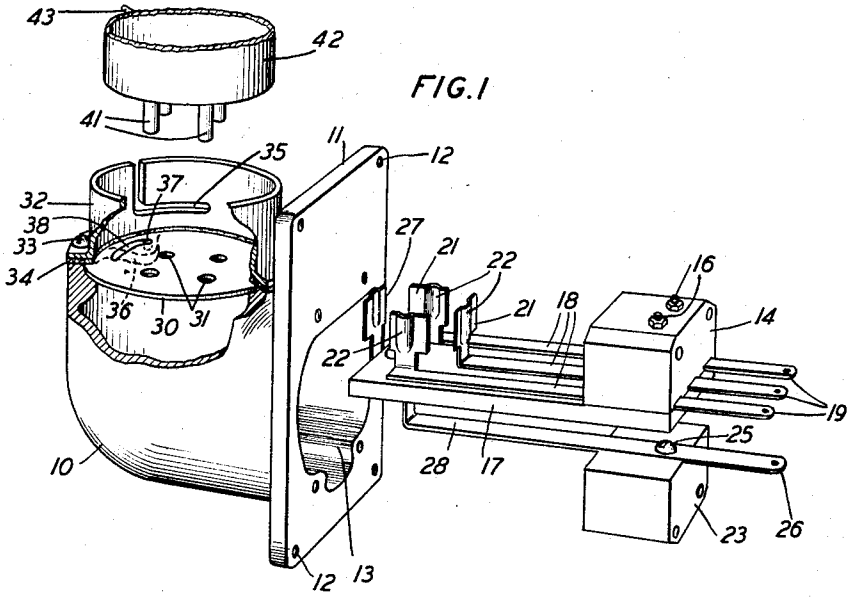


FIG. 2

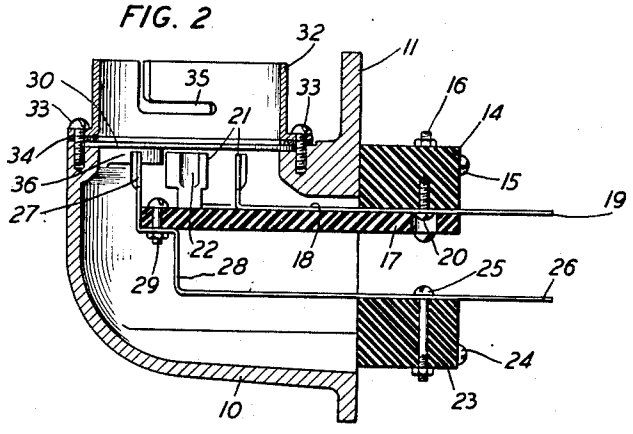


FIG. 3

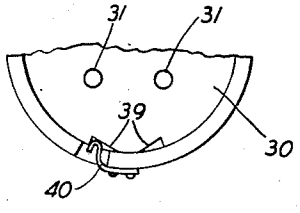
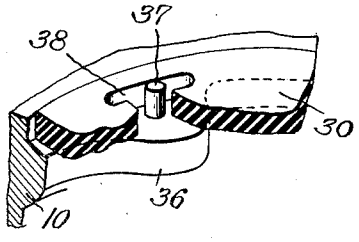


FIG. 4.



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MOUNTING FOR ELECTRICAL DEVICES

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1 Claim. (Cl. 173—328)

This invention relates to mountings for electrical devices and more particularly to sockets for electron discharge devices.

In some sockets for electron discharge devices of the type having external prongs extending from the base thereof, the contact members for engaging the prongs are either exposed through a relatively large aperture for receiving the base of the device or are disposed adjacent an insulating member having apertures for receiving the terminal prongs. It sometimes occurs that the contacts are connected in a circuit even when no device is in the socket and there is danger, therefore, of accidental short-circuiting of the contact members by a tool or other piece of metal. There is danger also, particularly in those cases in which devices utilizing relatively high potentials are employed, of injury to a person who accidentally comes in contact with the contact members.

One object of this invention is to prevent accidental short-circuiting and contact with the contact members of a socket for electron discharge devices or similar apparatus.

In one embodiment of this invention, a socket comprises a base portion and a tubular portion extending therefrom and adapted to receive the base of an electron discharge device or the like, and provided with a groove or slot for accommodating a bayonet pin projecting from the base of the device. Contact members are mounted on the base portion of the socket and are spaced to engage terminal prongs on the device when the latter is inserted in the tubular portion of the socket.

In accordance with a feature of this invention, a rotatable shield of insulating material is mounted within the tubular portion of the socket and adjacent the contact members, and is provided with a plurality of apertures disposed in the same geometrical relation as the contact members and the terminal prongs of the device. The shield member is normally positioned so that the apertures therein are misaligned with the contact members, thereby preventing accidental contact with the contact members. When a device is inserted in the tubular portion of the socket, the terminal prongs on the device enter into the apertures in the shield member. As the device is rotated to lock the bayonet pin in the slot or groove therefor, the shield likewise is rotated so that the apertures therein are brought into alignment with the contact members and the latter engage the terminal prongs. When the device is removed from the socket, the shield is rotated by the rotation of the device to misalign the apertures and the contact members. Stop members may be provided to limit the rotation of the shield to the angle of rotation of the device during its insertion in or withdrawal from the socket. The shield may be locked in position when the device is in the socket, by a pawl or the like cooperating with a groove or notch in the shield member. In order to prevent accidental rotation of the shield member, friction pads, such as of felt, may be provided adjacent and in contact with the peripheral portion of the shield member.

The invention will be understood more clearly and fully from the following detailed description with reference to the accompanying drawing in which:

Fig. 1 is an exploded view in perspective of a mounting constructed in accordance with this invention, and partly broken away to show the insulating shield more clearly;

Fig. 2 is a side view in cross-section of the mounting shown in Fig. 1; and

Fig. 3 is a fragmentary view showing a stop arrangement for limiting rotation of the shield and for preventing accidental rotation thereof.

Referring now to the drawing, the mounting comprises a hollow elbow-shaped member 10, which may be of metal, having an integral flange or supporting plate portion 11 provided with apertures 12 for receiving screws for securing the mounting to a suitable support, and provided also with an aperture 13. An insulating block 14 is secured to the rear wall of the flange or plate 11, as by screws 15, and has secured thereto by bolts 16 an insulating plate 17 which extends through the apertures 13 into the interior of the elbow-shaped member 10. A plurality of conductive members are mounted upon the plate 17, each of the members including an elongated strip portion 18 having a terminal portion 19 extending outwardly beyond the insulating block 14 and secured to the block 14 as by screws 20, only one of which is shown. Each of the conducting members includes also an integral upstanding contact portion 21 for engaging terminal prongs 41 extending from the base 42 of an electron discharge device or the like, and provided with a guiding and positioning groove 22.

Another insulating block 23 is secured to the rear wall of the flange or supporting plate 11, as by screws 24, and has secured thereto by a bolt 25 a conducting member including a terminal portion 26, a contact portion 27 and an inter-

mediate reversely bent portion 28 secured to the insulating plate 17 as by a bolt 29.

The contacts 21 and 27 are disposed in the same geometrical relation as the terminal prongs 41 of the device to be supported in the mounting. If the device to be supported is an electron discharge device, the contacts 21 preferably are adapted to engage the low potential terminals of the device and the contact 27 is adapted to engage the high potential terminal. The plate 17, therefore, provides a high insulation between the low and high potential contacts and prevents arcing therebetween.

The elbow-shaped member 10 is provided with an annular recess at one end, in which the peripheral portion of a rotatable insulating disc or shield 30 is seated, the disc or shield being provided with apertures 31 disposed in the same geometrical relation as the contacts 21 and 27. A tubular shell 32 is secured to the elbow-shaped member 10 as by screws 33, together with a friction pad 34 of felt or similar material which engages the disc 30 and prevents accidental rotation thereof. The shell is provided with an L-shaped groove or slot 35 for receiving a bayonet pin 43 on the device to be supported in the mounting.

The elbow-shaped member 10 may be provided with an integral inwardly projecting flange 36 which underlies the disc or shield 30 and has embedded therein a pin 37 extending into an elongated aperture or guide slot 38 in the disc or shield. The slot is so positioned that for one extreme position thereof relative to the pin 37 the apertures 31 are in alignment with the contacts 21 and 27 and is of a length substantially equal to the travel of the bayonet pin 43 in the lateral arm of the groove or slot 35.

In an alternative arrangement for limiting the rotation of the disc or shield 30, shown in Fig. 3, the disc or shield may be provided with suitably spaced and positioned notches 39 for receiving a spring or pawl 40 mounted on the elbow-shaped member 10.

Normally, that is, when the mounting is not in use, the disc or shield 30 is positioned so that the apertures 31 are misaligned with the contacts 21 and 27, and thereby prevents accidental contact from the exterior of the mounting with the contacts. When a device is placed in the mounting, the base 42 thereof is inserted into the tubular sleeve 32 with the bayonet pin 43 on the base in the vertical arm of the groove or slot 35 and the terminal prongs 41 on the base extending through the apertures 31. As the device is rotated to lock the bayonet pin in the lateral arm of the groove or slot 35, the disc 30 is rotated until the terminal prongs 41 on the device engage the contacts 21 and 27 and are held in the grooves 22 in the contacts.

When the device is to be withdrawn from the socket, it is rotated in accordance with the travel of the bayonet pin in the lateral arm of the groove or slot 35 and the disc or shield 30 is likewise rotated so that the apertures 31 therein are misaligned with the contacts 21 and 27. The rotation of the disc or shield and of the device is limited by the pin 37 and guide slot 38 arrangement (Figs. 1 and 2) or by the pawl 40 and notch 39 arrangement (Fig. 3) and by the travel of the bayonet pin in the lateral arm of the groove or slot 35, so that at one end of the travel the bayonet pin is in alignment with the vertical arm of the groove or slot and the base of the device may be withdrawn from the shell 32.

It will be apparent, particularly from Fig. 2, that the disc or shield 30 may be made relatively thin and that the contacts 21 and 27 may be positioned immediately adjacent the disc or shield. As a result, a large portion of the terminal prongs, which are usually of a standard length, on devices such as electron discharge devices, is engageable by the contacts 21 and 27 so that a large surface and low resistance contact is established.

Although a specific embodiment of the invention has been shown and described, it will be understood, of course, that modifications may be made therein without departing from the scope and spirit of the invention as defined in the appended claim.

What is claimed is:

A mounting for an electrical device having a base, terminal prongs extending from said base, and a bayonet pin projecting from a wall of said base, said mounting comprising a hollow member having a tubular portion for receiving the base of said device and provided with a guide slot having a lateral part for receiving said bayonet pin, a plurality of contacts within said hollow member and disposed in the same geometrical relation as said prongs, an insulating shield within said hollow member, having apertures for receiving said prongs and having also an elongated aperture adjacent its periphery, said shield being rotatable in accordance with the travel of said bayonet pin in said lateral part of said guide slot to align said apertures with said contacts, and a pin fixed to said hollow member and extending into said elongated aperture, said elongated aperture being of a length commensurate with the lateral travel of said bayonet pin in said lateral part of said guide slot.

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