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H. SAUER

2,869,098

STRAP TYPE INSTRUMENT MOUNTING

Filed July 25, 1955

FIG. 1.

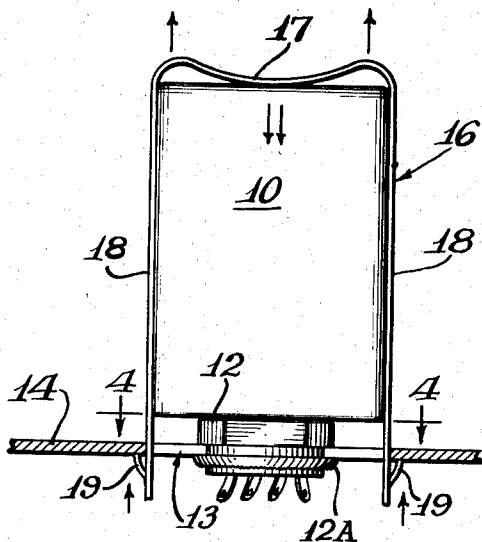


FIG. 2.

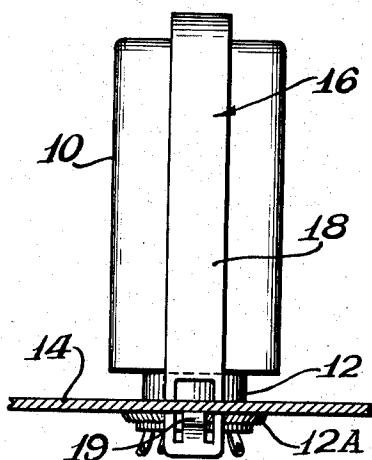


FIG. 3.

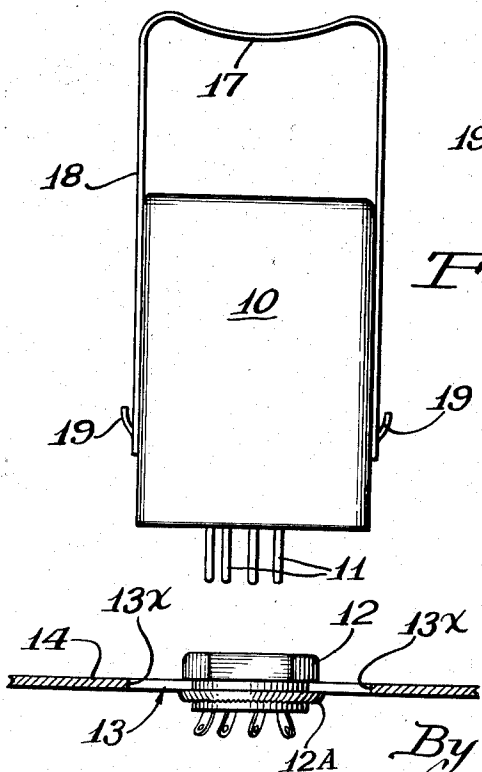


FIG. 4.

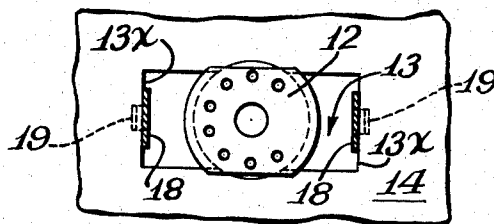
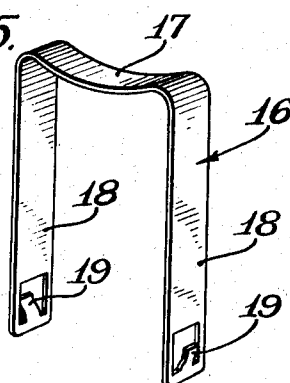


FIG. 5.



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2,869,098

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1 Claim. (Cl. 339—75)

This invention has as its principal object the provision of an improved mounting means for instruments such as relays, or circuit components, such as condensers, coils, and the like.

More particularly, the novel mounting means is especially suited for removably securing canister and like housings on either a panel or a chassis by utilization of a simple spring hold-down strap which eliminates the need for soldering, staking, or bolting such items in position.

Still more detailed objects and aspects of novelty and utility inherent in the disclosed device will become more apparent as the following description proceeds in view of the annexed drawing, in which:

Fig. 1 is a front elevation of an instrument canister and mounting means therefor installed upon a fragmentary span of panelling shown in section;

Fig. 2 is a view similar to that of Fig. 1 but showing the devices in side elevation;

Fig. 3 is an exploded version of the showing of Fig. 1;

Fig. 4 is a horizontal section taken along lines 4—4 of Fig. 1;

Fig. 5 is a perspective detail of the hold-down strap.

Referring to Fig. 3, the invention is illustrated in conjunction with a canister 10 adapted to house any desired instrumentality such as a relay or inductance (not shown) with which electrical connections may be established through the medium of terminal prongs 11, for example, which in turn are adapted to engage in a suitable socket 12, the latter, in this instance, serving both to support the housed device and to establish electrical connections therewith.

The socket 12 is mounted in an oversize slot 13 (Figs. 3 and 4) punched in a mounting plate 14 so as to leave passages 13X flanking the opposite sides of the socket, the purpose of which will presently appear. The socket is retained by suitable means such as a press ring 12A, it being understood in any event that details of the socket means 12, 12A, and the instrument canister 10—11 do not per se constitute any part of the invention, such contrivances being well-known and in common use in the electrical arts.

In some types of equipment, a socket-mounted canister like the device 10 may have no other mounting or supporting means than the socket 12, and for some purposes this is sufficient.

However, the more frequent case requires that the device 10 be firmly secured in place against vibration or accidental unseating from any cause; and it is commonly necessary to employ one of several expediences, such as hold-down bolts or twisted or struck-over lugs or soldering, to attach the canister to the panel or chassis means 14, it being obvious that these expediences to varying degrees render the instrumentality 10 difficult to remove for adjustment, replacement, or repair purposes.

Accordingly, the invention provides a simple hold-down strap 16 formed in the manner depicted in Fig. 5 to provide a U-shaped member having an inwardly de-

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flected or curved bight 17 flanked by opposite legs 18, near the free ends of each of which are outwardly-projecting tabs 19.

The strap 16 is preferably struck from flat spring stock such as Phosphor bronze or the like so that the bight 17 and conjoined legs 18 will have some yieldability to permit the device to be slipped over the canister 10 in the manner depicted in Figs. 1 and 2; and also to cause the two legs 18 normally to be spring-biased outwardly away from each other so as to bear against the flanking margins 13X of the socket slot 13 and cause the respective latching tabs 19 thereof to engage beneath the apertaining portions of the panel 14, thereby locking the strap in position with a degree of tension or thrust action in a downward direction upon the canister 10 along the line of engagement of the bight portions 17 therewith.

As a result of the foregoing construction and operation of the strap means 16, 17, 18, 19, the device 10 is secured in its engagement with the socket means against dislodgement or movement from vibration and the like, so that the electrical connections are not disturbed from such causes; yet the device may be readily removed by simply squeezing the two legs 18 toward each other far enough to disengage their respective tabs 19 from beneath the locking margins 13X of the oversize slot.

For heavier requirements, the novel hold-down strap 16 may, if necessary, be made considerably wider in lateral dimension across the width of the legs, with the tabs 19 made correspondingly wider and the widths of the latching margins at 13X made equally wide.

In addition to the advantages of simplicity and ease of manipulation in installing and removing the hold-down means, a further advantage is achieved in conserving space at the sides of the device 10 because the legs 18 are made to hug the sides of the device as closely as desired, it being noted that the latching tabs 19 may be disengaged by a relatively slight displacement requiring only a small freedom of movement for the apertaining free-end regions of the legs beneath the panel 14, and in many installations said free-end portions may be easily flexed from beneath the panel 14, although there may be very little clearance between the upper reaches of the legs and the canister. Merely pressing the strap 16 down upon the canister will lock the tabs 19 home and secure the device 10 in place.

By reason of the fact that instruments, such as relays, are becoming much smaller in overall size and much lighter, and are being used in larger numbers under conditions where they are subjected to vibration and shock, and must be easily replaceable, the new strap mounting affords a removable mounting or hold-down means of exceptional utility for miniature and subminiature relays.

The flat strap legs 18 hugging flat canister sides prevent twisting; and the canister is at all times under a resilient pressure owing to the bow spring portion 17, attention being called to the force arrows in Fig. 1.

Moreover, the mounting means has a certain amount of adaptability in that it is feasible to employ the new mounting strap on sub-panels or chassis plates, the thickness of which ranges from .025 in. to .075 in. for a strap of given dimensions.

I claim:

In combination, an instrument member having at least two opposite side-walls which are substantially flat and an adjoining bottom portion provided with plug-in mounting means cooperable with matching plug-in means located in a long slot in a mounting panel, said slot being longer than said matching plug-in means so as to leave a passage between each of the opposite sides of said matching plug-in means and a confronting edge of

said slot; and removable hold-down means in the form of a U-shaped strap of flat springy metal having its bight bowed inwardly and having the free ends of its legs sprung somewhat outwardly, each leg having a substantially flat latching lug struck outwardly therefrom and extending back in a direction toward the bight to form opposite latching tabs, said legs being spaced apart a distance only slightly greater than the distance between said opposite flat side-walls of the instrument member and said tabs being located relative to said bowed bight 10 and the length of said instrument member such that when said instrument member is disposed on said panel by the mounting means aforesaid, said strap can be pressed down upon the instrument member with said bowed portion pressing against the upper end thereof 15 and said legs substantially hugging said opposite side-

walls thereof, and said tabs sprung outwardly of the lugs to latch beneath said free edges of the slot, whereby the instrument member is secured in mounted position and also prevented from twisting by the flat strap legs hugging said opposite side-walls thereof, and said legs are quickly and easily insertable in said passages.

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