Oct. 21, 1969 B. LAURENT 3,474,396

BASE FOR PLUG-IN ELECTRIC OR ELECTRONIC ASSEMBLIES OR SUB-ASSEMBLIES

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FIG. 1

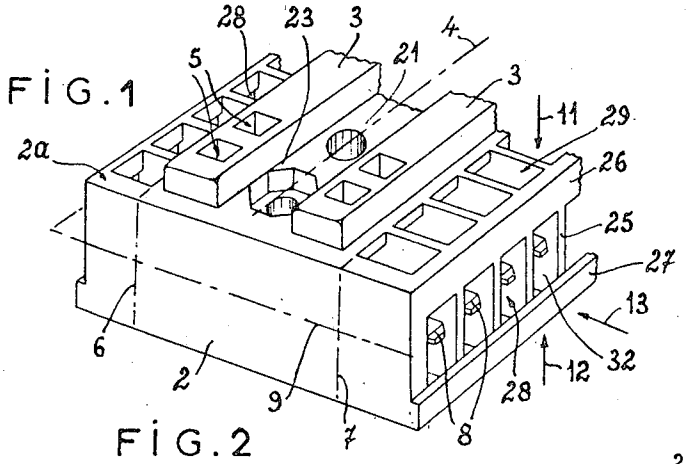
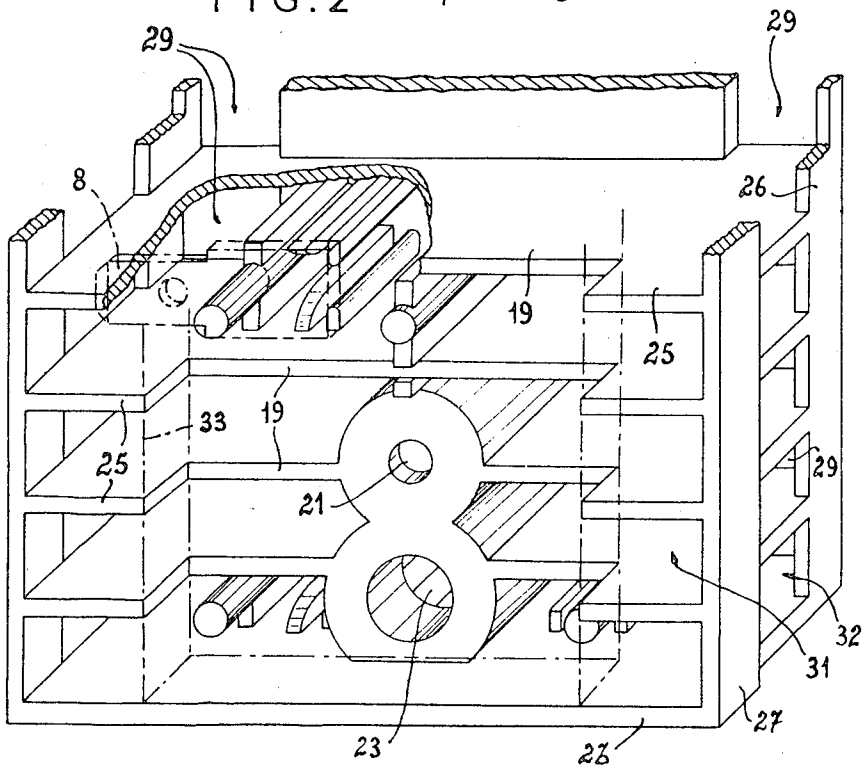


FIG. 2



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BASE FOR PLUG-IN ELECTRIC OR ELECTRONIC ASSEMBLIES OR SUB-ASSEMBLIES

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FIG. 3

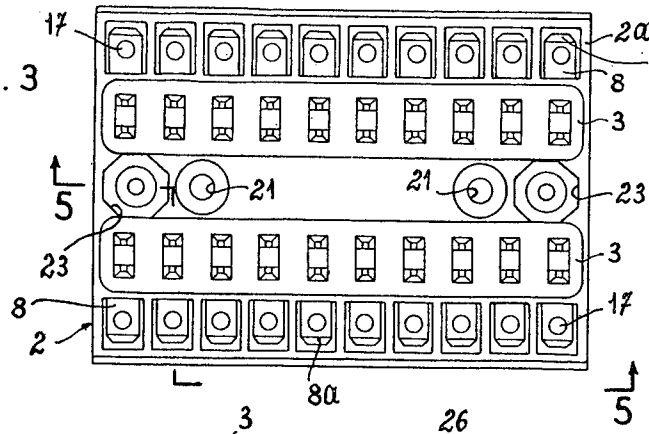


FIG. 4

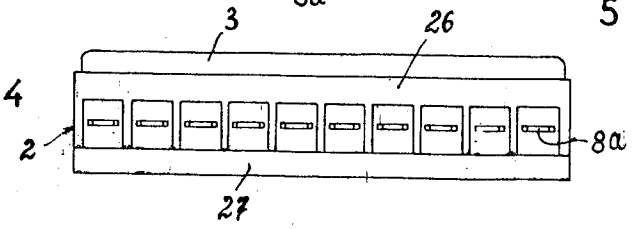


FIG. 5

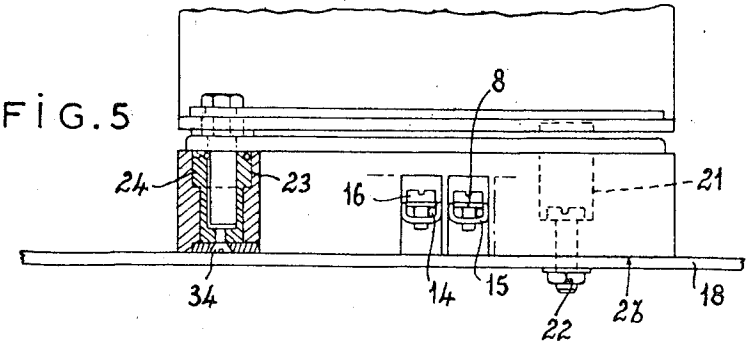
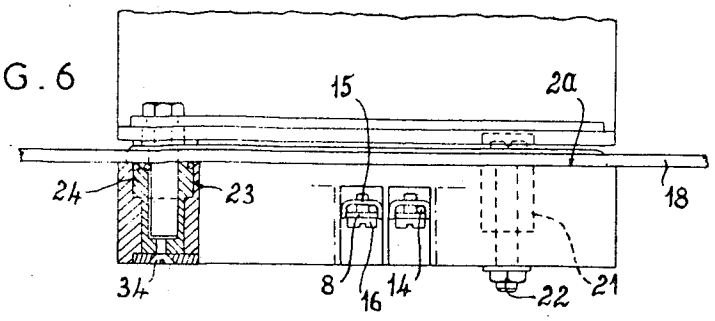


FIG. 6



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3,474,396

BASE FOR PLUG-IN ELECTRIC OR ELECTRONIC ASSEMBLIES OR SUB-ASSEMBLIES

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Claims priority, application France, Oct. 27, 1966, 47,885
Int. Cl. H01r 9/10, 13/60
U.S. Cl. 339—198 3 Claims

ABSTRACT OF THE DISCLOSURE

An improved base for plug-in electric or electronic assemblies and sub-assemblies is provided; the base includes female members adapted to receive male contacts and connected to flat terminals aligned with each other along two opposed parallel surfaces of the base; said terminals are located in a plane perpendicular to the planes of said surfaces and are accessible from each of their flat surfaces and from their outer end.

The present invention relates to an improved base for plug-in electric or electronic assemblies or sub-assemblies.

In electric and electronic installations, female bases are commonly used, onto which electric or electronic assemblies or sub-assemblies are readily fitted, or from which they are easily removed. Such an arrangement is advantageous in that it cuts out the time-consuming and difficult operations relating to the welds, which are required not only when assembling the installation but also when partially disassembling and re-assembling same in order to repair or replace one of the members thereof.

Such bases, which are generally made of molded or injected insulating material, include accordingly, in addition to members for securing them to a supporting metal sheet, the female members adapted to accommodate the plug contacts of a plug-in assembly or sub-assembly, and flat terminals, each of which is connected with one of said female members and is used for electrically connecting a lead to said female member by means of a tightening screw and clamp.

Depending on the type of installation, such a base is secured to a supporting metal sheet through its lower surface or through its upper surface. Consequently, in the first case the flat terminals should be accessible through their upper surfaces, while, conversely, in the second case, they should be accessible through their lower surfaces.

As no existing bases include flat terminals which are accessible on both their surfaces, the users are compelled to stock the two types of bases, which results in storage problems and also in two types of articles.

The object of the present invention is to obviate such drawbacks. To this end, it relates to a base for plug-in electric or electronic assemblies or sub-assemblies, of the type of those including female members adapted to receive plug contacts, each of said female members being connected to a flat terminal, characterized in that said flat terminals are aligned with each other on each lateral surface of said base, substantially in a plane normal to the planes of said surfaces, so that said terminals are accessible not only through their upper and lower surfaces, but also through their end surfaces.

Since the flat terminals are also accessible through their end surfaces, to allow connecting up by means of clips, they are each provided with a central hole through which a screw for a tightening clip or strap of the lead pass, and, in addition, their free ends are bevelled.

According to a preferred embodiment of the invention, in order to improve the electric insulation between the flat terminals so as to prevent any risk of short circuit, a partition is provided adjacent to each terminal, which partition is normal to the plane of said terminals and to the plane of the corresponding lateral surface of the base, while the corners of its free end are connected to the corresponding corners of the adjacent partitions by two reinforcing ribs. Such an arrangement, while improving the protection for said terminals, leaves the latter accessible through three ways or directions as mentioned hereinabove.

As a matter of fact, each flat terminal is insulated within a cell provided with three windows, each of which corresponds to one of the above-mentioned directions in which said area is accessible. Furthermore, the partitions and the ribs interconnecting them prevent advantageously the fingers of an operator from contacting said terminals, in particular when the base is alive.

The invention will now be described in further detail in the following description, with reference to the appended diagrammatic drawing, which illustrates, by way of nonlimiting example, an embodiment of the base of the invention.

In said drawing:

FIGURE 1 is a partial perspective view of said base, as seen from above,

FIGURE 2 is a partial perspective view of same, as seen from below,

FIGURES 3 and 4 are respectively a top plan view and a front elevation of said base, and

FIGURES 5 and 6 are partly sectional views, along line 5—5 of FIGURE 3, illustrating the two ways for fixing the base of the invention to a supporting metal sheet.

With reference to said figures, the base of the invention comprises a bottom **2** substantially in the shape of a parallelepiped and made of molded or injected material. The upper surface **2***a* of said bottom carries two bosses **3**, which extend parallel to the longitudinal axis **4** thereof. Each boss **3** is provided with recesses **5** adapted to receive the female members of a connection system of a known type.

Each recess **5** opens, of course, on the lower surface **2***b* of the bottom **2**, as shown in FIGURE 2, between transverse partitions **19**, when said lower surface **2***b* is not closed by its cover.

The bottom **2** might, of course, be limited laterally by the two vertical planes illustrated in FIGURE 1 by dot and dash lines **6**, **7**. In such a case, the flat terminals **8**, each of which is electrically connected to one of the female members located in the recesses **5**, are aligned with each other (as shown in FIG. 4) in a plane normal to the planes **6**, **7**, of the lateral surfaces of the bottom **2**, as illustrated by the dot and dash line **9** (FIG. 2). In this way, each flat terminal **8** is accessible from three directions, as illustrated by the arrows **11**, **12**, **13**, which correspond respectively to the upper, lower, and end surfaces thereof.

As shown in FIGURES 5 and 6, a lead **14** can be connected up, in a known manner, to one of the junction areas **8** by means of a strap **15** and a tightening screw **16**, a hole **17** being provided in each area **8** for allowing said screw passing therethrough. Owing to the fact that each terminal **8** is accessible both from above and from below, the strap **15** may be located on the upper surface of said terminal as well as on the lower surface thereof. Owing to this arrangement, the base of the invention is adapted to be secured in either way to a supporting metal sheet **18**, since, whatever the way selected may be, it is possible to effect connections to the terminals **8**.

This advantage is illustrated by FIGURES 5 and 6, which show the bottom **2** secured to the metal sheet **18**

through its lower surface 2*b* and through its upper surface 2*a*, respectively.

Furthermore, the free ends 8*a* of the terminals 8 are bevelled, so as to allow effecting connections thereto by means of clips.

The bottom 2 has, of course, its central portion between the two bosses 3 provided with holes 21, through which bolts 22 pass, to secure the base to the metal sheet 18. Furthermore, recesses 23 having octagonal sections are provided for locating fool-proof positioning devices 24 of a known type.

In the embodiment illustrated in the drawing, partitions 25 are provided between the flat terminals 8, which partitions are normal to the plane 9 in which the areas 8 are aligned, and normal to the plane 6 or 7 of either lateral surface of the bottom 2, said partitions 25 constituting extensions of the above-mentioned transverse partitions 19. Furthermore, the corners of the free sides of said partitions 25 are interconnected by upper and lower ribs 26, 27, respectively.

In this way, each junction area 8 is housed within a cell 28, which cell is provided with three windows 29, 31, 32, which enable said area to remain accessible from the three above-mentioned directions as illustrated by the arrows 11, 12, 13, respectively.

This particular arrangement is advantageous in that it ensures a better insulation of the flat terminals 8 with respect to each other, while preventing, on the other hand, any risk of the fingers of an operator touching them, in particular when the base is alive.

Lastly, as shown in FIGURE 2, the lower ends of the transverse partitions 19 constituting the lower surface 2*b* of the bottom 2 are notched between the inner ends of the partitions 25, that is, between the planes 6 and 7, to enable a removable cover 33 to be fitted thereinto, while the screws 34, which fix the fool-proof positioning devices 24, may be used to fix said cover. The cover 33 holds the flat terminals 8 in position.

According to the provisions of the patent statutes, I have explained the principle of my invention and have described what I now consider to represent its best embodiment.

What I claim is:

1. A base for plug-in electric or electronic assemblies or sub-assemblies, said base having a bottom surface, a top surface and at least one pair of opposed parallel lateral surfaces and including a plurality of female members adapted to receive each one a plug contact and a plurality of flat terminals, each of said female members being electrically connected to one of said terminals and said terminals having each a free extremity and being aligned with each other on each of said two opposed parallel lateral surfaces, substantially in a plane perpendicular to the planes of said surfaces, said base being provided in the vicinity of each of said lateral surfaces with apertures permitting access both to each face and to the free extremity of each of said flat terminals.

2. A base as claimed in claim 1, wherein each of said flat terminals is traversed by a central hole, whereas the free extremity thereof is bevelled.

3. A base as claimed in claim 1, wherein said apertures are defined by parallel partitions disposed between adjacent flat terminals perpendicular to both said lateral planes and to the plane along which said terminals are aligned with each other, and by angle ribs located along the intersections of said bottom and top surfaces and of said lateral surfaces, said ribs rigidly connecting said partitions which are perpendicular thereto.

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U.S. Cl. X.R.

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