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(54) **Modular fast-on covers combinable in blocks**

(57) Combinable modular fast-ons comprising insulating cases or shells (112) each other fastenable by means of cylindrical reliefs (126) fastened to a first side wall (116a) thereof and engaging corresponding cylindrical slots (130) of a second side wall (116b) of an adjacent insulating shell. The cylindrical reliefs (126) and the corresponding cylindrical slots (130) are so sized in order allow a steady enough engagement to avoid unwanted separation between adjacent each other engaged shells.

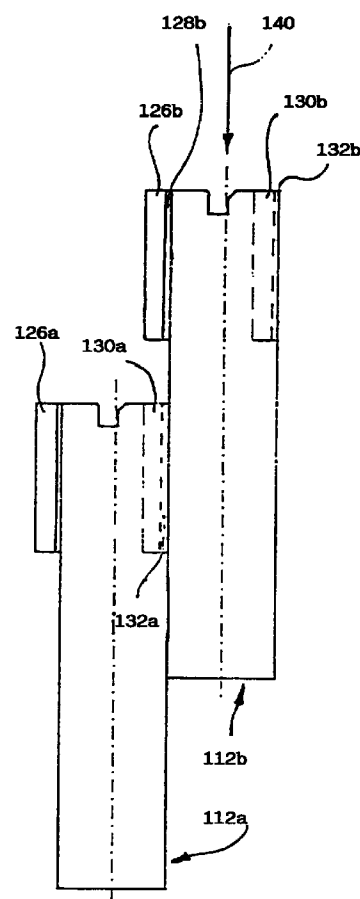


FIG. 5

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Description

The present invention relates to insulating modular fast~ons, combinable at will in the desired number.

Since long time are well known the connecting electric components indicated by the name "fast~on". For praticity and safety purposes since long time these fast~on are provided with insulating cases or shells making them particularly handy and safe.

Often it happens that it has to provide for the contemporary either connection or detachment of more than one connector and, in the case that these connectors are of the above mentioned fast~on kind, it has been devised to connect them into multiple insulating fast~on covers. These multiple fast~ on covers were hitherto manufactured with a fixed recess number housing thereinto a fixed fast~on number.

Presently arises the need from many manufacturers of electric and electronic equipments, particularly those most economical and consumer, of fast~on connectors combinable in any desired number which may time~to~time change. The use of multiple fast~on covers having a fixed number of recesses is not always practical enough because it may happen that the fast~ons to be used are too high in number with respect to the number present in a usual multiple fast~on cover, so that it may happen to use a multiple fast~on cover with a number of recesses lesser than necessary with the addition of one or more fast~ons with the related single fast~on cover. The solution is not very practical because the fast~ons disconnected from the other ones must be either connected or disconnected singularly, loosing a good part of the advantages of assembly and/or maintenance time savings connected with the multiple fast~on covers.

It may have devised to face this problem of time loosing, by using multiple fast~on covers having a number of recesses either equal or higher than the necessary number, so that the connection and disconnection operations can be always done through just one operation, however even if this system saves some time, however is not economical because of possible components used in excess and may also give rise to space problems when the number of extra recesses imposes no always bearable encumbrances.

To remedy the above mentioned drawbacks, the present invention proposed modular fast~on covers combinable in the desired number according to the need.

In accordance with the present invention, are used single modular fast~on covers, comprising insulating case or shells, provided on a first side wall with protruding means and on an opposed side wall with recessed means , in such a way that to any protruding means on a side wall of a shell corresponds a recessed means on the wall of any adjacent shell and vice versa.

Preferably, the insulating shells are in the shape of parallepipeds, whose smaller faces have openings for the entry of the fast~ons, the protruding means are in

the form of cylindrical reliefs, of limited length, arranged with their axis parallel with respect the longer edges of the insulating shells and connected to the corresponding face of the insulating shells by ribs straight and parallel with respect to the axes of the cylindrical reliefs and the recessed means are cylindrical slots, having the same length of the cylindrical reliefs, open to the adjacent side face of the insulating shell through straight slits, substantially parallel to the axis of the cylindrical slot, having size in conformity with the corresponding straight ribs.

To embody the above mentioned proposal it has been devised to make the fast~on covers modular and combinable as single insulating shells each other joint engageable by means protruding from a shell and insertable in corresponding recessed means on an adjacent shell, being the protruding means insertable in corresponding recessed means to a stopping point providing to reciprocally align the each other engaged shells

More preferably, cylindrical reliefs, straight ribs, cylindrical slots and straight slits are selected of such a size to allow a forced insertion of the protruding means in the recessed means to avoid an unwanted separation of fast~on covers each other engaged.

The features of the present invention will result particularly defined in the claims forming the conclusive portion of the present description. However, said features, together with other features and advantages, will result more evident from the following detailed description on an embodimente thereof, given for depicting and not limiting purposes, and provided with the enclosed figures, in which:

- ~ Figure 1 is a front view of a typical block of six fast~on covers of the prior art;
- ~ Figure 2 is a cross~section view of the same fast~on cover block taken along the line 2~2 of figure 1;
- ~ Figure 3 is an assonometric front view of a modular fast~on cover member combinable in blocks according to the present invention;
- ~ Figure 4 is an assonometric rear view of the same modular fast~on cover member;
- ~ Figure 5 is a lateral elevation view of a pair of fast~on cover members depicting how they are each other iserted and secured; and
- ~ Figure 6 is a front elevation view of a block comprised of six fast~on cover members according to the invention, particularly showing how they have each other fastened the members according to the present invention.

Looking first at figures 1 and 2, depicting a six place fast~on cover 10 of the prior art, it is seen that said fast~on cover 10 comprises an insulating shell 12 shared into a plurality of chambers 14a~f separated by insulating dividing walls 16a~g. The chambers 14a~f have an upper wall 18, divided in sectors 18a~f, operat-

ing as a stop of possible fast~ons tehereinto inserted.

Some internal reliefs 20a~f cooperate with protrusions 22a~f and 24a~f to maintain the fast~ons within the fast~on covers 10, once they have been.

Some further reliefs 26a~f (of which only the relief 26a is clearly indicated) cooperate to keep fastened any fast~on in its corresponding chamber 14a~f.

Reference is made to one or more modular fast~on cover members according to the present invention which are separately depicted in the figures 3 and 4 and collectively depicted in the figures 5 and 6 as composed blocks.

As visible in the figures 3 and 4, any fast~on cover comprises an insulating shell 112, of substantially parallelepipedal shape, delimitating an internal chamber 114 provided with lateral walls 116a and 116b, respectively, of which the first one, 116a, has a relief 126, substantially cylindrical connected through a rib 128 to the side wall 116a and the second one, 116b, is provided with a slot 130 of cylindrical shape outside open by a straight slit 132, the slot 130 and the slit 132 having complementary shapes with respect to the cylindrical relief 126 and the rib 128.

The reciprocal engagement between adjacent fast~on cover members is clearly understood in figure 5 where two insulating shells 112a and 112b are each other coupled.

Looking in detail at figure 5, it is seen that to each other couple the two shells 112a and 112b, they have to be side~by~side placed to make seat a lateral wall of the first shell, having the slot 130a, against the lateral wall of the second shell, having the cylindrical relief 126b. At this time the lateral wall of the shell 112b is made to slide along the corresponding wall of the shell 112a, according to the direction indicated by the arrow 140, till the cylindrical relief 126b enters the corresponding slot 130a, by engaging its rib 128b in the corresponding slit 132a of the adjacent shell 112a. The cylindrical reliefs 126 with their ribs 128 and the corresponding cylindrical slots 130 with the slits 132 are so sized to allow a safe reciprocal engagement not allowing an easy detachment of each other engaged shells.

Reference is made to figure 6 in which is depicted a multiple fast~on cover 110 comprising combinable modular members embodied according to the present invention.

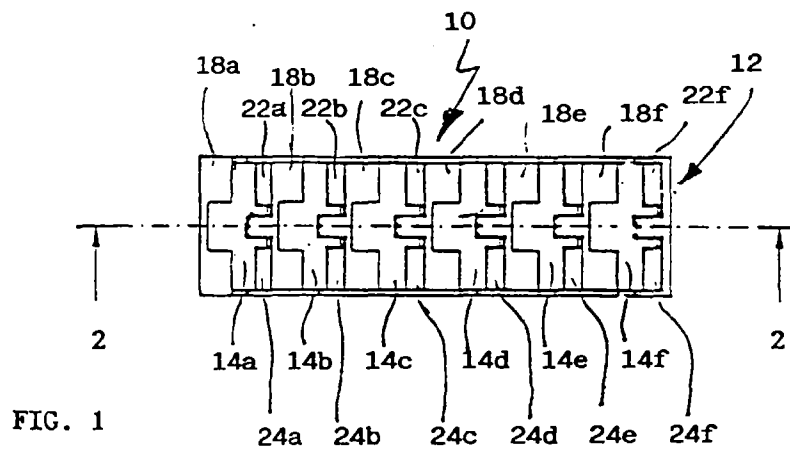
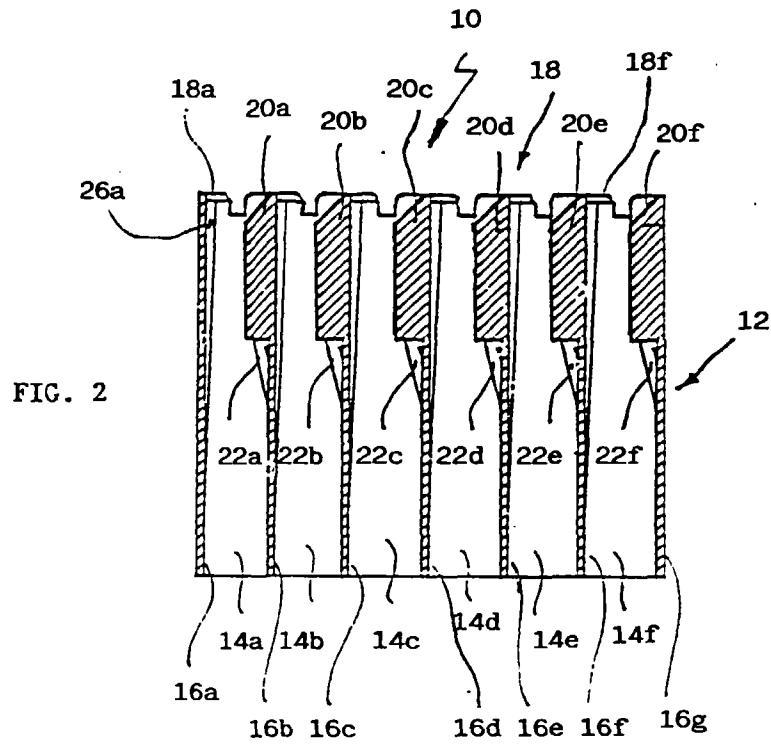
As it is seen in the above mentioned figure 6, the multiple fast~on cover 110 is formed by a plurality of insulating shells 112a~f (six in this case) each other engaged by cylindrical reliefs 126b~f inserted in corresponding cylindrical slots 130a~e in such a way to have the insulating shell 112a~f each other aligned.

What has been hereabove disclosed is just a preferred embodiment of the present invention, not to be absolutely considered as limiting thereof.

However, anyone skilled in this art will devise logically similar and equivalent approaches to be deemed as here covered, as specified in the appended claims.

Claims

1. Modular fast~on covers combinable in blocks characterized by comprising insulating shells (112) provided on a first lateral wall (116a) with recessed means (130) in such a way that to any means (126b) protruding from a lateral wall (116a) of a shell (112b) corresponds a recessed means (130a) on the wall (116b) of an adjacent shell (112a) and vice versa.
2. Modular fast~on covers as in claim 1, characterized in that the insulating shells (112) are parallelepipedal in shape, and their smaller face have opening for the entrance of fast~ons, the protruding means (126) are in the shape of cylindrical reliefs, of limited length, arranged with their axis parallel with respect the longest edges of the insulating shells (112) and connected to the corresponding face (116a) of the insulating shells (112) by ribs (128) straight and parallel with respect to the axes of the cylindrical reliefs (126), open to the adjacent lateral face (116b) of the insulating shell (112) through straight slits (132), substantially parallel with respect to the axis of the cylindrical slot (130), of size conformed to that of the corresponding straight ribs (128).
3. Modular fast~on covers as in claim 2, characterized by being combinable as individual insulating shells (112) each other joint engageable by means (126b) protruding from a shell (112b) insertable in corresponding recessed means (130a) on an adjacent shell (112a), the protruding means (126b) are inserted in the recessed means (130a) till a stopping point providing to each other align the each other engaged individual shells (112).
4. Modular fast~on covers as in preceding claims, characterized in that the cylindrical reliefs (126), the straight ribs (128), the cylindrical slots (130) and the straight slits (132) are chosen of such a size to allow a forced insertion of the protruding means (126) in the recessed means (130) to avoid an unwanted separation of each other engaged fast~on covers.



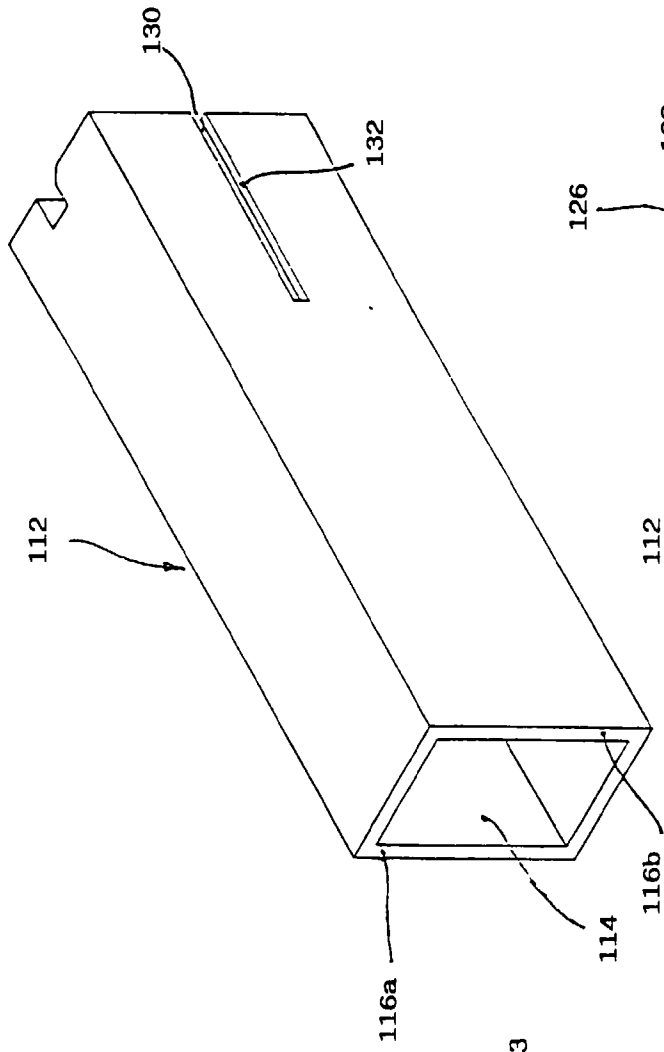


FIG. 3

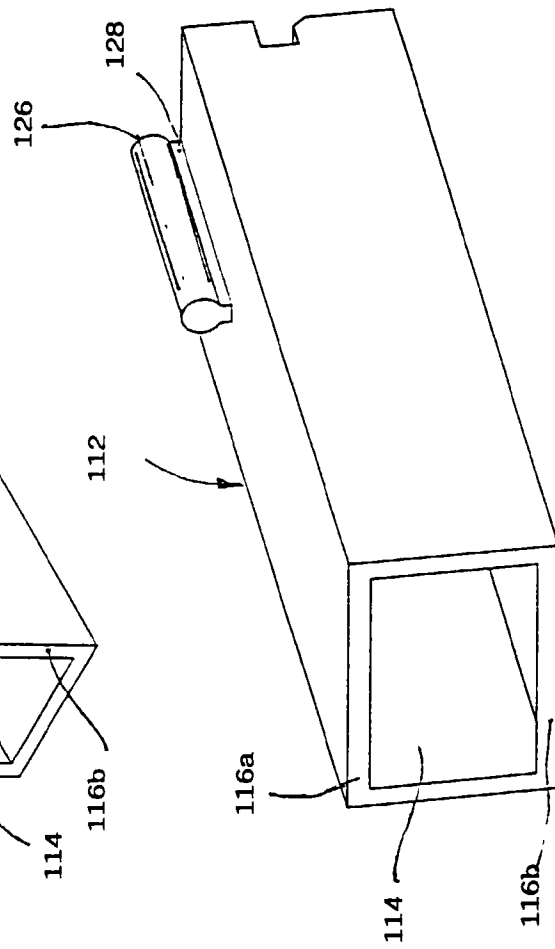


FIG. 4

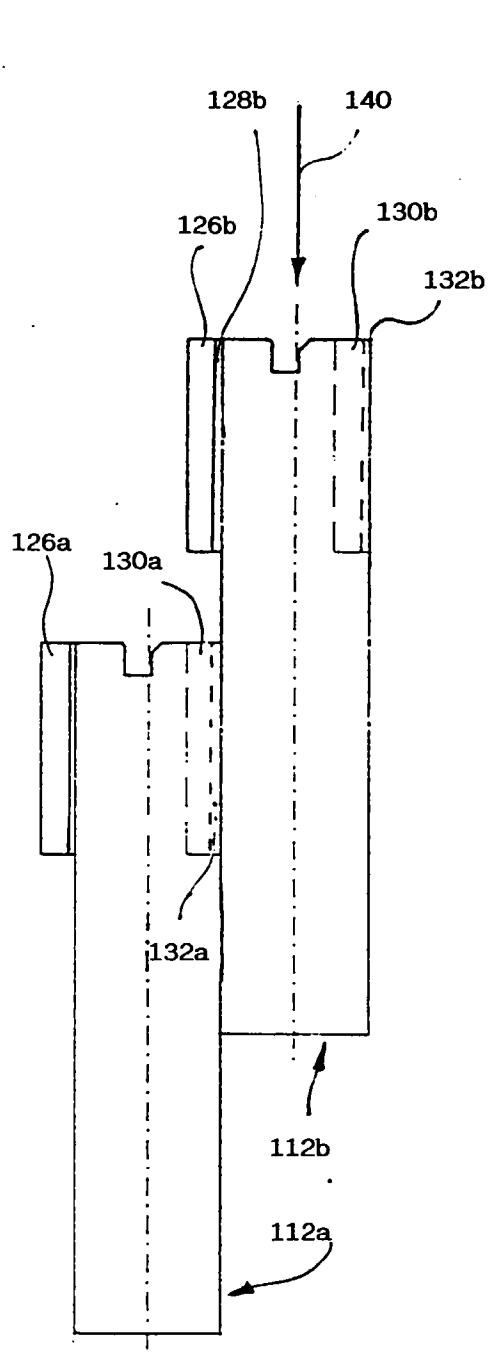


FIG. 5

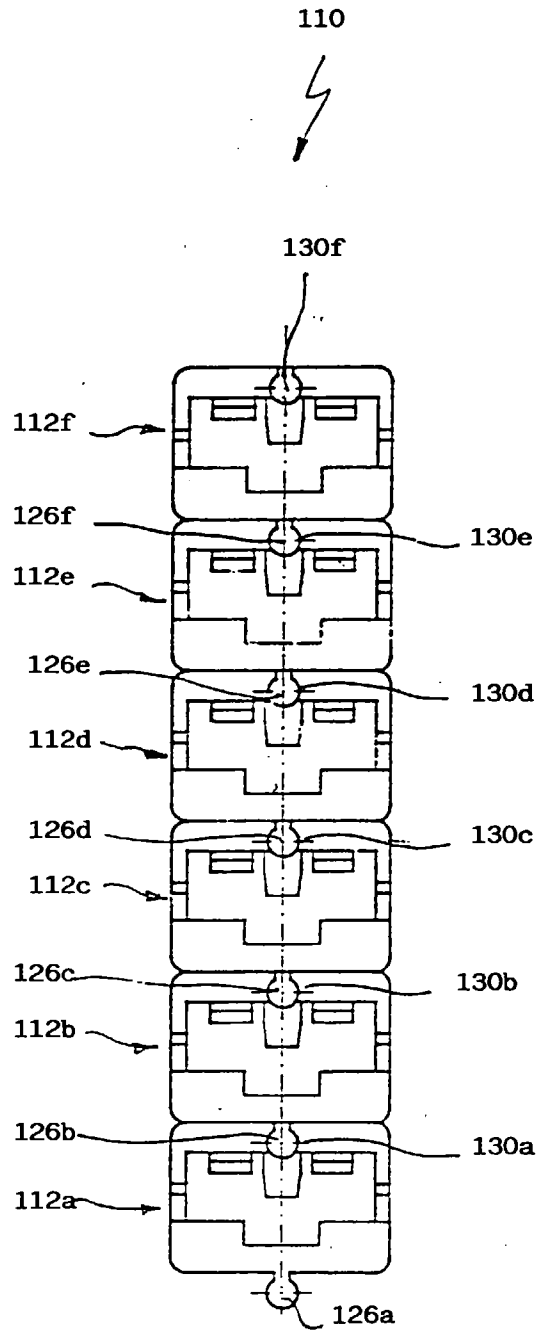


FIG. 6