

S P E C I F I C A T I O N

The invention relates to a device for rapid releasable attachment of housings of electrical serially-mounted apparatuses such as safety switches, automatic staircase-lighting-systems and the like to a profiled mounting rail according to the preamble of claim 1.

Such devices are intended to provide the possibility for rapid and easy individual mounting or dismounting of safety switches, staircase-lighting-systems, control apparatuses and the like, which are stationarily combined in house-distributions and the like, wherein the serially-mounted apparatuses in the rapid attached state have to be supported for electro-installation and handling in a position-safe manner.

From the German utility model GM 75 22 267 a switching apparatus' attachment of the above mentioned kind is already known, wherein in a printed circuit side board of the switching apparatus a gripping element with two arms is pivotable supported comprising a hook-formed arm which is provided for gripping the mounting rail from behind and which comprises a longer arm being insertable to the board in two different recesses by a pin. This known device has the disadvantage that for its functioning a special design of the printed circuit side board of the serially-mounted apparatus housing is necessary and that the handling of this known device is not possible from the front-side but only from the board-side. Therefore, the use of this device is ruled out for side by side serially-mounted apparatuses.

It is the object of the invention to provide a device of the above-mentioned kind which is easy to handle because of its construction.

This object is achieved according to the features in the characterizing portion of claim 1. Further embodiments of the present invention are characterized by the subclaims.

The invention provides advantageously a coupling member in a one-part form and being inherently resilient because of its design which can be inserted into the outer contour of the serially-mounted apparatus without any problems, and which then serves reliably for a rapid releasable attachment of that apparatus to the mounting rail with the coupling member being inherently resiliently lockable both in the attached position as well as in the not-attached position to a suitable housing projection. Releasing the attachment is also very easy because only a manual displacement of the serially-mounted apparatus relative to the mounting rail against the engagement nose of the coupling member gripping from behind is necessary, wherein the coupling member is then disengaged from its engagement position securing the rapid releasable attachment. A handling from the front-side is thereby facilitated by the angled activating end of the activating portion.

The pins being preferably disposed on the inner side of the legs of the coupling member can advantageously be snapped in provided bearing holes in the housing, wherein preferably the pins are formed bevelled in the direction of attachment to make the mounting easier. Thus, the coupling element can be "unloosable" coupled to the housing in a simple manner.

For the inherent resilient locking of the coupling element to the housing in the attached position the coupling element, according to a preferred embodiment, is provided on its inner side with two locking cams near the activating end, which are lockable with a suitable projection on the outer side of the housing.

According to a further embodiment of the invention the legs of the coupling element are provided with a recess by means of which the coupling element is engageable in its not-attached position to a suitable housing projection.

The invention will be explained in detail with respect to the accompanying drawings. Shown are:

Fig. 1 a schematic side view of a serially-mounted apparatus in an attached position to a profiled mounting rail using an embodiment of a device according to the invention for rapid releasable attachment; and

Fig. 2 the serially-mounted apparatus, as shown in Fig. 1, in a released state after lateral displacement with respect to the mounting rail.

As can be seen from the Figs., a serially-mounted apparatus can be attached with its housing 1 to a mutual mounting rail 4 through a coupling element 3 provided below one of the connection clams 2 and can be electrically connected in the connection region - parallel to that mounting rail - to a bus bar 5.

The coupling element 3 has therein the form of a U-shaped arc made of plastic which is provided on its legs with hook-shaped pins for engagement in the bearing hole 6 on both sides of the housing 1. Furthermore, the coupling member 3 comprises a frame-like extended connector web and a slot 7 extending into the legs and further an engagement end 8 slidably extending over the profile of the mounting rail 4 whereat furthermore an activating end 9 is provided, which is lockable in the end positions of the coupling member 3 to the housing 1. For this purpose this activating end 9, opposite the slot-like extended

bearing hole 6 is inherently resiliently angled and provided with locking cams 10 extending inwards on both sides for engagement in corresponding recesses 11 on the side of the housing 1. On the other hand, at the top of the legs a concavity 20 is provided for securing the coupling element 3 in its unlatched position on an externally-located housing projection 12.

Accordingly, during its mounting, the coupling member 3 is easily pushed from below with the pins bevelled for this purpose elastically onto the leg ends over the (if necessary) chamfered lower edge of the housing and suspended in the bearing holes 6, in order to support pivotably the coupling element 3 thereafter within the limits of the wall recesses 13 present on both outer sides of the housing 1 and to facilitate the locking to the mounting rail 4 and to the housing 10/11 itself at the same time and to facilitate out of this position the unlocking releasing the mounting rail 4 and the bus bar 5 in the region of the connector clamp 2 of the assembly apparatus. The coupling element 3 is by this way also in its end position (at 12) releasably secured on the housing 1.

CLAIMS

1. A device for rapid releasable attachment of housings of electrical serially-mounted apparatuses, such as safety switches, automatic staircase-lighting-systems and the like to a profiled mounting rail, comprising
a coupling member (3) being pivotable by means of projecting with pins on a housing (1) of the apparatus, said coupling member (3) having an engagement end (8) with an engagement nose gripping said mounting rail (4) from behind in an attached position and an activating portion which is inherently resiliently lockable on the housing (1) in the attached position of said coupling member (3)
characterized in that
said coupling member (3) has the form of a U-shaped arc provided with legs and a frame-like extended connector web,
wherein said activating portion comprises an activating end (9) being angled relative to said engagement end (8).
2. A device according to claim 1
characterized in that
said pins are disposed on the inner side of the legs of said coupling member (3).
3. A device according to claim 1 or 2
characterized in that
said coupling member (3) is attachable to said housing (1), with said pins being bevelled in the direction of attachment thus facilitating the mounting.



4. A device according to any one of the preceding claims characterized in that said coupling member (3) comprises two locking cams (10) on the inner side close to said activating end (9).
5. A device according to any one of the preceding claims characterized in that the legs of said coupling member (3) are provided with a concavity (20) by means of which said coupling member (3) is engageable in its not attached position to with a suitable housing projection (12).

