

(12) STANDARD PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. **AU 2009203003 B2**

(54) Title
**Device for receiving a subassembly assigned to an optical fibre cable and for fasten-
ing the same to a mounting**

(51) International Patent Classification(s)
G02B 6/46 (2006.01) **H02G 3/12** (2006.01)

(21) Application No: **2009203003** (22) Date of Filing: **2009.07.23**

(30) Priority Data

(31)	Number	(32)	Date	(33)	Country
	08 014 476.9		2008.08.14		EP

(43) Publication Date: **2010.03.04**

(43) Publication Journal Date: **2010.03.04**

(44) Accepted Journal Date: **2014.07.24**

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(56) Related Art
US 2007/0047897

DEVICE FOR RECEIVING A SUBASSEMBLY ASSIGNED TO AN OPTICAL FIBRE CABLE AND FOR FASTENING THE SAME TO A MOUNTING

ABSTRACT

The invention relates to a device (20) for receiving a subassembly, in particular a plug
5 or a socket or a furcation adaptor, assigned to an optical fibre cable and for fastening the
subassembly received on the device to a mounting, in particular to a wall of a distribution panel
or distribution cabinet, via the device, with a bar-shaped basic body (23), there being formed on
a topside of the basic body a guide rail (26), onto which, to receive the subassembly assigned to
the optical fibre cable, the latter can be pushed, there being formed on an underside, in the region
10 of mutually opposite ends of the basic body, anchoring elements (29, 30), via which the device
can be introduced into recesses of the mounting, and the anchoring element (30) which is
assigned to a front end of the basic body (23) as seen in the push-on direction of the
subassembly, being an integral part of a stop (31) of U-shaped cross section, acting in the push-
on direction, for the subassembly. According to the invention, the stop (31) of U-shaped cross
15 section is designed in such a way that a closed portion (32) of the U-shaped stop (31) on the
underside (25) of the basic body (23) projects with respect to the latter, in such a way that, when
the subassembly received on the device is fastened to the mounting, the closed portion (32) of
the U-shaped stop (31) can be introduced into a recess of the mounting.

2009203003 23 Jul 2009

S&F Ref: 914737

AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

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Invention Title:	Device for receiving a subassembly assigned to an optical fibre cable and for fastening the same to a mounting

The following statement is a full description of this invention, including the best method of performing it known to me/us:

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**Device for receiving a subassembly assigned to an optical fibre cable
and for fastening the same to a mounting**

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The invention relates to a device for receiving a subassembly assigned to an optical fibre cable and for fastening the subassembly received on the device to a mounting via the device according to the introducing portion of claim 1.

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Figure 1 shows a device, known from the prior art, for receiving a subassembly, in particular a furcation adaptor, assigned to an optical fibre cable and for fastening the subassembly received on the device to a mounting, particularly to a wall of a distribution panel or distribution cabinet via the device. The device 10, shown in a side view in Figure 1, has a bar-shaped basic body 11 with a topside 12 and with an underside 13. On the topside 12 of the basic body 11, a guide rail 14 is formed, which extends approximately parallel to the bar-shaped basic body 11 and onto which, to receive the subassembly assigned to the optical fibre cable, the respective subassembly can be pushed in such a way that, when the subassembly is pushed onto the guide rail 14, the guide rail 14 engages into a groove formed on the subassembly to be received. A subassembly to be received on the device 10 is pushed onto the guide rail 14 in the direction of the arrow 15 shown in Figure 1. The arrow 15 therefore indicates the direction in which a subassembly to be received by the device 10 and assigned to an optical fibre cable is pushed onto the guide rail 14.

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In the region of the underside 13 of the bar-shaped basic body 11, anchoring elements 16 and 17 are formed in the region of mutually opposite ends of the basic body 11.

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Thus, at the rear end of the basic body 11, as seen in the push-on direction 15, the anchoring element 16 is formed on the underside 13 of the latter, and, at the front end of the bar-shaped basic body 11, as seen in the push-on direction 15, the anchoring element 17 is formed, the device 10 according to the invention, via the two anchoring elements 16, 17, being able to be introduced into recesses of a mounting, to which the device 10, together with the subassembly received by it and assigned to the optical fibre cable, is to be fastened. According to Figure 1, in this case, the anchoring element 17 positioned at the front end, as seen in the push-on direction 15, of the bar-shaped basic body 11 is designed as an integral part of a stop 18 of U-shaped cross section, this stop 18 being effective in the push-on direction 15 and therefore, in the push-on direction 15, forming a stop for a subassembly to be pushed onto the guide rail 14.

The device 10 known from the prior art, as illustrated in Figure 1, has the disadvantage that, when it is fastened via its anchoring elements 16, 17 to a mounting, for example a wall of a distribution panel or distribution cabinet, and a force is exerted on the stop 18 of U-shaped cross section via the optical fibre cable or the subassembly received by the device 10 and assigned to the optical fibre cable, the anchoring elements 16, 17 may come loose from the mounting, in that they jump out of the recesses of the mounting into which they are introduced. In this case, a secure fastening of the device 10 to the mounting is no longer ensured. This is a disadvantage.

There is therefore a need for a device in which there is no risk that it comes loose unintentionally from a mounting. There is a further need to provide a device for receiving a subassembly assigned to an optical fibre cable and for fastening the same to a mounting.

The object of the present invention is to at least substantially meet the above needs or at least provide a useful alternative.

An aspect of the present invention provides a device for receiving a subassembly, in particular a plug or a socket or a furcation adaptor, assigned to an optical fibre cable and for fastening the subassembly received on the device to a mounting, in particular to a wall of a distribution panel or distribution cabinet, via the device, the device comprising a bar-shaped basic body, there being formed on a topside of the basic body a guide rail, onto which, to receive the subassembly assigned to the optical fibre cable, the latter can be pushed, there being formed on an underside, in the region of mutually opposite ends of the basic body, anchoring elements, via which the device can be introduced into recesses of the mounting, and the anchoring element, which is assigned to a front end of the basic body as seen in the push-on direction of the

subassembly, being an integral part of a stop of U-shaped cross section, acting in the push-on direction, for the subassembly, wherein the stop of U-shaped cross section is designed in such a way that a closed portion of the U-shaped stop on the underside of the basic body projects with respect to the latter, in such a way that, when the subassembly received on the device is fastened to the mounting, the closed portion of the U-shaped stop can be introduced into a recess of the mounting, and that in the region of the topside of the basic body, an elastically deformable stop, acting opposite to the push-on direction, for the subassembly is formed at a rear end of the basic body, as seen in the push-direction of the subassembly.

In an embodiment, the U-shaped stop is designed in such a way that on the underside of the basic body a closed portion of the U-shaped stop projects with respect to the latter, in such a way that, when the subassembly received on the device is fastened to the mounting, the closed portion of the U-shaped stop can be introduced into a recess of the mounting.

In another embodiment, the stop of U-shaped cross section is designed in such a way that the closed portion of the latter is formed on the underside of the basic body or projects with respect to the underside of the basic body. Consequently, when the device is fastened to the mounting, the closed portion of the U-shaped stop can be introduced into a recess of the mounting. If a force is exerted in the push-on direction on the U-shaped stop via the optical fibre cable or the subassembly which is assigned to the optical fibre cable and is pushed onto the guide rail of the device, the device arches on its underside in such a way that the anchoring elements of the latter are hooked up in the region of the recesses of the mounting, so that there is no risk that the anchoring elements of the device come loose from the recesses of the mounting. Therefore, there is no risk that it comes loose in an unwanted way from a mounting.

According to a preferred embodiment, in the region of the topside of the basic body, an elastically deformable stop, acting opposite to the push-on direction, for the subassembly is formed at a rear end of the basic body, as seen in the push-on direction of the subassembly.

Exemplary embodiments are explained in more detail with reference to the drawings in which:

Figure 1 shows a device, known from the prior art, for receiving a subassembly assigned to an optical fibre cable and for fastening

the subassembly received on the device to a mounting, in a side view;

5 Figure 2 shows a device according to the invention for receiving a subassembly assigned to an optical fibre cable and for fastening the subassembly received on the device to a mounting, in a perspective view;

Figure 3 shows the device of Figure 2 in a side view;

Figure 4 shows the detail IV of Figure 2;

Figure 5 shows the detail V of Figure 2;

10 Figure 6 shows the device of Figure 2 together with an optical fibre cable and with a subassembly which is assigned to the optical fibre cable and is received on the device;

Figure 7 shows the detail VI of Figure 6; and

Figure 8 shows the detail of Figure 7 in a perspective view.

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Figures 2 and 3 show different views of a device 20 according to the invention for receiving a subassembly, such as, for example, a plug or a socket or a furcation adaptor, assigned to an optical fibre cable and for fastening the subassembly received on the device 20 to a mounting, such as, for example, a wall of a distribution panel or distribution cabinet, via the device.

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Figures 4 and 5 show details of the device 20 according to the invention.

25 Figures 6 to 8 show the device 20 according to the invention in each case together with a subassembly 22 which is assigned to an optical fibre cable 21 and which is received on the device 20 according to the invention, the subassembly 22, shown in Figures 6 to 8, which is assigned to the optical fibre cable 21, being what is known as a furcation adaptor.

30 The device 20 according to the invention has a bar-shaped basic body 23 with a topside 24 and with an underside 25. On the topside 24 of the bar-shaped basic body 23, a guide rail 26 is formed, which extends approximately parallel to the bar-shaped basic body 23 and which is connected to the latter via portions 27.

The subassembly 22, shown in Figure 6, which is assigned to the optical fibre cable 21 can be pushed onto the guide rail 26 in the direction of the arrow 28 shown in Figure 2, for this purpose the guide rail 26 engaging into a groove, not illustrated in detail, which is formed on the subassembly 22. The arrow 28 therefore indicates the direction in which the subassembly 22 assigned to the optical fibre cable 21 is pushed onto the guide rail 26 of the device 20 according to the invention.

At mutually opposite ends of the bar-shaped basic body 23, anchoring elements 29 and 30 are formed, via which the device 20 according to the invention can be fastened to a mounting, in particular a wall of a distribution panel or distribution cabinet, specifically in such a way that, in this case, the anchoring elements 29, 30 can be introduced in a barb-like manner into recesses of the mountings and thus project into the recesses of the mounting.

The anchoring element 30 positioned at the front end of the bar-shaped basic body 23, as seen in the push-on direction 28, is in this case formed as part of a stop 31 of U-shaped cross section, the stop 31 being effective, as seen in the push-on direction 28, as a stop for the subassembly 22 of the optical fibre cable 11.

According to this invention, the stop 31 of U-shaped cross section is designed in such a way that a closed portion 32 of the latter is formed on the underside 25 of the bar-shaped basic body 23 or projects with respect to the underside 25 of the bar-shaped basic body 23. By contrast, the stop 31 of U-shaped cross section is designed to be open in the region of the topside 24 of the bar-shaped basic body 23.

When the device 20 according to the invention, together with a subassembly 22 received on the latter and assigned to the optical fibre cable 21, is to be fastened to a mounting, the stop 31 of U-shaped cross section engages with the closed portion 32 into a recess of the mounting.

When a force is exerted on the stop 31 in the push-on direction 28 via the optical fibre cable 21 or via the subassembly 22 assigned to the optical fibre cable 21, the stop 31 of U-shaped cross section is subjected,
5 according to Figure 6, to a deformation in the direction of the arrow 33, with the result that the bar-shaped body 23 ultimately arches and the anchoring elements 29, 30 of the latter are clamped in the region of the recesses of the mountings.

10 There is then no risk that the anchoring elements 29, 30 jump out of the recesses of the mountings inadvertently and the device 20 comes loose from the mounting inadvertently.

According to an advantageous development of the invention, in the region
15 of the topside 24 of the bar-shaped basic body 23, an elastically deformable stop 34 acting opposite to the push-on direction 28, for the subassembly 22 assigned to the optical fibre cable 21 is formed at the rear end of the basic body 23, as seen in the push-on direction 28.

20 The stop 34 acting opposite to the push-on direction 28 can be elastically deformed or pressed in the direction of the topside 24 of the basic body 23 both in order to push the subassembly 22 assigned to the optical fibre cable 21 onto the guide rail 26 and in order to remove the same from the guide rail 26.

25 At the free end of the elastically deformable stop 34, the latter has a ramp-shaped projection 35, which, according to Figures 7 and 8, when the subassembly 22 is pushed onto the device 20, covers a contour of the subassembly 22 in regions, so that, when a force is exerted opposite to the
30 push-on direction 28 on the optical fibre cable 21 or the subassembly 22, the subassembly 22 presses against the ramp-shaped projection 35 of the stop 34 and thus prevents the situation where the subassembly 22 can be inadvertently pushed off from the guide rail 26.

If the subassembly 22 is to be intentionally removed from the device 20, the ramp-shaped projection 35 of the stop 34 is suppressed in the direction of the topside 24, specifically in such a way that it is pressed under the contour of the subassembly 22 and therefore does not obstruct the removal
5 of the subassembly 22 from the device 20. When the subassembly 22 is pushed onto the device 20 or the guide rail 26 of the latter, the ramp-shaped projection 35 of the stop 34 is likewise pressed under the contour of the subassembly 22, while, after the subassembly 22 has been pushed completely onto the device 20, the stop 34 returns automatically, and the
10 ramp-like projection 35 then once again partially covers the contour of the subassembly 22.

The subassembly 22 can be attached to the device 10 and removed from the device 10 before and after the device 10 has been fastened to the
15 mounting.

List of reference signs

10	device
11	basic body
12	topside
13	underside
14	guide rail
15	push-on direction
16	anchoring element
17	anchoring element
18	stop
20	device
21	optical fibre cable
22	subassembly
23	basic body
24	topside
25	underside
26	guide rail
27	portion
28	push-on direction
29	anchoring element
30	anchoring element
31	stop
32	portion
33	arrow
34	stop
35	projection

CLAIMS

1. Device for receiving a subassembly, in particular a plug or a socket or a furcation adaptor, assigned to an optical fibre cable and for fastening the subassembly received on the device to a mounting, in particular to a wall of a distribution panel or distribution cabinet, via the device, the device comprising a bar-shaped basic body, there being formed on a topside of the basic body a guide rail, onto which, to receive the subassembly assigned to the optical fibre cable, the latter can be pushed, there being formed on an underside, in the region of mutually opposite ends of the basic body, anchoring elements, via which the device can be introduced into recesses of the mounting, and the anchoring element, which is assigned to a front end of the basic body as seen in the push-on direction of the subassembly, being an integral part of a stop of U-shaped cross section, acting in the push-on direction, for the subassembly, wherein the stop of U-shaped cross section is designed in such a way that a closed portion of the U-shaped stop on the underside of the basic body projects with respect to the latter, in such a way that, when the subassembly received on the device is fastened to the mounting, the closed portion of the U-shaped stop can be introduced into a recess of the mounting, and that in the region of the topside of the basic body, an elastically deformable stop, acting opposite to the push-on direction, for the subassembly is formed at a rear end of the basic body, as seen in the push-direction of the subassembly.
2. Device according to Claim 1, wherein, to push the subassembly assigned to the optical fibre cable onto the guide rail, the stop acting opposite to the push-on direction can be pressed elastically in the direction of the topside of the basic body.
3. Device according to Claim 1 or 2, wherein, to remove the subassembly assigned to the optical fibre cable from the guide rail, the stop acting opposite to the push-on direction can be pressed elastically in the direction of the topside of the basic body.
4. Device according to Claim 2 or 3, wherein, in this case, a ramp-shaped projection of the stop can be pressed under a contour of the subassembly to be pushed on or to be removed, so that the stop does not obstruct the pushing or removal of the subassembly assigned to the optical fibre cable onto or from the guide rail, the ramp-shaped projection of the stop subsequently returning automatically, so that, when the subassembly is pushed onto the guide rail, the

ramp-shaped projection partially covers the contour of the pushed-on subassembly and forms the stop, acting opposite to the push-on direction, for the subassembly.

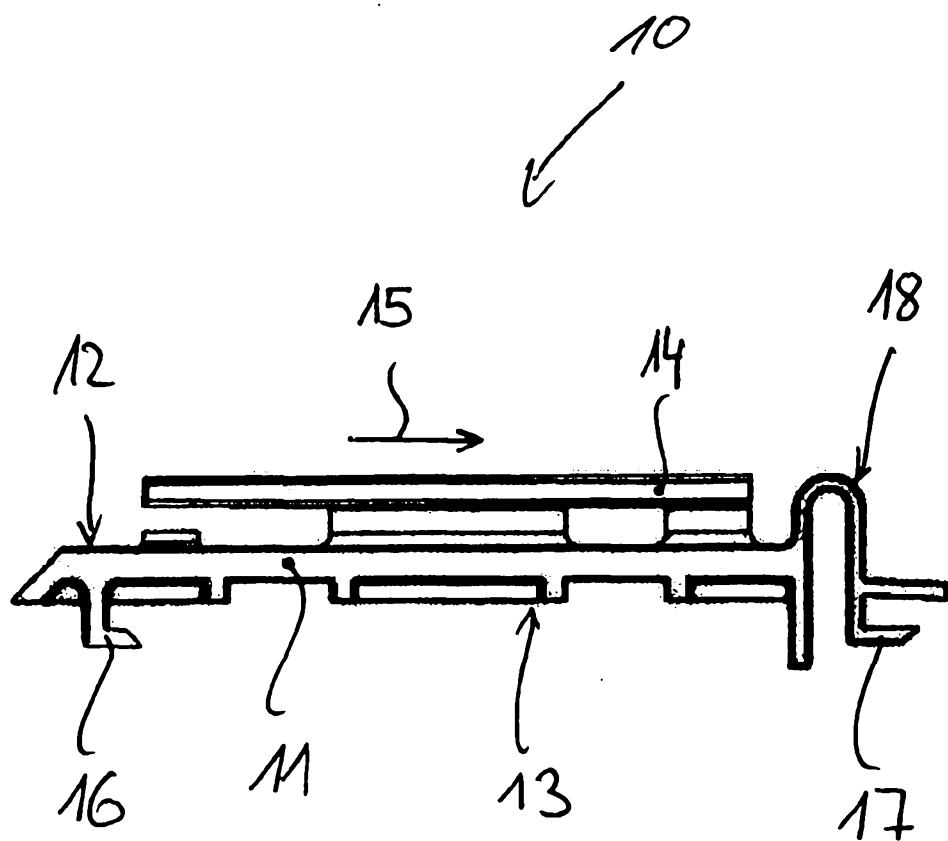
5. Device for receiving a subassembly substantially as hereinbefore described with reference to any one of the embodiments as that embodiment is shown in the accompanying drawings.

CCS Technology, Inc.

Patent Attorneys for the Applicant/Nominated Person

SPRUSON & FERGUSON

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PRIOR ART

Fig. 1

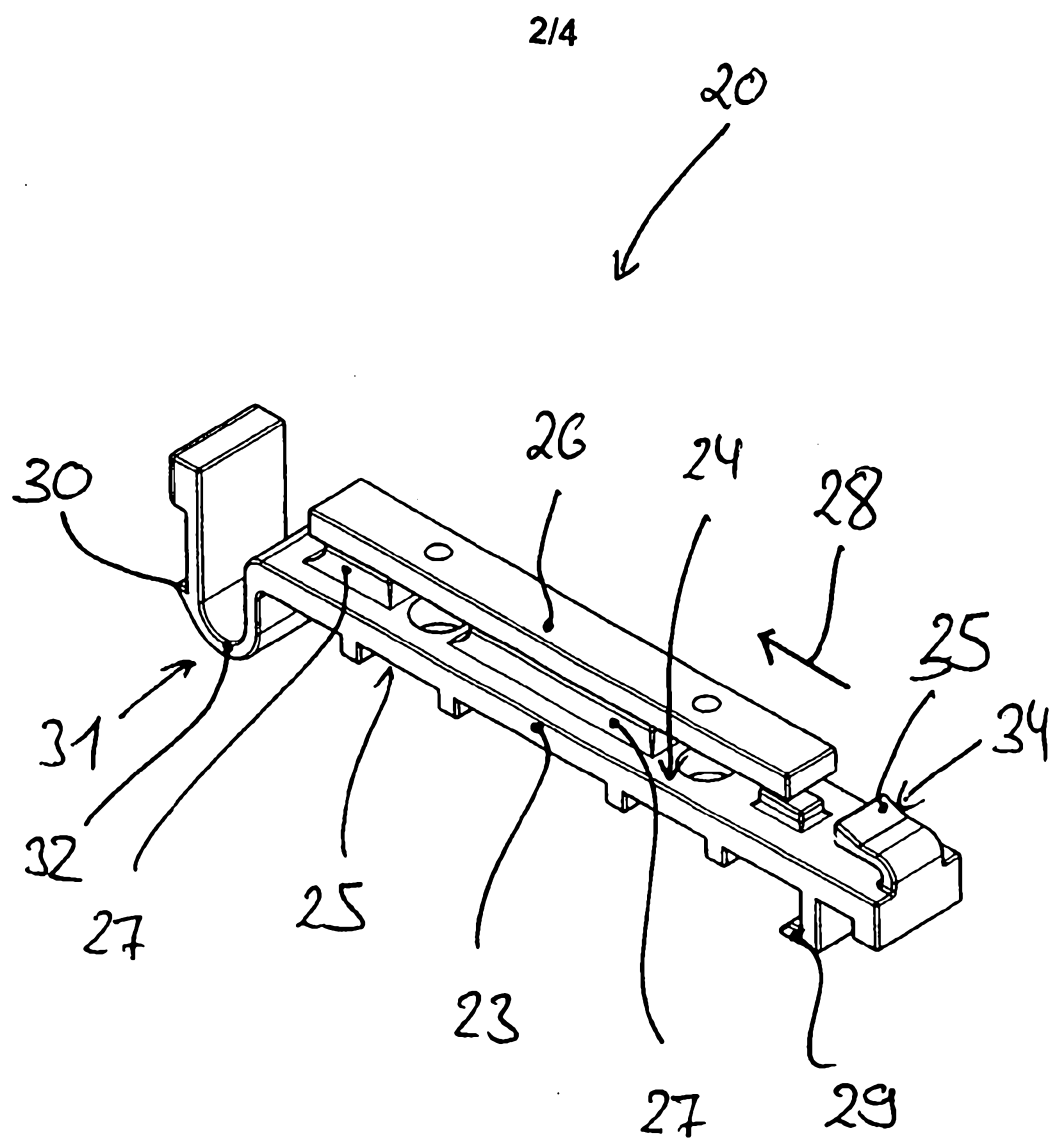
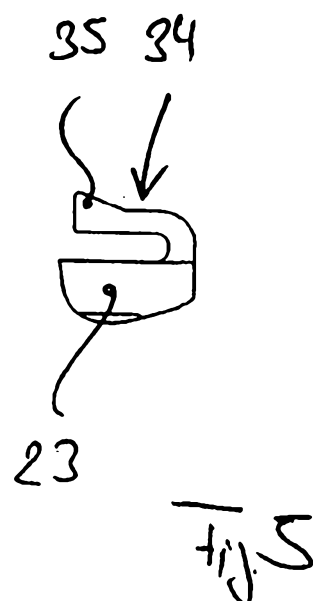
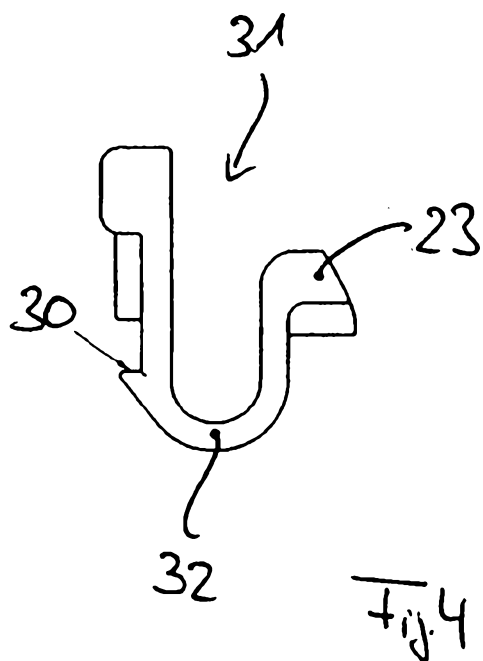
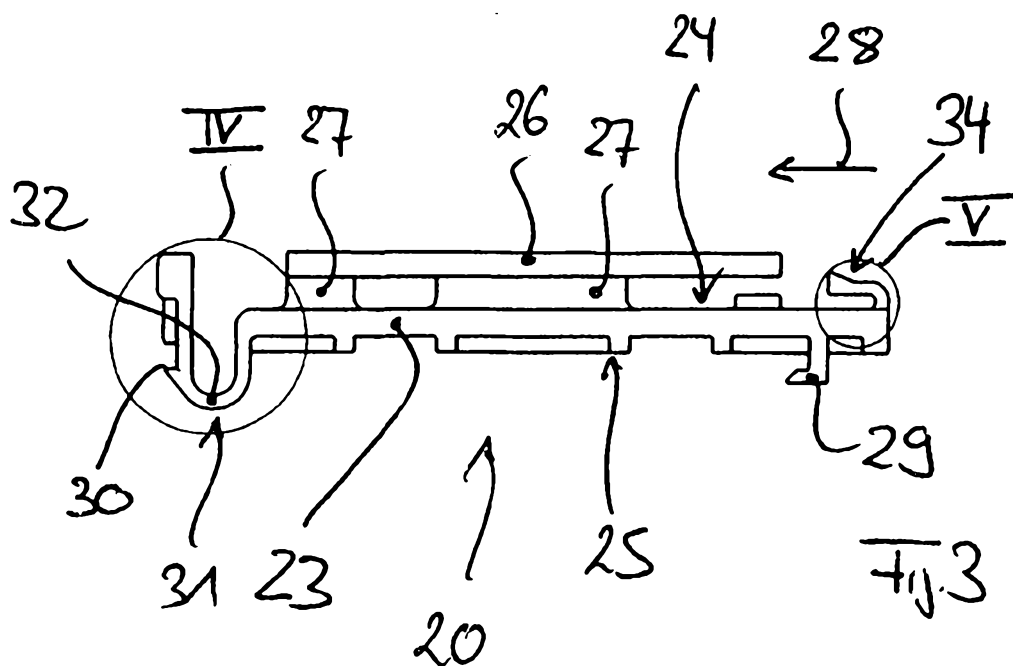


Fig. 2

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