



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
04.06.2014 Bulletin 2014/23

(51) Int Cl.:
H01R 4/48 (2006.01)

(21) Application number: **13003677.5**

(22) Date of filing: **23.07.2013**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

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(30) Priority: **30.11.2012 EP 12008058**

(54) **Connecting terminal**

(57) The invention is about a connecting terminal (3) for electrical conductors, having a contact element (40) substantially in the form of a U-profile, provided for the purpose of electrically contacting the conductor, having a substantially U-shaped clamping spring (41), in the form of a leaf spring, which keeps the conductor in electrical and mechanical connection with the contact element (40), and having an insulating housing (4) which accommodates the contact element (40) and the clamping spring (41), said housing (4) having an insertion side (60), a mounting side (61), a top side (62), a bottom side (63), and at the insertion side (60) at least one insertion opening (42) for the conductor, said contact element (40) having a first profile section (43) possessing substantially a L-shape with a first and a second limb (46, 47) and with a plug-in opening (44) which is aligned with respect to the insertion opening (42), and with a second, substantially flat profile section (45), whereby the clamping spring (41) has a support limb (48) being connected to the second profile section (45) of the contact element (40), and a clamping limb (49) which is configured to be positioned with its free end against a conductor inserted into the plug-in opening (44) to press it against the first limb (46) of the contact element (40) and to be pushed towards the support limb (48) for releasing the conductor from the first limb (46), whereby the clamping spring (41) is accommodated within the U-profile of the contact element (40), that the U-shape of the clamping spring (41) opens towards the mounting side of the housing (4), and that an arrester bar (51) extends from the inner wall of the mounting side (61) into the open space between the support limb (48) and the clamping limb (49) of the clamping spring (41) to serve as a dead stop for the bending movement of the clamping limb (49) when releasing the conductor from the first limb (46).

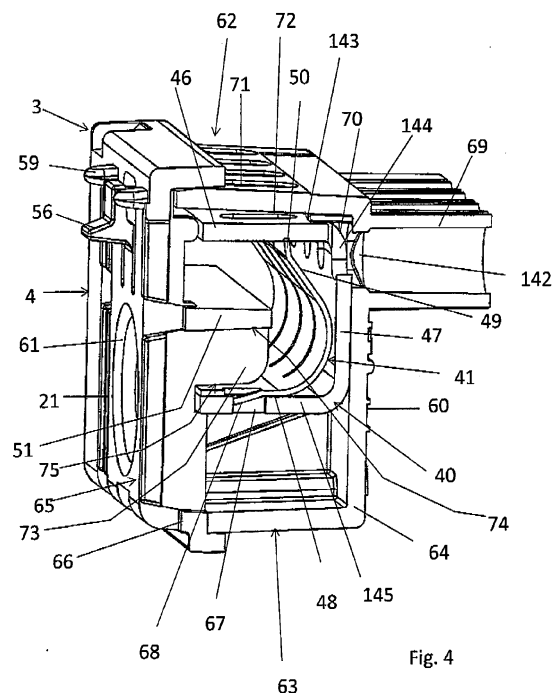


Fig. 4

Description

[0001] The invention relates to a connecting terminal for electrical conductors, having a contact element substantially in the form of a U-profile, provided for the purpose of electrically contacting the conductor, having a substantially U-shaped clamping spring, in the form of a leaf spring, which keeps the conductor in electrical and mechanical connection with the contact element, and having an insulating housing which accommodates the contact element and the clamping spring, said housing having an insertion side, a mounting side, a top side, a bottom side, and at the insertion side at least one insertion opening for the conductor, said contact element having a first profile section possessing substantially a L-shape with a first and a second limb and with a plug-in opening which is aligned with respect to the insertion opening, and with a second, substantially flat profile section, whereby the clamping spring has a support limb being connected to the second profile section of the contact element, and a clamping limb which is configured to be positioned with its free end against a conductor inserted into the plug-in opening to press it against the first limb of the contact element and to be pushed towards the support limb for releasing the conductor from the first limb, according to the preamble of claim 1.

[0002] EP 1 217 692 B1 shows a connecting terminal for electrical conductors, having a contact element provided for the purpose of carrying electrical power, a clamping spring, which keeps the conductor in electrical and mechanical connection with the contact element, whose material is different from the material of the contact element and which is in the form of a leaf spring, and an insulating housing, which accommodates the contact element and the clamping spring, having an insertion opening for the conductor, the contact element having a first profile section having a plug-in opening which is aligned with respect to the insertion opening and a second profile section which is bent back at an angle from the first profile section in the plug-in direction of the conductor, and the clamping spring being connected at one end to the first profile section of the contact element, and it being possible for the clamping spring to be positioned with the other end against the conductor to be connected to the terminal in order to press it against the second profile section, whereby the clamping spring extends, next to one end which is connected to the contact element on the front side (in the plug-in direction of the conductor) of the first section, in an arc over the first section and is passed with the other end, which can be positioned against the conductor, through the plug-in opening. Such an arrangement of contact springs and contact element requires quite some space

[0003] The object of the present invention is to provide an improved connecting terminal, which can be made very compact and where the clamping spring is protected against overstretching when releasing the conductor.

[0004] According to the invention, the above object is achieved by a connection terminal with the features as pointed out in claim 1.

[0005] Advantageous embodiments are described in the characteristic features of the dependent claims.

[0006] According to the invention the clamping spring is accommodated within the U-profile of the contact element, and the U-shape of the clamping spring opens towards the mounting side of the housing, and an arrester bar extends from the inner wall of the mounting side into the open space between the support limb and the clamping limb of the clamping spring to serve as a dead stop for the bending movement of the clamping limb when releasing the conductor from the first limb. By accommodating the clamping spring within the U-profile of the contact element, there is space saved, and so a compact connecting terminal design is achieved. The compactness is further increased by making the opening of the U-profile of the contact element and the U-shape of the clamping spring open into the same direction, namely towards the mounting side of the housing. Advantageously, an internal dead stop for safeguarding the clamping spring against overload or overstretching when pressed in the opening direction for releasing the conductor is achieved by the invention in a very simple and cost effective way, as according to the invention the dead stop is integrated into the housing wall. Housings for a connection terminal according to the invention are most frequently made by injection moulding of insulating plastic material, and so the dead stop for overload protection of the clamping spring can advantageously be manufactured in the same injection moulding process as the housing parts.

[0007] According to an advantageous aspect of the invention, the arrester bar is integrally shaped to the inner wall of the mounting side and extends substantially parallel to the bottom side, heading towards the insertion side. This allows for a space-saving arrangement of the clamping element within the housing, nonetheless giving easy access for a conductor to be inserted, and so this solution is particularly useful for designing small and compact connecting terminals.

[0008] According to an advantageous aspect of the invention, a supporting wall is integrally shaped to the inner wall of the mounting side or to the lower side of the arrester bar which faces the second profile section of the contact element, leaving a slot between said second profile section of the contact element and the supporting wall, the slot thickness being adapted to the thickness of the support limb of the clamping spring, whereby the support wall presses onto the support limb of the contact spring to support its fixation to the second profile section of the contact element.

[0009] According to an advantageous aspect of the invention the housing is composed of a base part and a cover part, which are held together by a snap action mechanism, whereby the cover part is forming the mounting side and the base part is forming the insertion side.

[0010] According to an advantageous aspect of the invention the support limb of the clamping spring is fixed to the

second profile section by a latching mechanism comprising a latching recess in the second profile section and a latching tongue formed in the support limb of the clamping spring by slot-like recesses and resiliently projecting out of the plane of the support limb.

[0011] According to an advantageous aspect of the invention a conductor guiding tube is formed to the insertion side of the housing, the inner side of the conductor guiding tube establishing a guiding channel for the conductor, the channel being aligned with the insertion opening and the plug-in opening.

[0012] According to an advantageous aspect of the invention the plug-in opening is formed in the transition edge between the first and second limb of the first profile section.

[0013] According to an advantageous aspect of the invention there is in the first limb of the first profile section a contact recess providing access for a tool to the clamping limb of the clamping spring for the purpose of pressing the clamping limb towards the support limb for releasing the conductor.

[0014] According to an advantageous aspect of the invention there is in the top side of the housing a housing recess aligned with the contact recess providing access for a tool to the clamping limb of the clamping spring.

[0015] The invention will be described in greater detail by description of an embodiment with reference to the accompanying drawings, wherein

Fig. 1 shows an embodiment of a distribution unit with a terminal block arrangement according to the invention,

Fig. 2 shows a connection terminal module oriented towards a mounting strip in a connection terminal block arrangement according to the invention,

Fig. 3a shows a connection terminal module oriented towards a mounting strip in a connection terminal block arrangement according to a second embodiment of the invention,

Fig. 3b shows a schematic drawing of a side view and a view perpendicular to the mounting wall of a module according to the embodiment shown in figure 3a,

Fig. 4 shows a sectional view of a terminal block module housing according to the invention.

[0016] Referring to figure 1, there is shown a distribution unit 1 for an electrical installation. The distribution unit 1 has a substructure 7 in form of a mounting plate. There are two locations with means for installing a top hat rail 32, also called a DIN hat rail, to the substructure 7. Instead of the top hat rail 32 shown any other kind of profiled rails allowed in the various technical standards that are applied in different countries throughout the world for electrical distribution boards may be applied. The top hat rail serves for mounting electrical installation devices, such as miniature circuit breakers (MCM), residual current circuit breakers (RCCB), contactor devices, overvoltage protection devices or the like. In fig. 1 as an example an MCB device 33 is mounted to the top hat rail 32. In the distribution unit 1 shown in figure 1 two such top hat rails can be installed in parallel and at a distance apart from each other, although only one of them, the one close to the topline edge 34 of the mounting plate 7 of distribution unit 1 is shown.

[0017] The distribution unit 1 is further comprising a terminal block arrangement, in particular for connecting protective earth conductors and neutral conductors (PE/N terminal). The terminal block arrangement is located at the topline edge of the mounting plate 7. The terminal block arrangement has a mounting strip 2 and connecting terminal modules 3, only one module 3 shown in exemplary mode in figure 1, that can be fitted to the mounting strip 2 next to one another in a row.

[0018] The terminal block arrangement usually has a conductor rail and a number of connection elements for the purpose of connecting conductors to the conductor rail. Each of the modules 3 has at least one of the connection elements. The modules 3 have an insulating housing 4 and a conductor rail section (not shown here in figure 1) which is arranged within the housing 4. The conductor rail sections are forming the conductor rail, and the terminal block arrangement has links for the purpose of electrically connecting the conductor rail sections of modules which are fitted next to one another on the mounting strip.

[0019] The distribution unit 1 has a first and a second support 5, 6 for the mounting strip 2 being disposed at a spacing from one another on the substructure 7. Located next to the first and second supports 5, 6, there are additional first and second supports 5', 6', situated a small distance below the first and second supports 5, 6. The height above the mounting plate 7 of the first and a second supports 5, 6 is larger than the height above the mounting plate 7 of the additional first and second supports 5', 6'. So the additional first and second supports 5', 6' allow for fixing the mounting strip 2 close to the mounting plate 7, and the first and second supports 5, 6 allow for mounting the mounting strip 2 at a certain distance above the mounting plate 7. It may even be the case that two mounting strips, each equipped with terminal blocks, are installed, one on the first and second supports 5, 6 and the other on the additional first and second supports 5', 6'. Figure 1 shows the situation where a first mounting strip 2' is fixed to the additional first and second supports 5', 6'.

6', a second mounting strip 2 is shown in a position before fixing to the supports, the arrows indicating the direction of insertion to the supports 5, 6.

[0020] The mounting strip 2 is being secured to the supports 5, 6, whereby for this purpose the mounting strip 2 has coupling parts 8, 9 being formed at its opposing narrow ends. Each of the coupling parts 8, 9 have a latch that can be released by pressing it in direction towards the free end of the mounting strip 2 by a tool or by a finger. The latch biases into a retaining position.

[0021] The mounting strip 2 is formed as an elongated cube-shaped rod. The rod has two rectangular broad long-edged plates 11, 12 which are connected by two rectangular narrow short-edged plates 13, 14. The long edges of the broad long-edged plates 11, 12 and the narrow edges of the narrow short-edged plates 13, 14 define two narrow long-edged side sections 17, 18.

[0022] Each of the housings 4 and the mounting strip 2 have devices for the purpose of plugging the modules 3 to the mounting strip 2, transversely with respect to the longitudinal direction of the mounting strip 2. Said devices on the side of the mounting strip 2 are formed as projecting bars 20, oriented transversely with respect to the longitudinal direction of the mounting strip 2, arranged in parallel to each other, formed to the outside of one of its rectangular broad long-edged plates 11, 12. Said devices on the side of the insulating housing are formed as at least one slot 21 (see fig. 2) oriented transversely with respect to the longitudinal direction of the mounting strip 2 and adapted for positive locking of the bar 2 into the slot 21 when plugging the module housing 4 to the mounting strip 2.

[0023] Each housing 4 has a mounting wall 45 and at least one receiving slot 21 in the mounting side 45. The mounting wall 45 has an insertion edge 42 and that the receiving slot 21 has an insertion opening 43 at the insertion edge 42, extending from the insertion edge 42 upwards towards a second edge 44 of the housing 4 located opposite the insertion edge 42. The receiving slot 21 extends about half the way up from the insertion edge 42 to the second edge. The insertion opening 43 is a little wider than the receiving slot 21, facilitating the pushing of the module housing 4 to the connection bars.

[0024] The mounting strip 2 has a number of connection bars 20 projecting from one of its two rectangular broad long-edged front plates 11 and oriented transversely with respect to the longitudinal direction of the mounting strip 2. So the receiving slot 21 and the connection bars 20 are forming the mutual connection devices. The connection bar 20 has a T-shaped cross-section, with a first plate-like limb 40 arising from the broad long-edged front plate 11, and with a second plate-like limb 41 formed at the free end of and perpendicular to the first limb 40.

[0025] The connection bars 20 are all oriented in parallel and transversely with respect to the longitudinal direction of the mounting strip 2. They are arranged by being spaced apart in equal distances, forming a kind of raster. In figure 1 one sees a raster of sixteen connection bars 20, in figure 2 and 3a one sees a detail with six resp. seven of these connection bars 20. The housing 4 of the module 3 has four receiving slots 21, all of said receiving slots 21 being arranged in a mutually spaced manner, spaced apart in the same equal distances as the connection bars 20. So the raster of the receiving slots 21 in the module housing 4 fits to the raster of the connection bars 20 at the mounting strip 2. This design allows for an exact positioning of the module housings 4, in a rastered, grid-like spacing along the longitudinal extension of the mounting strip 2.

[0026] The connection bar 20 and the receiving slot 21 are adapted for a gliding cooperation when the connection bar 20 is inserted into the receiving slot 21 at the insertion opening 43.

[0027] Figures 3a and 3b show an embodiment where there is an alternative or additional means for fixing the module housing 4 to the mounting strip 2. There is a resilient fixation arm 52, which biases into a retaining position. The resilient fixation arm is formed in the mounting wall 45 of the module housing 4 by slot-like recesses 53, 54, 55. The fixation arm has a latching member 56 here in the form of a latching nose, protruding out of the mounting wall 45. In the broad long-edged front plate 11 of the mounting strip 2 there are recesses 57 formed, one of these is indicated in figure 4. The recesses are rastered with the same raster as the connection bars 20 and the receiving slots 21, whereby each of the recesses 57 is located between two neighbouring connection bars 21, as also each resilient fixation arm 52 is located between two neighbouring insertion slots 21. It is not required to have as many resilient fixation arms as recesses. It may be sufficient for small housings to have as little as one resilient fixation arm. In the embodiment of figure 3a there are only two resilient fixation arms, one to the left, one to the right, none in the centre. Each resilient fixation arm 52 is adapted for a resiliently latching engagement with a corresponding recess 57.

[0028] The free end of the resilient fixation arm 52 has a pushing member 58 at its end for pushing the end portion of the resilient fixation arm 52 towards the inside of the housing 4. The latching member 56 can be released by pushing on the pushing member 58 and so pressing the fixation arm 52 towards the inside of the housing 4 for releasing the latching engagement. Positioned near the latching member 56, there is at least one spacer 59 formed at the mounting wall 45 of the housing 4. The effect of the spacer is to limit the displacement of the resilient arm when pressing the mounting wall 45 of the housing 4 against a flat surface.

[0029] The pushing member 58 exceeds the upper surface of the mounting strip 2 when the module is fixed to the mounting strip. So the pushing member 58 is accessible for a manual pushing operation, by finger or by a tool, even when the housing 4 is fixed to the mounting strip. So it is possible to release an individual housing out of a combination of housings arranged in a row and fixed to a mounting strip, even from within the combination.

[0030] Referring now to figure 4, there is shown a connecting terminal 3 for electrical conductors, having a contact element 40 substantially in the form of a U-profile. The contact element 40 is provided for the purpose of electrically contacting a conductor which is inserted into an insertion opening 142 (the conductor is not shown in the figure). The connecting terminal 3 further has a substantially U-shaped clamping spring 41, in the form of a leaf spring. The clamping spring 41 is configured to keep the inserted conductor in electrical and mechanical connection with the contact element 40 by pressing the inserted conductor with the free end 50 of the clamping limb 49 to the first limb 46 of the first profile section 143. The connecting terminal 3 further has an insulating housing 4 which accommodates the contact element 40 and the clamping spring 41.

[0031] The housing 4 has an insertion side 60, a mounting side 61, a top side 62, a bottom side 63, and at the insertion side 60 at least one insertion opening 142 for the conductor. The mounting side 61 equals the mounting wall 45 mentioned in describing the figures 2 and 3a above. The contact element 40 has a first profile section 143 possessing substantially a L-shape with a first and a second limb 46, 47 and with a plug-in opening 144, which is aligned with respect to the insertion opening 142.

[0032] The contact element 40 has a second, substantially flat profile section 145. The clamping spring 41 has a support limb 48 being connected to the second profile section 145 of the contact element 40. The clamping spring 41 further has a clamping limb 49 which is configured to be positioned with its free end against a conductor inserted into the plug-in opening 144 to press it against the first limb 46 of the contact element 40 and to be pushed towards the support limb 48 for releasing the conductor from the first limb 46..

[0033] The clamping spring 41 is accommodated within the U-profile of the contact element 40. The U-shape of the clamping spring 41 opens towards the mounting side of the housing 4. An arrester bar 51 extends from the inner wall of the mounting side 61 into the open space between the support limb 48 and the clamping limb 49 of the clamping spring 41 to serve as a dead stop for the bending movement of the clamping limb 49 when releasing the conductor from the first limb 46. Thus it prevents the clamping spring 41 from over-relaxing during the unlocking of wires or conductors, when the clamping spring 41 is bent down using a tool, for example a screwdriver.

[0034] The arrester bar 51 is formed to the inner wall of the mounting side 61 and extends substantially parallel to the bottom side 63, heading towards the insertion side 60.

[0035] A supporting wall 73 is integrally shaped to the inner wall of the mounting side 61 and to the lower side 74 of the arrester bar 51. The supporting wall 73 kind of supports the arrester bar, preventing it from being bent down and break away from the wall, by accident. Supporting wall 73 and arrester bar 51 together have a T-shaped cross section if cut parallel to the mounting side wall 61. The lower end of the supporting wall 73, opposite the arrester bar 51, faces the second profile section 145 of the contact element 40, leaving a slot 75 between said second profile section 145 of the contact element 40 and the supporting wall 73. The thickness of the slot 75 is adapted to the thickness of the support limb 48 of the clamping spring 41. The slot 75 is just wide enough to let the support limb 48 of the clamping spring 41 fit in. Thus the support wall 73 presses onto the support limb 48 of the contact spring 41. By pressing on it, the support wall 73 supports the coupling of the contact spring 41 to the second profile section 145 of the contact element 40.

[0036] The housing 4 is composed of a base part 64 and a cover part 65, which are held together by a snap action mechanism 66, whereby the cover part 65 is forming the mounting side 61, and the base part 64 is forming the Insertion side 60.

[0037] The support limb 48 of the clamping spring 41 is additionally coupled to the second profile section 145 by a latching mechanism comprising a latching recess 67 in the second profile section 45 and a latching tongue 68. The latching tongue 68 is formed in the support limb 48 of the clamping spring 41 by slot-like recesses and resiliently projecting out of the plane of the support limb 48.

[0038] There is also an embodiment possible and covered by the invention, even if not shown in the figures, where the support limb 48 of the clamping spring 41 does not have a latching tongue, but is just flatly lying attached to the second profile section 145 and is held in position due to the clamping force actuated on it by the supporting wall 73, as explained above.

[0039] A conductor guiding tube 69 is formed to the insertion side 60 of the housing 4, the inner side of the conductor guiding tube 69 establishing a guiding channel for the conductor, the channel being aligned with the insertion opening 42 and the plug-in opening 44.

[0040] The plug-in opening 144 is formed in the transition edge 70 between the first and second limb 46, 47 of the first profile section 143.

[0041] In the first limb 46 of the first profile section 143 there is a contact recess 72 providing access for a tool to the clamping limb 49 of the clamping spring 41 for the purpose of pressing the clamping limb 49 down towards the support limb 48 for releasing the conductor.

[0042] After removing the tool, the clamping spring 41 will resiliently go back to its retaining position pressing the free end 50 of the clamping limb 49 to the first limb 46 of the first profile section 143. The resulting spring force simultaneously pushes the support limb 48 of the clamping spring 41 firmly to the second profile section 145. This is an additional supporting means for effectively self-supporting and self-fixing the clamping spring 41 within the frame of the profiled

contact element 40, in the absence of an inserted conductor, in addition to the above mentioned fixation by clamping through the supporting wall 73 and the latching tongue 68, in case there is one.

[0043] In the top side 62 of the housing 4 there is a housing recess 71 aligned with the contact recess 72 providing access for a tool to the clamping limb 49 of the clamping spring 41.

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List of reference signs

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1 distribution unit

2 elongated mounting strip

3 connecting terminal module

4 housing

5, 5' support part

6, 6' support part

7 substructure

8 coupling part

9 coupling part

11 broad long-edged front plate

12 broad long-edged front plate

13 narrow short-edged plate

14 narrow short-edged plate

17 narrow long-edged side section

18 narrow long-edged side section

20 connection bar

21 receiving slot

32 top hat rail

33 MCB device

34 edge of mounting plate

40 contact element

41 clamping spring

42 insertion edge

43 insertion opening

44 second edge

45 mounting wall

46 first limb

47 second limb

48 support limb

49 clamping limb

50 free end of clamping limb

51 arrester bar

52 resilient fixation arm

53 slot-like recess

54 slot-like recess

55 slot-like recess

56 locking member

57 recess

58 pushing member

59 spacer

60 insertion side

61 mounting side

62 top side

63 bottom side

64 base part

65 cover part

66 snap action mechanism

67 recess

68 latching tongue

69 conductor guiding tube

70 transition edge

71 housing recess

72 contact recess

73 supporting wall

74 lower side of arrester bar 51

75 slot

142 insertion opening

143 first profile section

144 plug-in opening

145 second profile section

50 **Claims**

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1. Connecting terminal (3) for electrical conductors, having a contact element (40) substantially in the form of a U-profile, provided for the purpose of electrically contacting the conductor, having a substantially U-shaped clamping spring (41), in the form of a leaf spring, which keeps the conductor in electrical and mechanical connection with the contact element (40), and having an insulating housing (4) which accommodates the contact element (40) and the clamping spring (41), said housing (4) having an insertion side (60), a mounting side (61), a top side (62), a bottom side (63), and at the insertion side (60) at least one insertion opening (142) for the conductor, said contact element (40) having a first profile section (143) possessing substantially a L-shape with a first and a second limb (46, 47)

and with a plug-in opening (144) which is aligned with respect to the insertion opening (142), and with a second, substantially flat profile section (145), whereby the clamping spring (41) has a support limb (48) being coupled to the second profile section (145) of the contact element (40), and a clamping limb (49) which is configured to be positioned with its free end against a conductor inserted into the plug-in opening (144) to press it against the first limb (46) of the contact element (40) and to be pushed towards the support limb (48) for releasing the conductor from the first limb (46),

characterised in that the clamping spring (41) is accommodated within the U-profile of the contact element (40), whereby the U-shape of the clamping spring (41) opens towards the mounting side (61) of the housing (4), and that an arrester bar (51) extends from the inner wall of the mounting side (61) into the open space between the support limb (48) and the clamping limb (49) of the clamping spring (41) to serve as a dead stop for the bending movement of the clamping limb (49) when releasing the conductor from the first limb (46).

2. Connecting terminal (3) according to claim 1, **characterised in that** the arrester bar is integrally shaped to the inner wall of the mounting side (61) and extends substantially parallel to the bottom side (63), heading towards the insertion side (60).
3. Connecting terminal (3) according to claim 1, **characterised in that** a supporting wall (73) is integrally shaped to the inner wall of the mounting side (61) or to the lower side (74) of the arrester bar (51) which faces the second profile section (145) of the contact element (40), leaving a slot (75) between said second profile section (145) of the contact element (40) and the supporting wall (73), the slot thickness being adapted to the thickness of the support limb (48) of the clamping spring (41), whereby the support wall (73) presses onto the support limb (48) of the contact spring (41) to support its fixation to the second profile section (145) of the contact element (40).
4. Connecting terminal (3) according to claim 1, **characterised in that** the housing (4) is composed of a base part (64) and a cover part (65), which are held together by a snap action mechanism (66), whereby the cover part (65) is forming the mounting side (61) and the base part (64) is forming the insertion side (60).
5. Connecting terminal (3) according to claim 1, **characterised in that** the support limb (48) of the clamping spring (41) is coupled to the second profile section (145) by a latching mechanism comprising a latching recess (67) in the second profile section (145) and a latching tongue (68) formed in the support limb (48) of the clamping spring (41) by slot-like recesses and resiliently projecting out of the plane of the support limb (48).
6. Connecting terminal (3) according to claim 1, **characterised in that** a conductor guiding tube (69) is formed to the insertion side (60) of the housing (4), the inner side of the conductor guiding tube (69) establishing a guiding channel for the conductor, the channel being aligned with the insertion opening (42) and the plug-in opening (144).
7. Connecting terminal (3) according to claim 1, **characterised in that** the plug-in opening (144) is formed in the transition edge between the first and second limb (46, 47) of the first profile section (143).
8. Connecting terminal (3) according to claim 1, **characterised in that** in the first limb (46) of the first profile section (143) there is a contact recess (72) providing access for a tool to the clamping limb (49) of the clamping spring (41) for the purpose of pressing the clamping limb (49) towards the support limb (48) for releasing an inserted conductor.
9. Connecting terminal (3) according to claim 8, **characterised in that** in the top side (62) of the housing (4) there is a housing recess (71) aligned with the contact recess (72) providing access for a tool to the clamping limb (49) of the clamping spring (41).

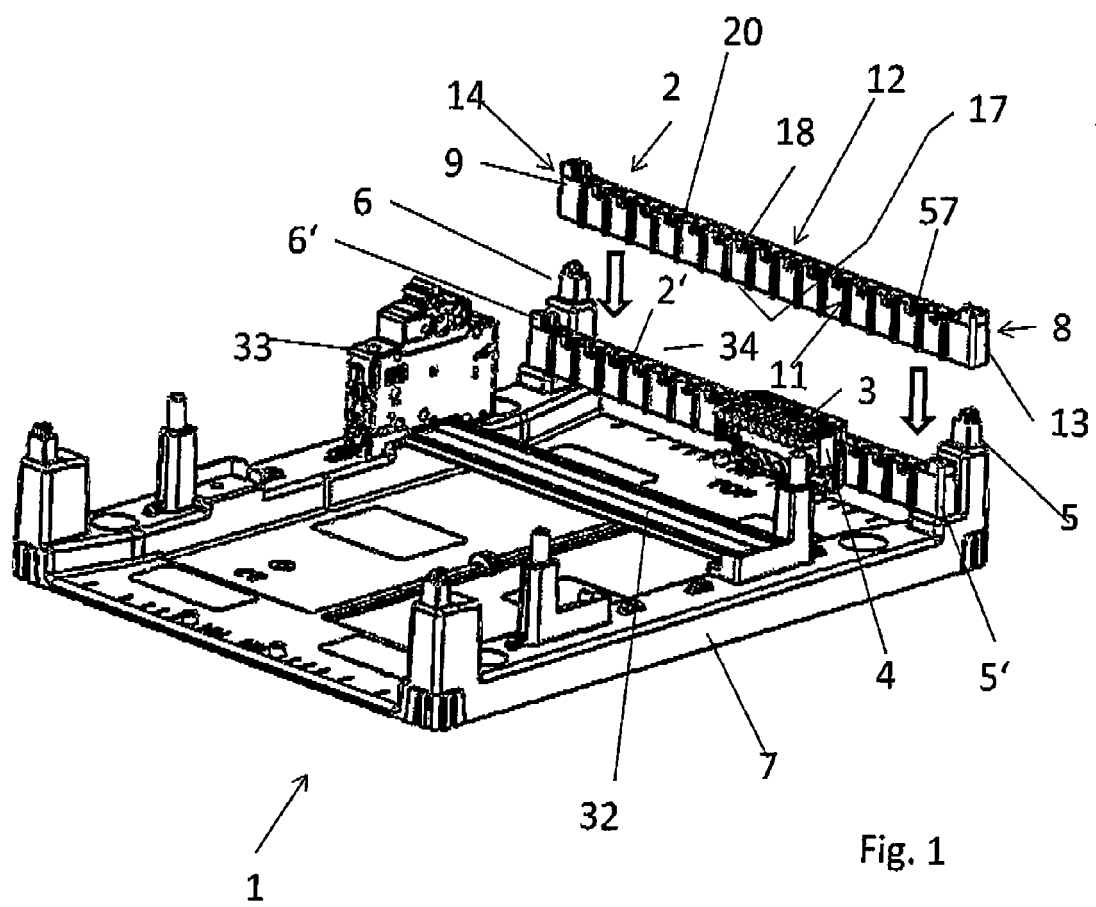


Fig. 1

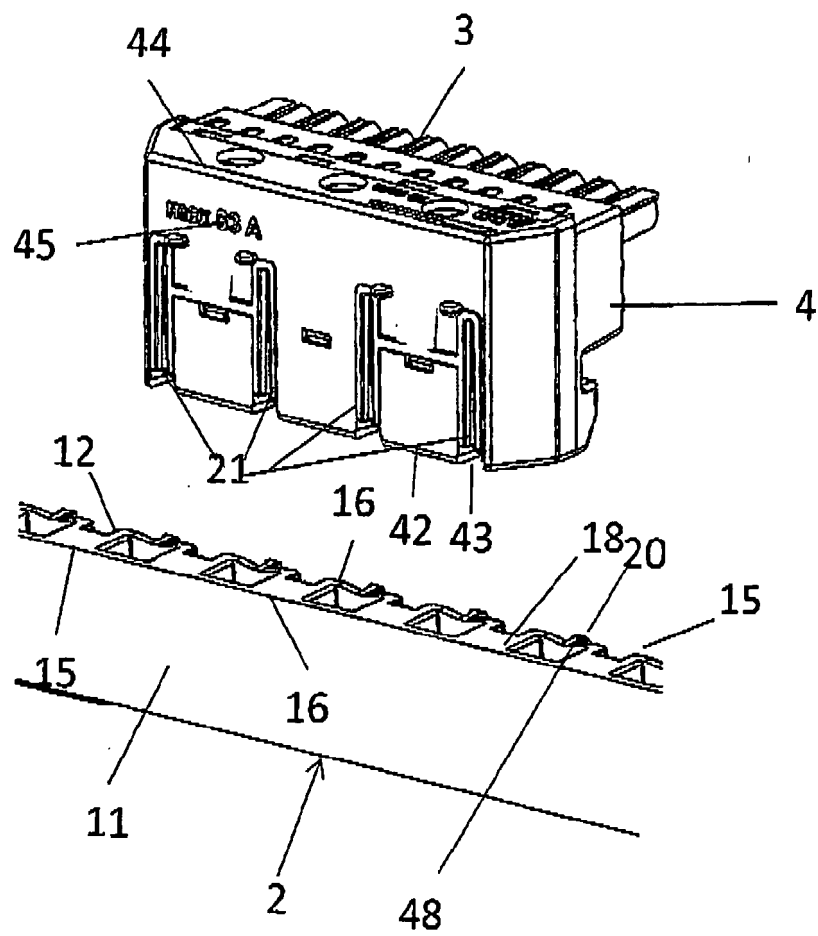
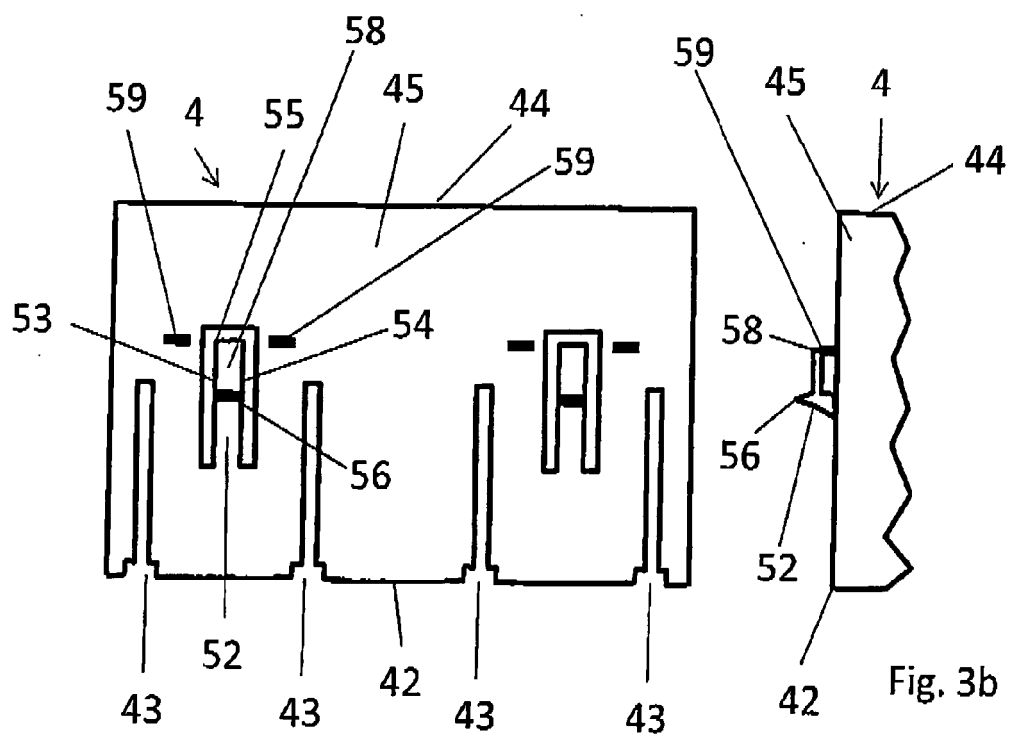
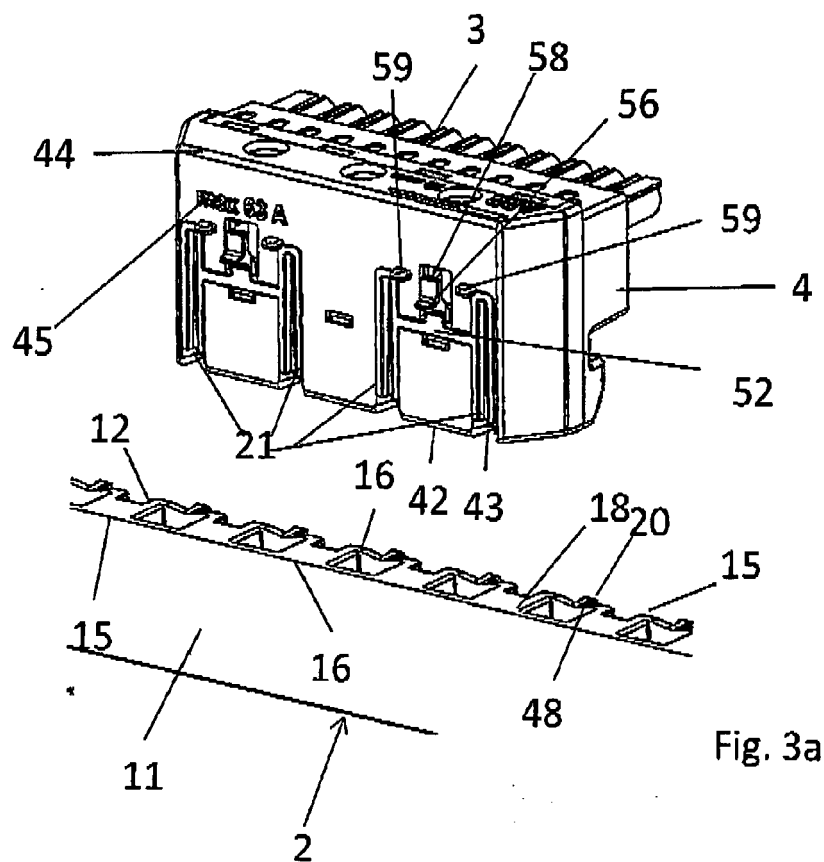
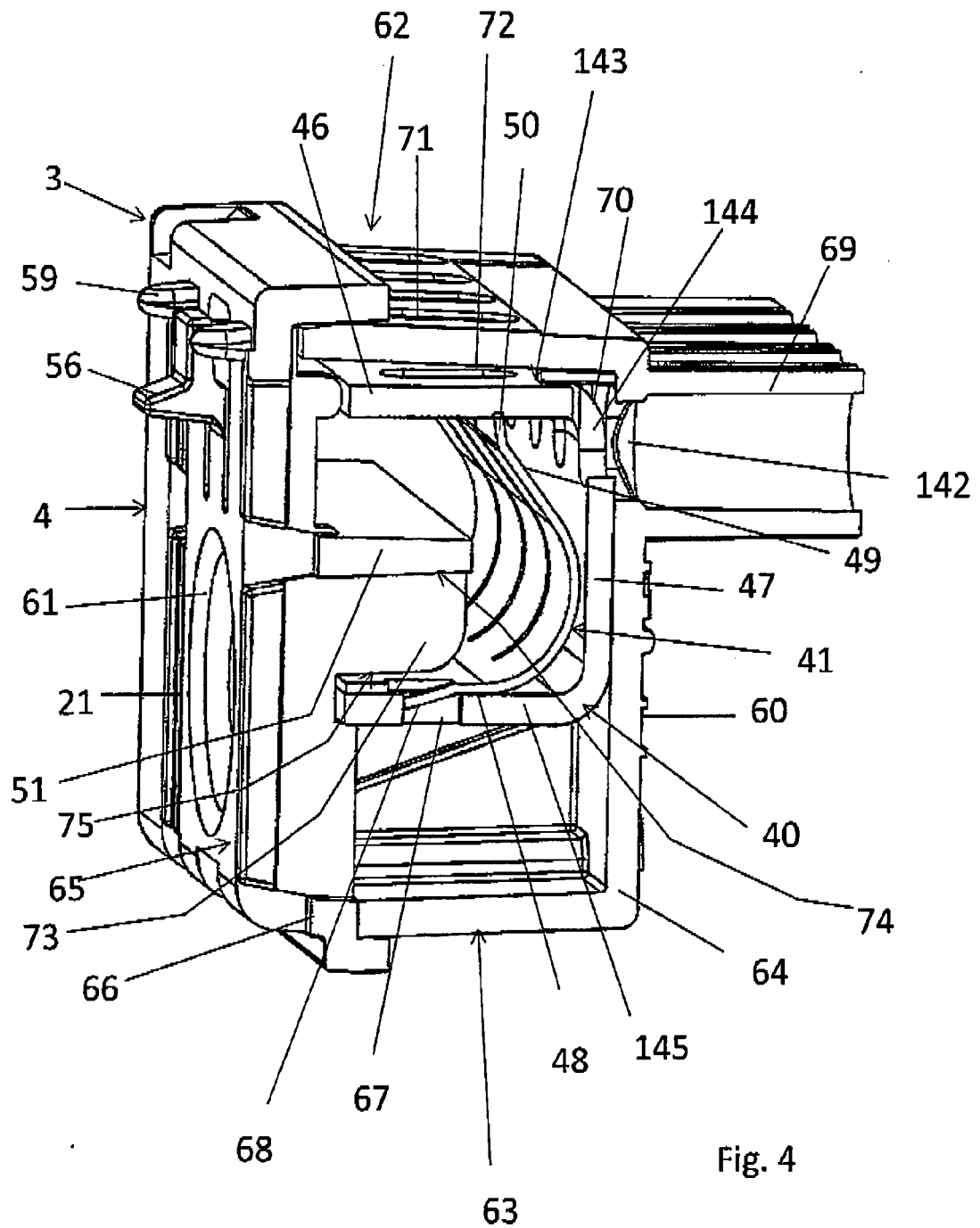


Fig. 2







EUROPEAN SEARCH REPORT

Application Number
EP 13 00 3677

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			H01R
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 January 2014	Examiner Knack, Steffen
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