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MOUNTING DEVICE FOR RJ CONNECTION ELEMENTS OF THE COMMUNICATION AND DATA TECHNIQUE (PATCH PANEL)

The present invention relates to a mounting device for RJ connection elements of the communication and data technique (patch panel) according to the preamble of claim 1.

Mounting devices for RJ connection elements, such as RJ socket insets (RJ45 sockets) with insulation displacement contacts are used as patch panels for in-house wiring and are, e.g., employed in 19" distributor cabinets of the communication and data technique. By means of the patch panels, a mechanical and/or electrical matching to the system interfaces is performed.

The prior art mounting devices for RJ connection elements are formed by a metal mounting frame into which are placed the RJ connection elements. The mounting frame is connected by fixing holes with the rack of a 19" distributor cabinet. The cable layout is performed separately by patch panel guides not permitting, however, a direct assignment to the RJ sockets (KRONE LINK with LSA Profile, Planning Instructions, edition 06.92).

It is therefore the object of the invention to develop a mounting device of the type referred to hereinbefore by means of which a simple, quick, reliable and flexible placement of RJ connection elements and the wiring thereof are secured.

The solution of this object is achieved by the characterising features of claim 1. The immediate placement of the RJ connection elements without any intermediate elements in the mounting device guarantees quick and easy mounting of, e.g., the RJ socket insets. Further, removal of the RJ connection elements

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from the front and rear sides is possible. By the immediate assignment of the cable guiding portion with the cable guiding channels to the receiving portions for the RJ connection elements, an immediate attachment of the supplied cables at the RJ connection element is possible, and thus a clear layout for wiring. The cable guiding portion is movable such that it comes out of the access area of the RJ connection elements, but continues to guide the cables. The cable guiding portion can be brought into a position corresponding to the standard construction of 19" or ESTI distributor frames.

Further advantageous embodiments of the invention are defined in the further subclaims.

In the following, the invention will be described in more detail, with reference to a preferred embodiment of a mounting device represented in the drawings. There are:

- Fig. 1 a perspective representation of the mounting device seen from behind,
- Fig. 2 a perspective partial view of the front side of the mounting panel of Fig. 1,
- Fig. 3 a perspective partial view of the rear side of the mounting panel of Fig. 1,
- Fig. 4 the partially sectional side view of the mounting panel of Fig. 1,
- Fig. 5 a perspective top view of the cable guiding portion,
- Fig. 6 the front view of the cable guiding portion of Fig. 5,
- Fig. 7 the top view of the cable guiding portion of Fig. 5, and
- Fig. 8 a perspective representation of the lateral cable guiding ring.

The mounting device (patch panel) is substantially formed according to Fig. 1 of a mounting panel 1 of plastic for RJ connection elements 6, of a rear-side cable guiding portion 2 movable on the mounting panel 1 (Figs. 5 to 7) and of a front-side, lateral cable guiding ring 3 (Fig. 8) simultaneously serving



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for attachment of the mounting panel 1 to a 19" or ESTI distributor frame 12. The lateral cable guiding ring 3 can also be configured for the front-side cable guiding only. The mounting panel 1 forms thus the actual patch panel.

Figs. 2 to 4 show in various views a section of the mounting panel 1 for mounting the RJ connection elements 6.

According to the representation in Figs. 1, 3 and 4, the RJ connection elements 6 are detachably latched from the rear side 7 of the mounting panel 1 (Fig. 4) over latch connections 5 in receiving portions 4 in the direction of the arrow 17. The latch connections 5 are for instance formed by clips (Fig. 4). The RJ connection elements 6 can conductively be connected over at least two points to a not shown earthing plate. From the front side 8 of the mounting panel 1 (Figs. 1, 2), the respective RJ plugs 15 (Fig. 1) can be inserted over the recesses 14 (Fig. 2) into the RJ connection elements 6, e.g. RJ45 sockets.

The mounting panel 1 has according to Fig. 1 a plurality of receiving portions 4, in particular twenty-four receiving portions 4 for twenty-four RJ connection elements 6. Each receiving portion 4 of the mounting panel 1 is coupled to a cable guiding channel 9 of the cable guiding portion 2 such that a proper cable guiding can be performed from the terminals of the RJ connection elements 6. The cable guiding portions 2 are placed on the rear side 7 of the mounting panel 1 (Fig. 3) by latch lugs 10 of the mounting panel 1 and by lug receiving portions 19 (Fig. 6) at the cable guiding portions 2 (Figs. 1, 4). At the cable guiding portions 2 are attached the cables 13 forwarded to the RJ connection elements 6 (Fig. 1), e.g. by a cable ribbon. The cable guiding portion 2 is in this example intended for eight cables 13, so that for the described mounting panel 1 for the twenty-four RJ connection elements 6 three cable guiding portions 2 are installed (Fig. 1).

According to Fig. 4, the cable guiding portion 2 is movable in the direction of the arrow such that it

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comes out of the access area of the RJ connection elements 6. Even in this swung-out position the cable guiding portion 2 guides the cables 13 to the RJ connection elements 6. The cable guiding portion 2 can be swung in so far that it does not come higher than the standard height of the distributor frame 12.

The mounting panel 1 can be mounted by the lateral cable guiding ring 3 (Figs. 1, 8) at the 19" or ESTI distributor frame 12 or the like. The lateral cable guiding ring 3 is movably supported by 45° in the cutout 11 (Figs. 2, 3) on the front side 8 of the mounting panel 1. It has mainly the function of the front-side cable guiding. In the present example, it additionally serves for attachment of the mounting panel 1 at the distributor frame 12. According to the representation in Fig. 8, the lateral cable guiding ring 3 is so configured for this purpose that it can firmly be snap-fitted by a latch device 18 in the mounting panel 1 and serves for the lateral guiding of the RJ45 plug cables on the front side 8 of the mounting device.

The mounting panel 1 (patch panel) is made from plastic and has a reinforcement by a plastic or metal rail or by a gas filling.

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PATENT CLAIMS

1. A mounting device for RJ connection elements of the communication and data technique (patch panel), characterised by a mounting panel (1) with receiving portions (4) and with recesses (14), in which the RJ connection elements (6) are placed, a rear-side cable guiding portion (2) spatially corresponding to the respective receiving portions (4).

2. A mounting device according to claim 1, characterised by that the rear-side cable guiding portion (2) is connected with the mounting panel (1) and comprises cable guiding channels (9) spatially corresponding to the respective receiving portions (4), and that the front-side cable guiding portion (3) is formed by a lateral cable guiding ring (3).

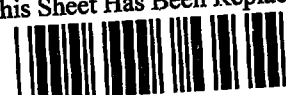
3. A mounting device according to claims 1 and 2, characterised by that the lateral cable guiding ring (3) is in addition to the attachment at the mounting panel (1) formed at a distributor frame (12) or the like.

4. A mounting device according to claim 1, characterised by that the rear-side cable guiding portion (2) and the lateral cable guiding ring (3) are movably disposed in the mounting panel (1).

5. A mounting device according to claims 1 to 4, characterised by that the RJ connection elements (6) are releasably held by means of clips in the receiving portions (4).



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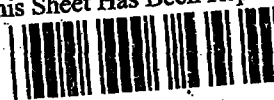
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6. A mounting device according to claims 1 to 5, characterised by that the mounting panel (1) is made of plastic material.

7. A mounting device according to claim 6, characterised by that the mounting panel (1) is reinforced by a plastic and/or metal rail and/or by a gas filling.



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LIST OF REFERENCES

- 1 mounting panel
- 2 cable guiding portion
- 3 cable guiding ring
- 4 receiving portion
- 5 latch connection
- 6 RJ connection element
- 7 rear side
- 8 front side
- 9 cable guiding channel
- 10 latch lugs
- 11 cutout
- 12 distributor frame
- 13 cable
- 14 recess
- 15 plug
- 16 arrow
- 17 arrow
- 18 latch device
- 19 lug receiving portion



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The present invention relates to a mounting device for RJ connection elements of the communication and data technique (patch panel).

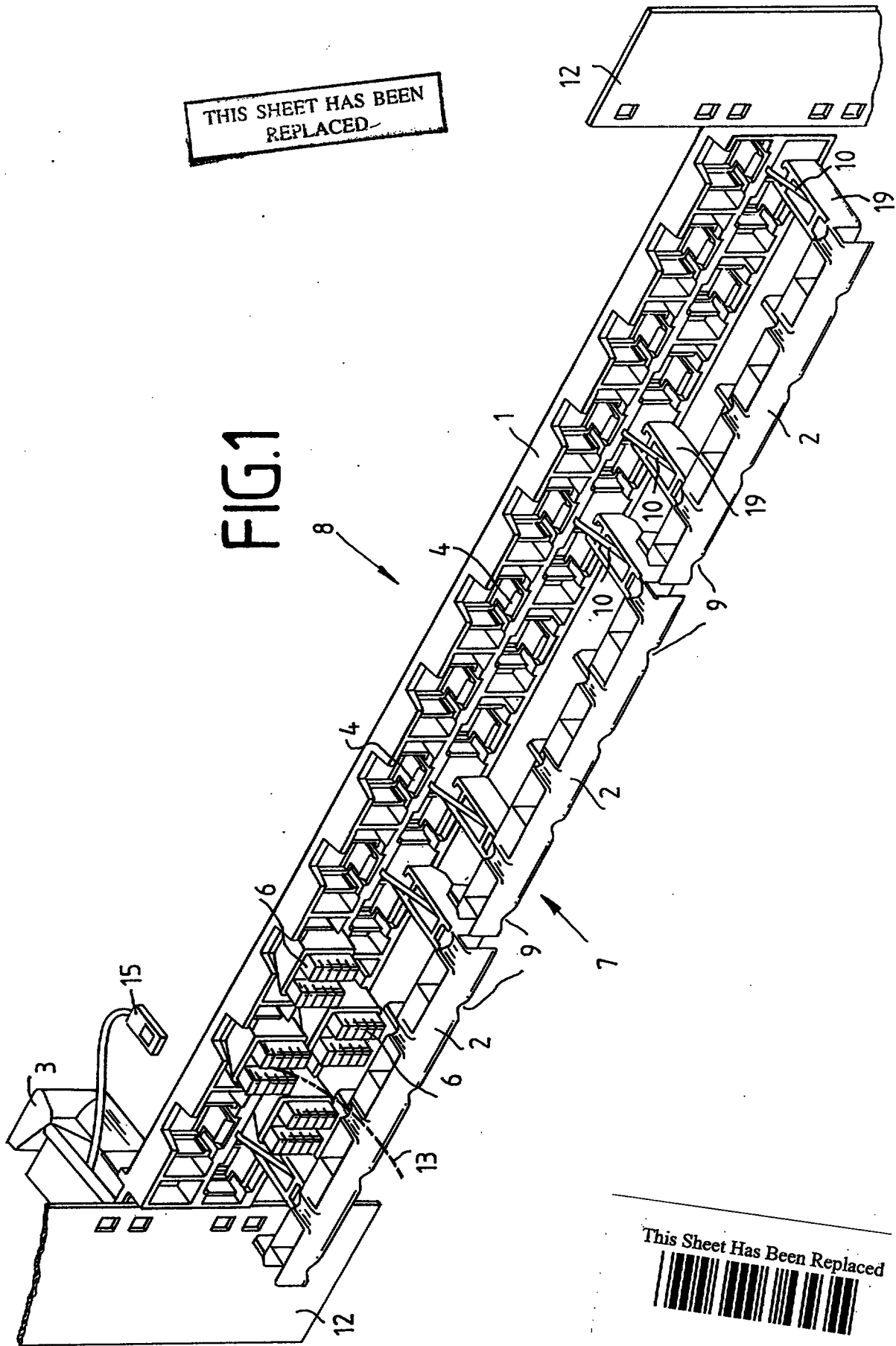
The object of the invention, namely to develop a mounting device of the type referred to hereinbefore by means of which a simple, quick, reliable and flexible placement of RJ connection elements and the wiring thereof are secured, is achieved by that a mounting panel 1 with receiving portions 4 and with recesses 14, in which the RJ connection elements 6 are immediately placed, a rear-side cable guiding portion 2 spatially corresponding to the respective receiving portions 4 and a front-side cable guiding portion 3 are provided. - Fig. 1 -

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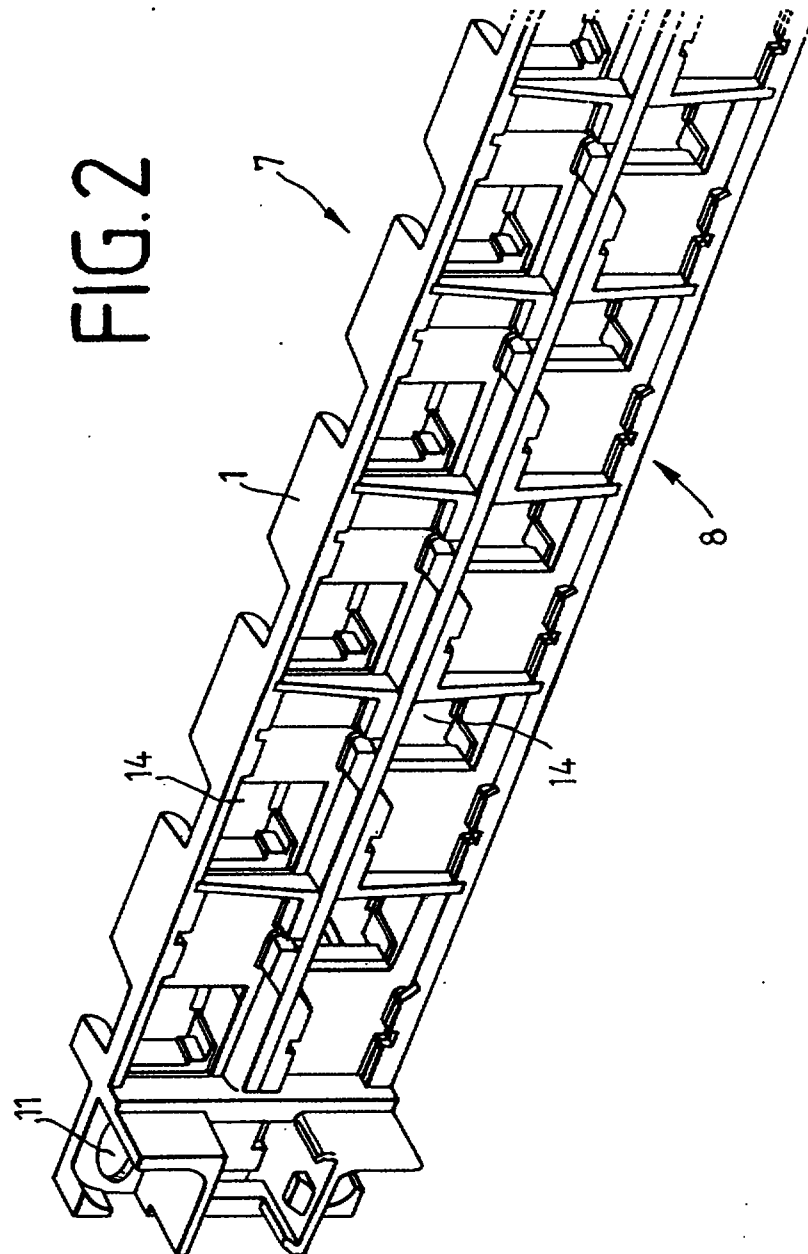
FIG.1



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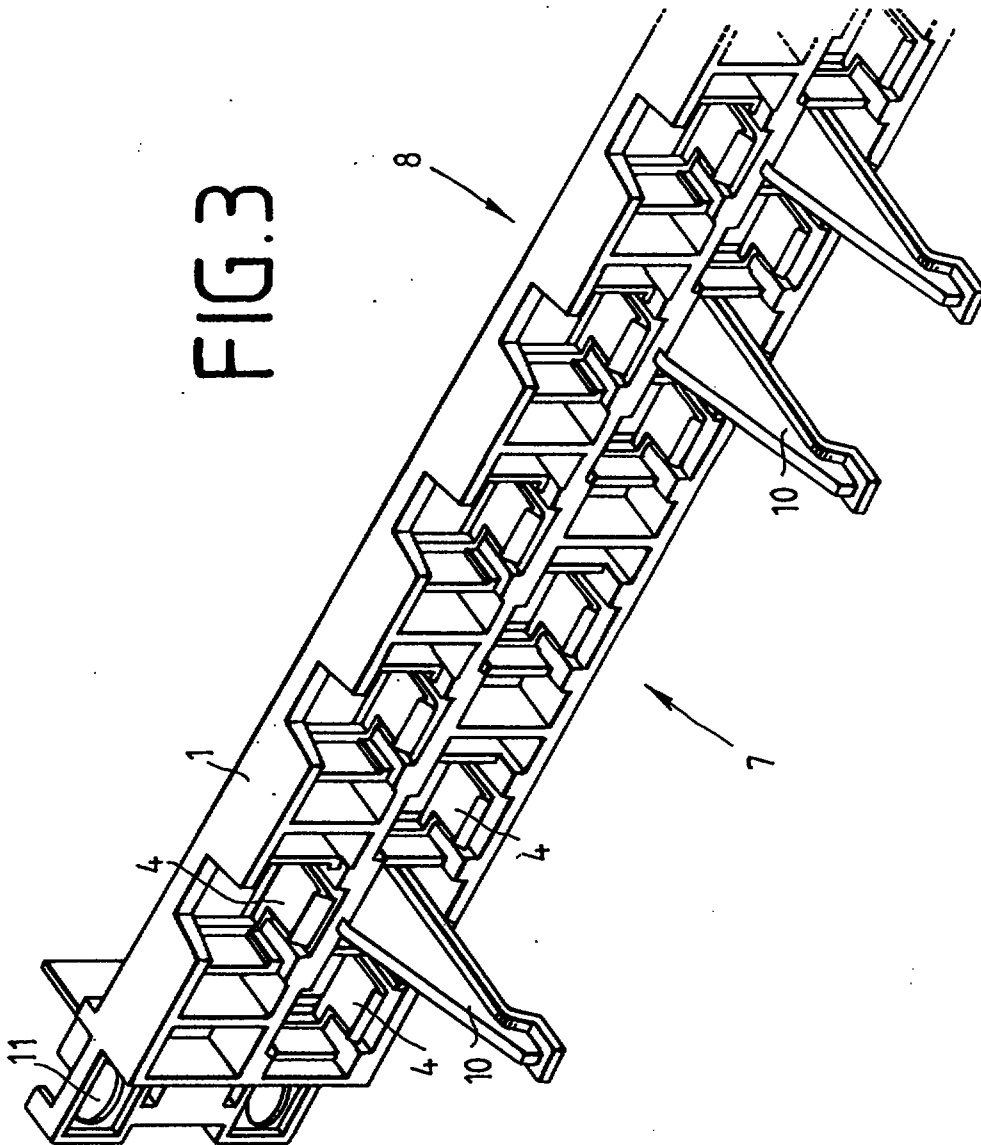
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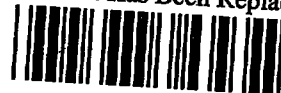
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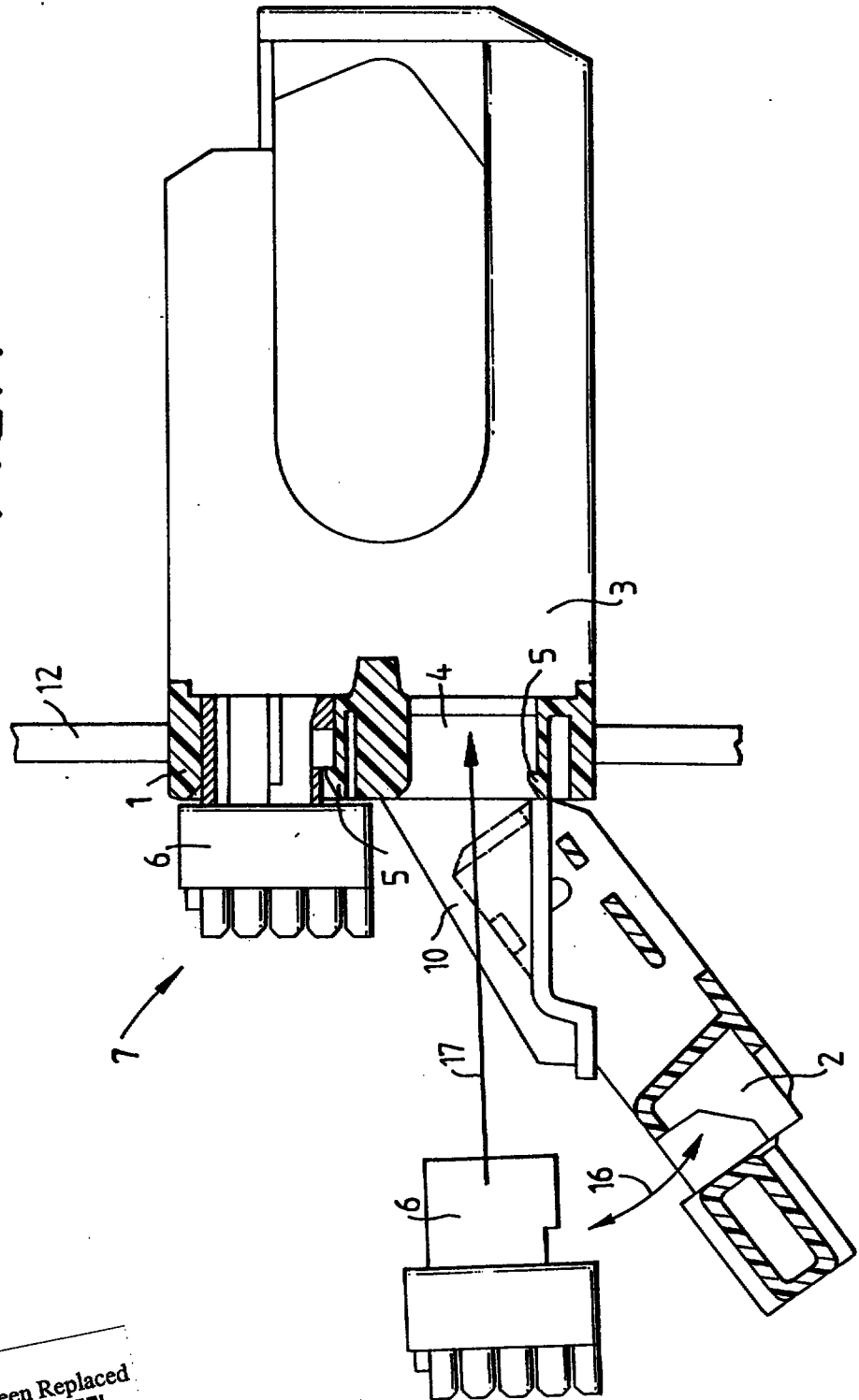


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FIG. 4



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FIG.5

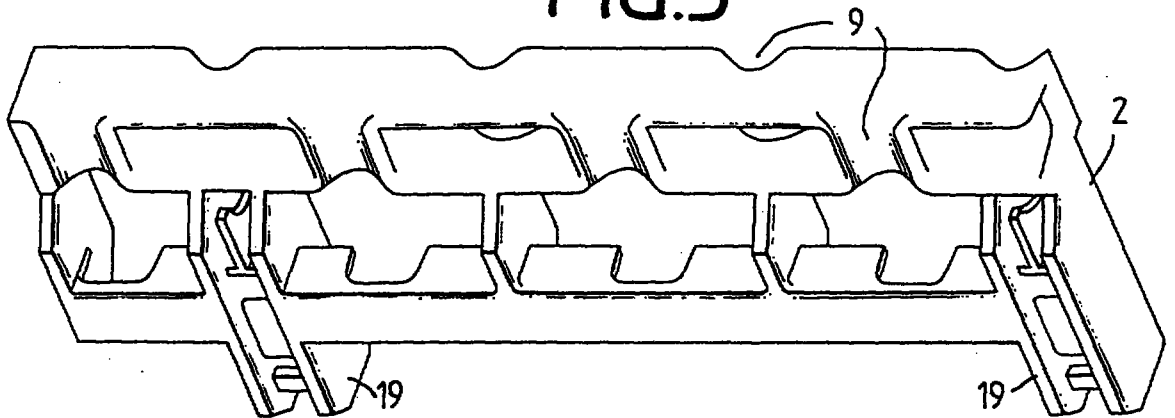


FIG.6

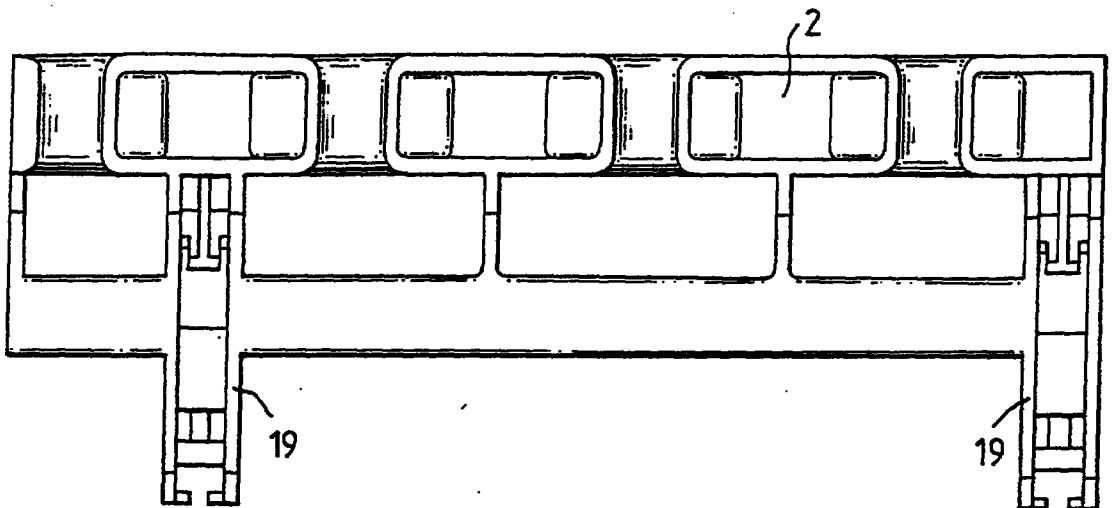
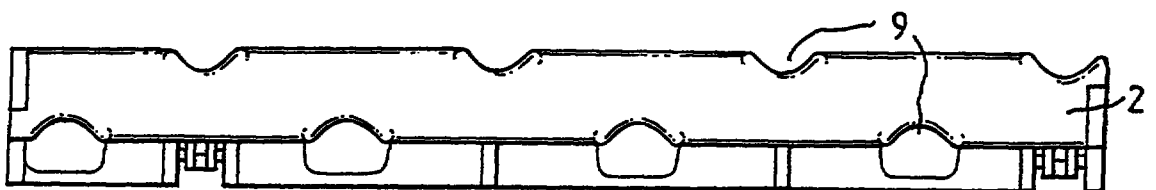


FIG.7

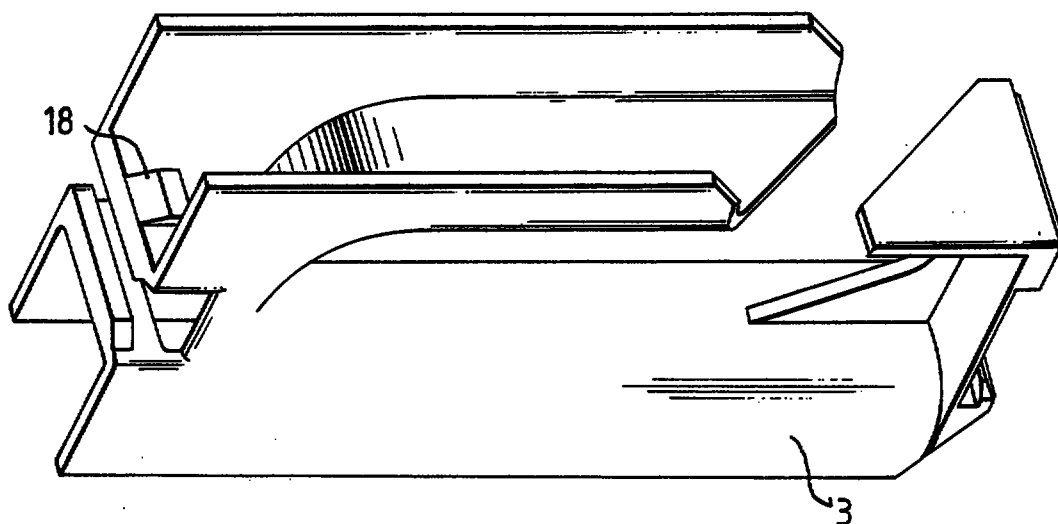


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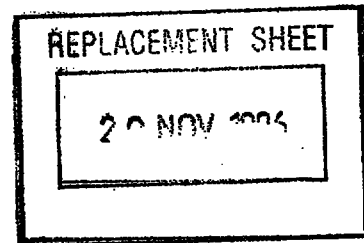
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FIG.8



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MOUNTING DEVICE FOR RJ CONNECTION ELEMENTS OF THE
COMMUNICATION AND DATA TECHNIQUE (PATCH PANEL)

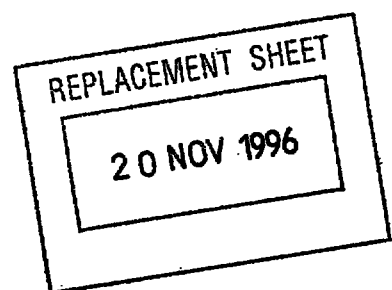
The present invention relates to a mounting device for RJ connection elements of the communication and data technique (patch panel) according to the preamble of claim 1.

Mounting devices for RJ connection elements, such as RJ socket insets (RJ45 sockets) with insulation displacement contacts are used as patch panels for in-house wiring and are, e.g., employed in 19" distributor cabinets of the communication and data technique. By means of the patch panels, a mechanical and/or electrical matching to the system interfaces is performed.

The prior art mounting devices for RJ connection elements are formed by a metal mounting frame into which are placed the RJ connection elements. The mounting frame is connected by fixing holes with the rack of a 19" distributor cabinet. The cable layout is performed separately by patch panel guides not permitting, however, a direct assignment to the RJ sockets (KRONE LINK with LSA Profile, Planning Instructions, edition 06.92).

It is therefore the object of the invention to develop a mounting device of the type referred to hereinbefore by means of which a simple, quick, reliable and flexible placement of RJ connection elements and the wiring thereof are secured.

The solution of this object is achieved by the characterising features of claim 1. The immediate placement of the RJ connection elements without any intermediate elements in the mounting device guarantees quick and easy mounting of, e.g., the RJ socket insets. Further, removal of the RJ connection elements



from the front and rear sides is possible. By the immediate assignment of the cable guiding portion with the cable guiding channels to the receiving portions for the RJ connection elements, an immediate attachment of the supplied cables at the RJ connection element is possible, and thus a clear layout for wiring. The cable guiding portion is movable such that it comes out of the access area of the RJ connection elements, but continues to guide the cables. The cable guiding portion can be brought into a position corresponding to the standard construction of 19" or ESTI distributor frames.

Further advantageous embodiments of the invention are defined in the further subclaims.

In the following, the invention will be described in more detail, with reference to a preferred embodiment of a mounting device represented in the drawings. There are:

- Fig. 1 a perspective representation of the mounting device seen from behind,
- Fig. 2 a perspective partial view of the front side of the mounting panel of Fig. 1,
- Fig. 3 a perspective partial view of the rear side of the mounting panel of Fig. 1,
- Fig. 4 the partially sectional side view of the mounting panel of Fig. 1,
- Fig. 5 a perspective top view of the cable guiding portion,
- Fig. 6 the front view of the cable guiding portion of Fig. 5,
- Fig. 7 the top view of the cable guiding portion of Fig. 5, and
- Fig. 8 a perspective representation of the lateral cable guiding ring.

The mounting device (patch panel) is substantially formed according to Fig. 1 of a mounting panel 1 of plastic for RJ connection elements 6, of a rear-side cable guiding portion 2 movable on the mounting panel 1 (Figs. 5 to 7) and of a front-side, lateral cable guiding ring 3 (Fig. 8) simultaneously serving

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for attachment of the mounting panel 1 to a 19" or ESTI distributor frame 12. The lateral cable guiding ring 3 can also be configured for the front-side cable guiding only. The mounting panel 1 forms thus the actual patch panel.

Figs. 2 to 4 show in various views a section of the mounting panel 1 for mounting the RJ connection elements 6.

According to the representation in Figs. 1, 3 and 4, the RJ connection elements 6 are detachably latched from the rear side 7 of the mounting panel 1 (Fig. 4) over latch connections 5 in receiving portions 4 in the direction of the arrow 17. The latch connections 5 are for instance formed by clips (Fig. 4). The RJ connection elements 6 can conductively be connected over at least two points to a not shown earthing plate. From the front side 8 of the mounting panel 1 (Figs. 1, 2), the respective RJ plugs 15 (Fig. 1) can be inserted over the recesses 14 (Fig. 2) into the RJ connection elements 6, e.g. RJ45 sockets.

The mounting panel 1 has according to Fig. 1 a plurality of receiving portions 4, in particular twenty-four receiving portions 4 for twenty-four RJ connection elements 6. Each receiving portion 4 of the mounting panel 1 is coupled to a cable guiding channel 9 of the cable guiding portion 2 such that a proper cable guiding can be performed from the terminals of the RJ connection elements 6. The cable guiding portions 2 are placed on the rear side 7 of the mounting panel 1 (Fig. 3) by latch lugs 10 of the mounting panel 1 and by lug receiving portions 19 (Fig. 6) at the cable guiding portions 2 (Figs. 1, 4). At the cable guiding portions 2 are attached the cables 13 forwarded to the RJ connection elements 6 (Fig. 1), e.g. by a cable ribbon. The cable guiding portion 2 is in this example intended for eight cables 13, so that for the described mounting panel 1 for the twenty-four RJ connection elements 6 three cable guiding portions 2 are installed (Fig. 1).

According to Fig. 4, the cable guiding portion 2 is movable in the direction of the arrow such that it

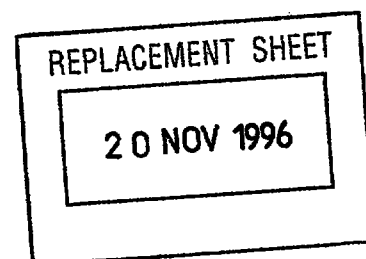
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comes out of the access area of the RJ connection elements 6. Even in this swung-out position the cable guiding portion 2 guides the cables 13 to the RJ connection elements 6. The cable guiding portion 2 can be swung in so far that it does not come higher than the standard height of the distributor frame 12.

The mounting panel 1 can be mounted by the lateral cable guiding ring 3 (Figs. 1, 8) at the 19" or ESTI distributor frame 12 or the like. The lateral cable guiding ring 3 is movably supported by 45° in the cutout 11 (Figs. 2, 3) on the front side 8 of the mounting panel 1. It has mainly the function of the front-side cable guiding. In the present example, it additionally serves for attachment of the mounting panel 1 at the distributor frame 12. According to the representation in Fig. 8, the lateral cable guiding ring 3 is so configured for this purpose that it can firmly be snap-fitted by a latch device 18 in the mounting panel 1 and serves for the lateral guiding of the RJ45 plug cables on the front side 8 of the mounting device.

The mounting panel 1 (patch panel) is made from plastic and has a reinforcement by a plastic or metal rail or by a gas filling.



LIST OF REFERENCES

- 1 mounting panel
- 2 cable guiding portion
- 3 cable guiding ring
- 4 receiving portion
- 5 latch connection
- 6 RJ connection element
- 7 rear side
- 8 front side
- 9 cable guiding channel
- 10 latch lugs
- 11 cutout
- 12 distributor frame
- 13 cable
- 14 recess
- 15 plug
- 16 arrow
- 17 arrow
- 18 latch device
- 19 lug receiving portion

REPLACEMENT SHEET

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PATENT CLAIMS

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1. A mounting device for RJ connection elements of the communication and data technique (patch panel), characterised by a mounting panel (1) with receiving portions (4) and with recesses (14), in which the RJ connection elements (6) are placed, a rear-side cable guiding portion (2) spatially corresponding to the respective receiving portions (4).

2. A mounting device according to claim 1, characterised by that the rear-side cable guiding portion (2) is connected with the mounting panel (1) and comprises cable guiding channels (9) spatially corresponding to the respective receiving portions (4), and that the front-side cable guiding portion (3) is formed by a lateral cable guiding ring (3).

3. A mounting device according to claims 1 and 2, characterised by that the lateral cable guiding ring (3) is in addition to the attachment at the mounting panel (1) formed at a distributor frame (12) or the like.

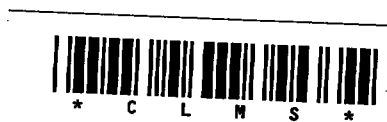
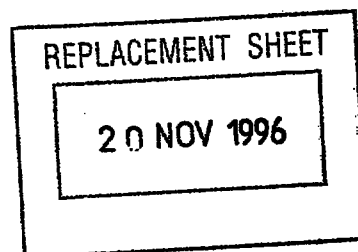
4. A mounting device according to claim 1, characterised by that the rear-side cable guiding portion (2) and the lateral cable guiding ring (3) are movably disposed in the mounting panel (1).

5. A mounting device according to claims 1 to 4, characterised by that the RJ connection elements (6) are releasably held by means of clips in the receiving portions (4).

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6. A mounting device according to claims 1 to 5, characterised by that the mounting panel (1) is made of plastic material.

7. A mounting device according to claim 6, characterised by that the mounting panel (1) is reinforced by a plastic and/or metal rail and/or by a gas filling.



MOUNTING DEVICE FOR RJ CONNECTION ELEMENTS OF THE
COMMUNICATION AND DATA TECHNIQUE (PATCH PANEL)

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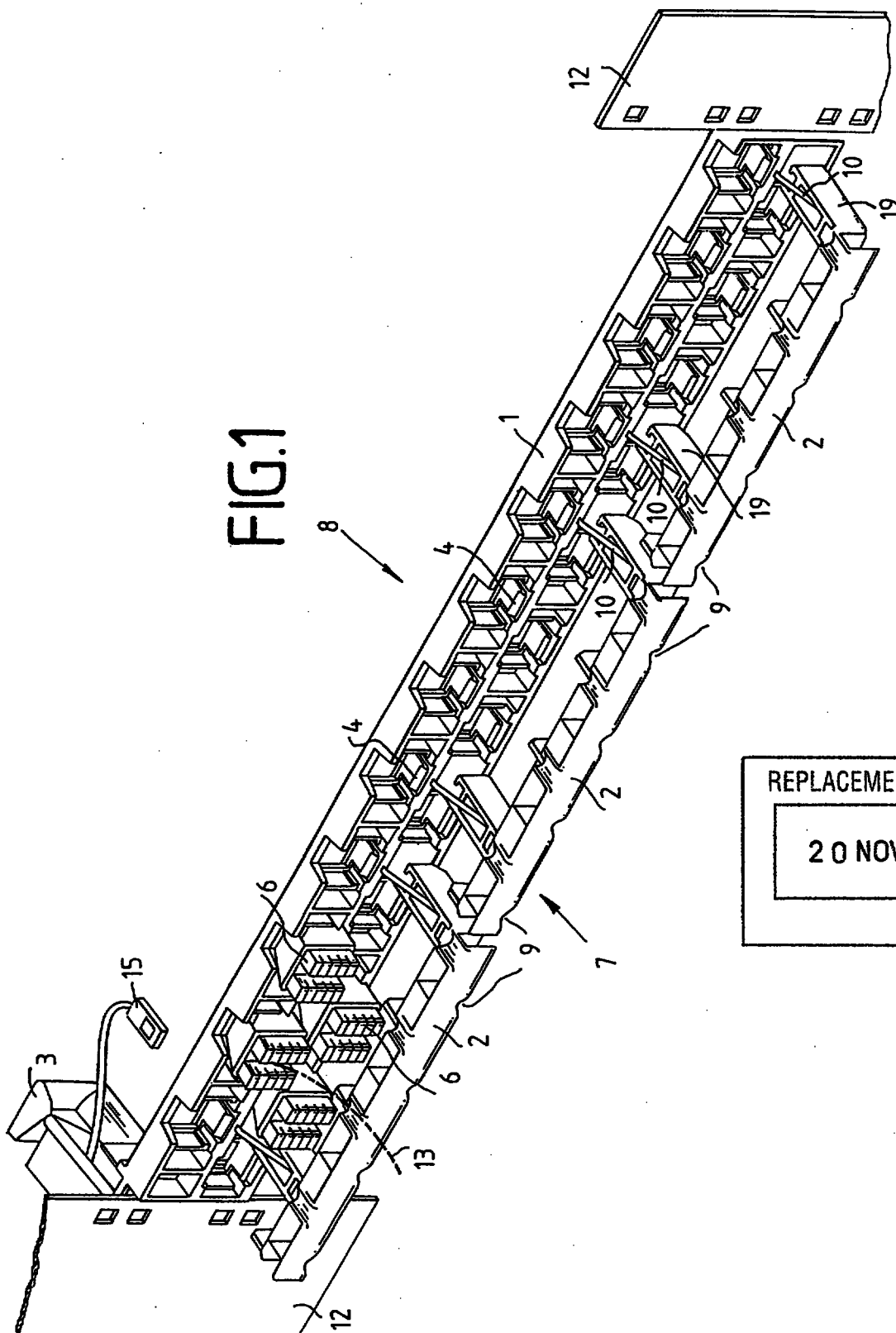
The present invention relates to a mounting device for RJ connection elements of the communication and data technique (patch panel).

The object of the invention, namely to develop a mounting device of the type referred to hereinbefore by means of which a simple, quick, reliable and flexible placement of RJ connection elements and the wiring thereof are secured, is achieved by that a mounting panel 1 with receiving portions 4 and with recesses 14, in which the RJ connection elements 6 are immediately placed, a rear-side cable guiding portion 2 spatially corresponding to the respective receiving portions 4 and a front-side cable guiding portion 3 are provided. - Fig. 1 -

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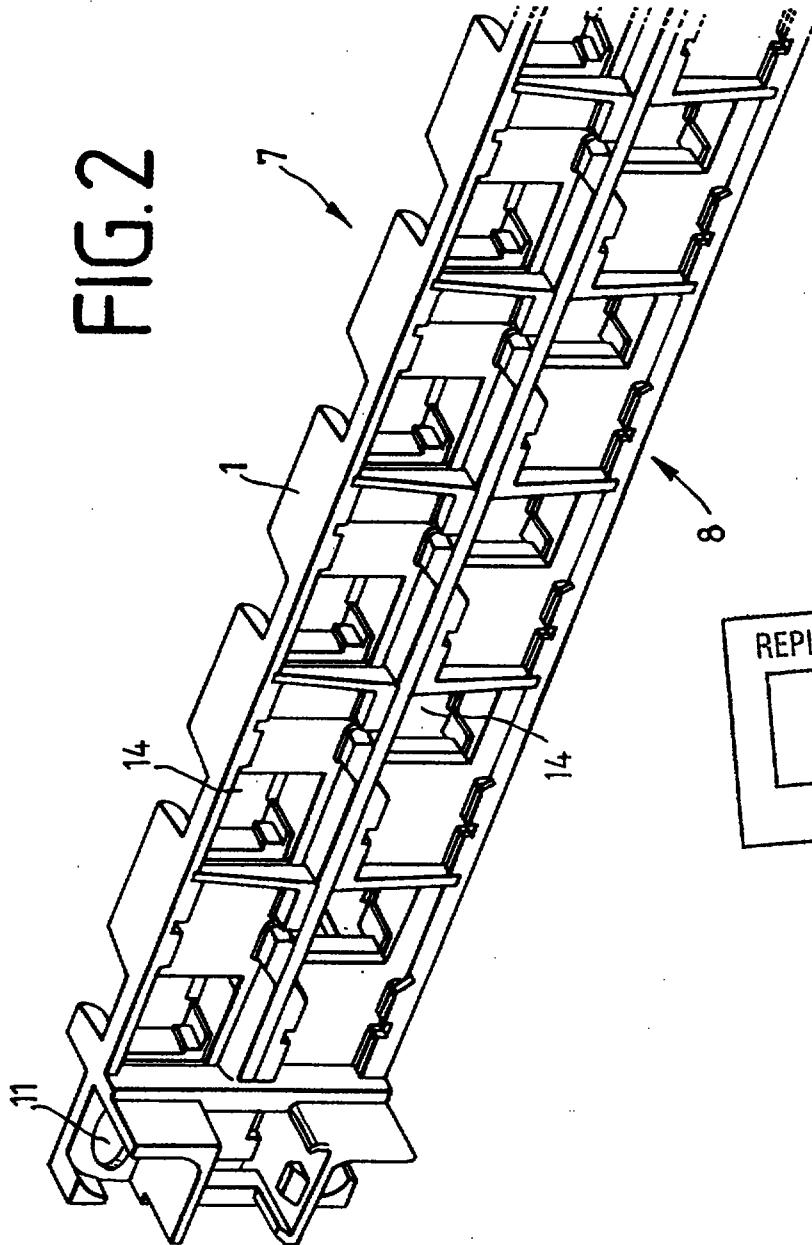
FIG. 1



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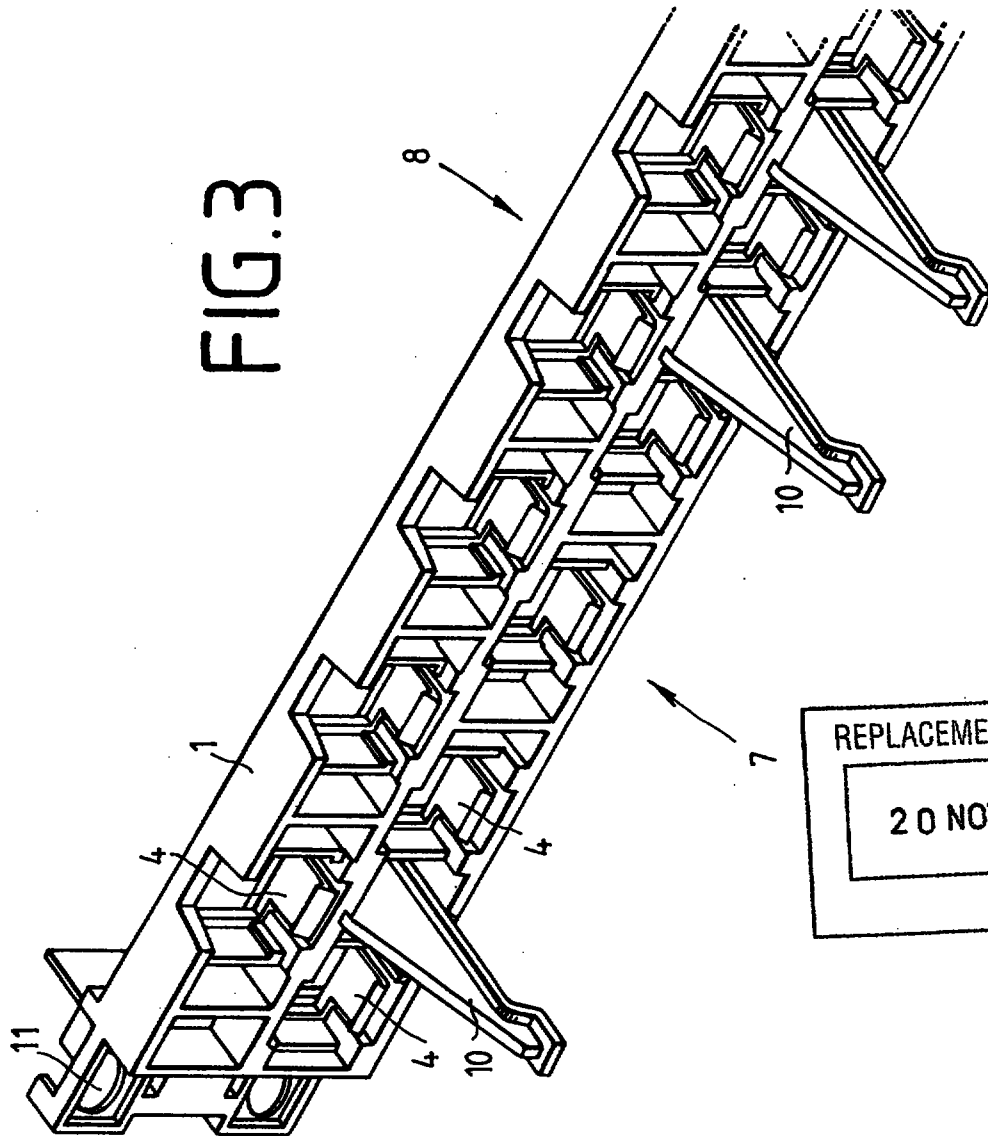
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FIG. 2



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FIG. 3



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FIG. 4

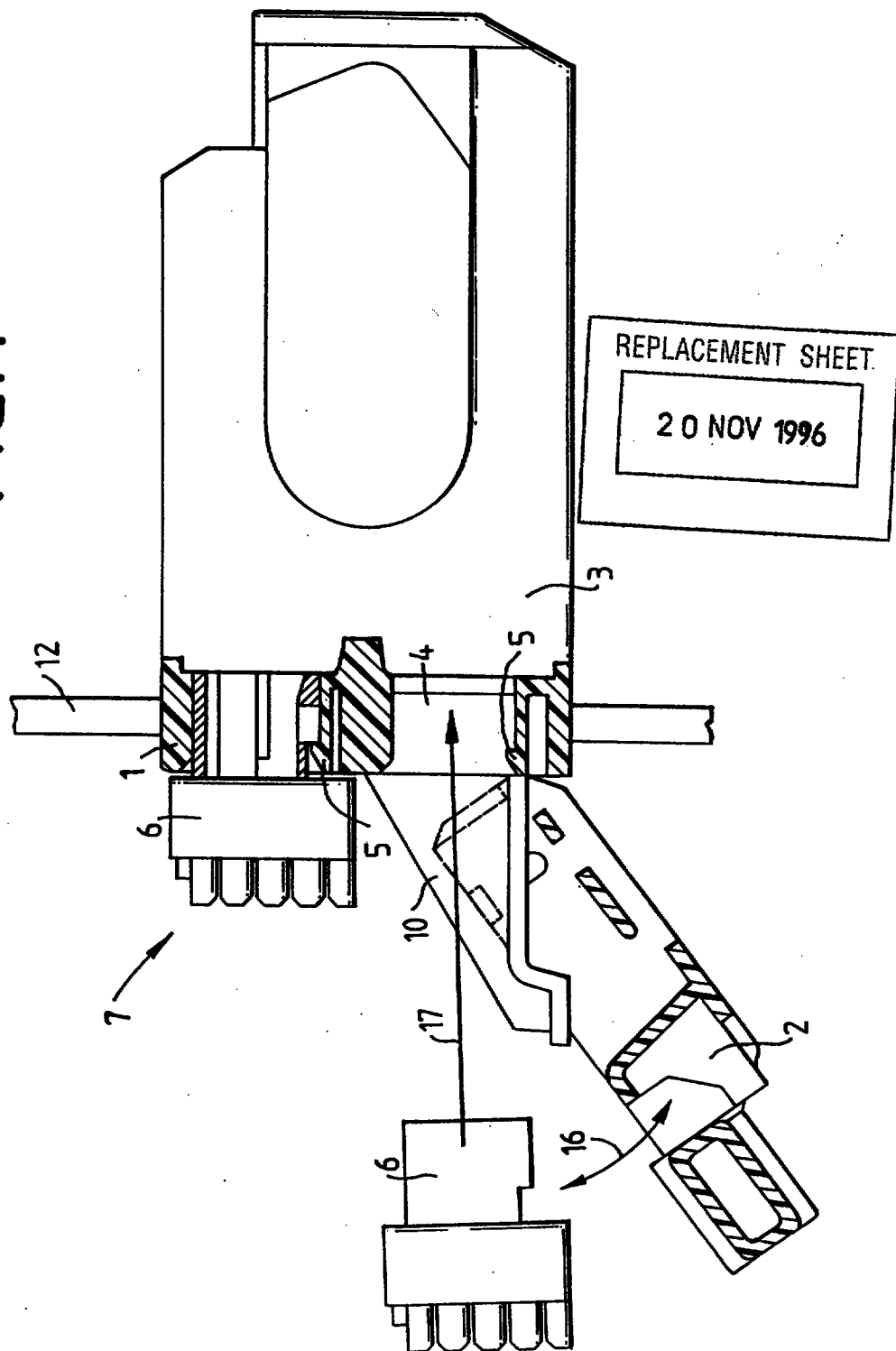


FIG.5

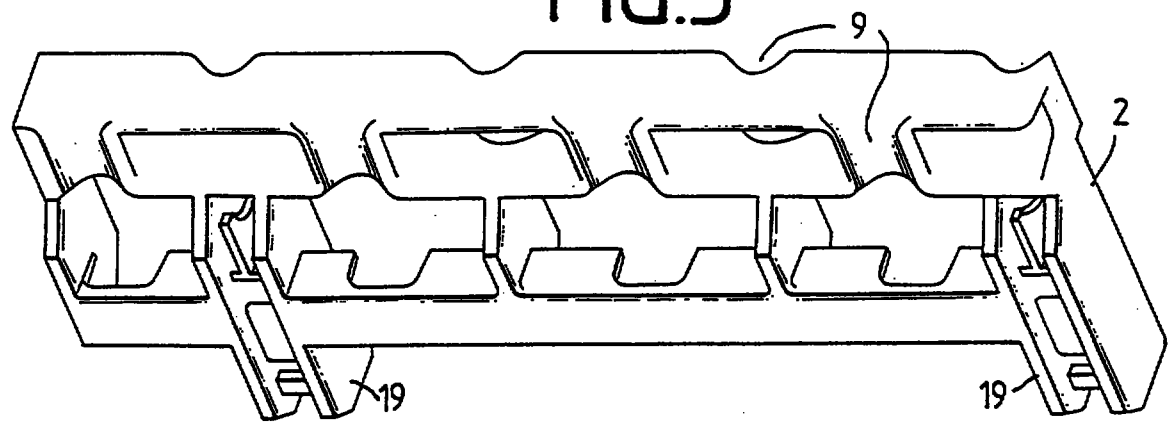


FIG.6

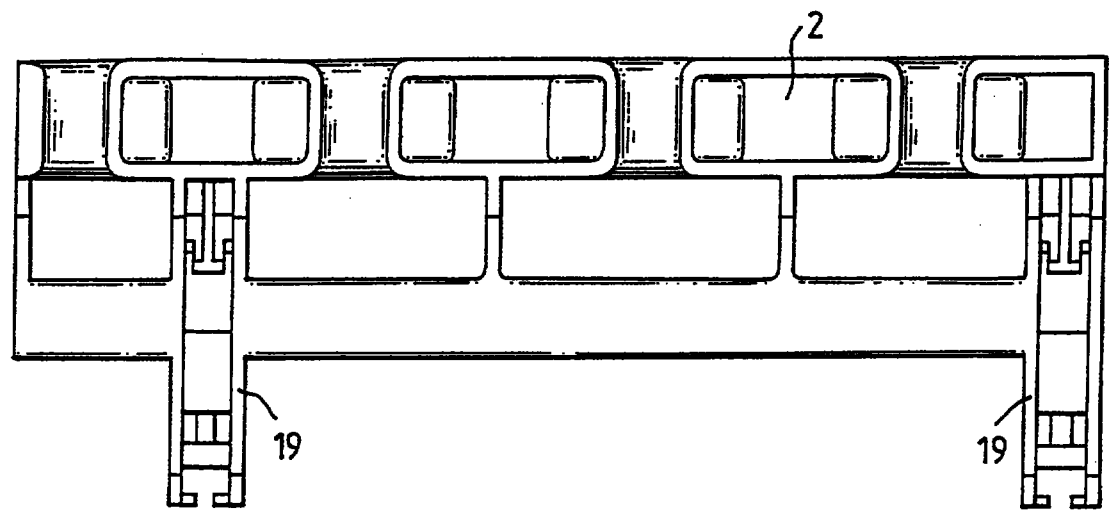
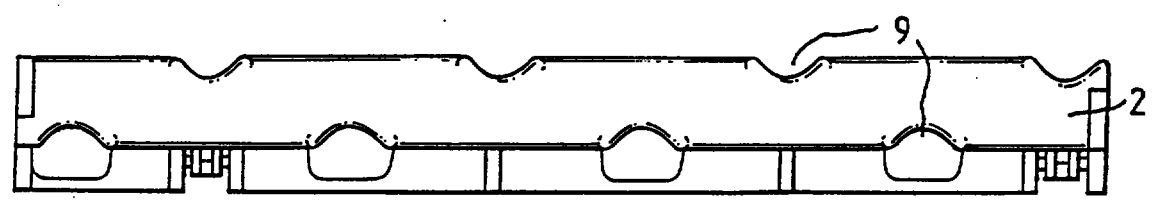


FIG.7



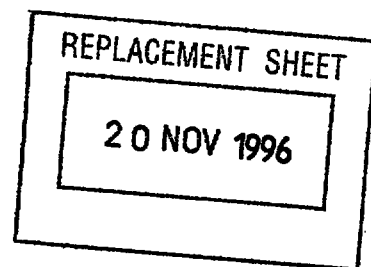
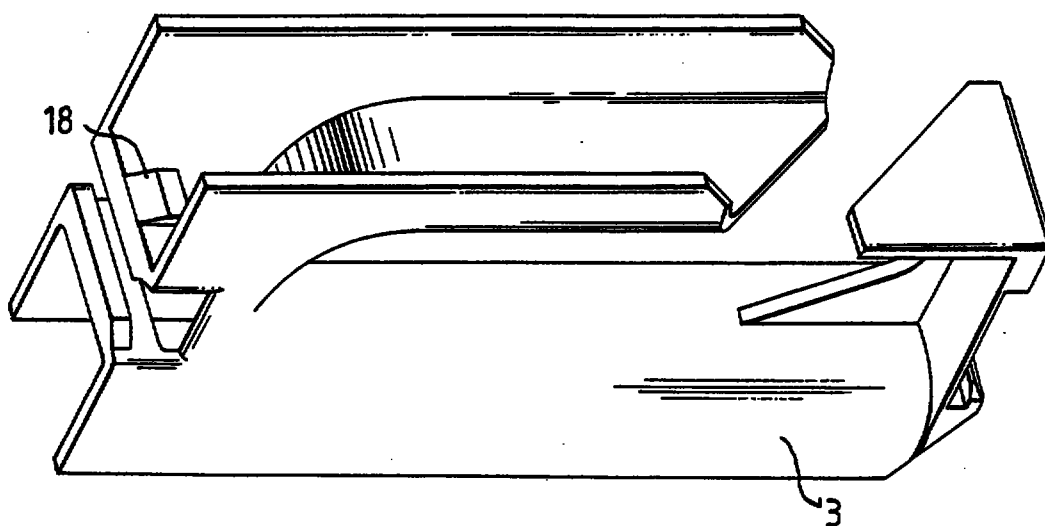


FIG.8





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WHAT IS CLAIMED IS:

1. A mounting device for voice/data communication RJ connection elements, comprising:
a mounting panel having a front side and a rear side and having receiving portions adjacent to recesses defined in said mounting panel, said recesses each defining a space for one of the RJ connection elements; and
a rear-side cable guiding portion removably connected to said rear side of said mounting panel at a location corresponding to said receiving portions, said rear-side cable guiding portion being supported by said mounting panel movably between a swung in position and a swung out position, spaced from said swung in position; and
front-side cable guiding means, connected to said mounting panel front side for guiding cable at said front-side of said mounting panel, said front-side cable guiding means comprising a lateral cable guiding ring removably connected to said front side of said mounting panel.
2. A mounting device according to claim 1, wherein said rear-side cable guiding portion is connected to said mounting panel and comprises cable guiding channels, each of said cable guiding channels being disposed adjacent to one of said receiving portions.
3. A mounting device according to claim 1, wherein said front-side cable guiding means is connected to said mounting panel adjacent to one of said receiving portions.
4. A mounting device according to claim 1, wherein said receiving portions include clips for releasably holding said RJ connection elements.
5. A mounting device according to claim 1, wherein said mounting panel is formed of plastic material.
6. A mounting device according to claim 5, wherein said mounting panel plastic material is provided with reinforcement means for reinforcing said plastic material.
7. A mounting device according to claim 5, wherein said reinforcement means is provided as reinforcing plastic filling said mounting panel.



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8. A mounting device according to claim 6, wherein said reinforcement means is provided as a metal rail, said metal rail for reinforcing said mounting panel.
9. A mounting device according to claim 6, wherein said reinforcement means is provided as a plastic rail, said plastic rail for reinforcing said mounting panel.
10. A mounting device for voice/data communication RJ connection elements, comprising:
a mounting panel having a front side and a rear side and having receiving portions adjacent to recesses defined in said mounting panel, said recesses defining a space for the RJ connection elements;
a rear-side cable guiding portion removably connected to said rear side of said mounting panel at a location corresponding to said receiving portions, said mounting panel including latch lug means and said rear side cable guiding portion including latch lug receiving means, said latch lug means and said latch lug receiving means cooperating for supporting said rear side cable guiding portion in a first position, connected to said mounting panel and supporting said rear side cable guiding portion in a swung out position, from said first position, connected to said mounting panel; and
front-side cable guiding means connected adjacent to said front side for guiding cables at the front side of said mounting panel, said front-side cable guiding means comprising a lateral cable guiding ring removably connected to said front side of said mounting panel.
11. A mounting device according to claim 10, wherein said front-side cable guiding means includes a lateral cable guiding ring movably disposed and connected to said mounting panel.
12. A mounting device according to claim 10, wherein said rear-side cable guiding portion comprises cable guiding channels, each of said cable guiding channels being disposed adjacent to one of said receiving portions.
13. A mounting device for voice/data communication RJ connection elements, comprising:
a mounting panel having a front side and a rear side and having receiving portions adjacent to recesses defined in said mounting panel, said recesses defining a space for the RJ



connection elements;

a rear-side cable guiding portion removably connected to said rear side of said mounting panel at a location corresponding to said receiving portions, said mounting panel including latch lug means and said rear side cable guiding portion including latch lug receiving means, said latch lug means and said latch lug receiving means cooperating for supporting said rear side cable guiding portion in a first position connected to said mounting panel and supporting said rear side cable guiding portion in a swung out position, from said first position, connected to said mounting panel wherein a range of movement of said rear-side cable guiding means between said first position and said swung out position is 45° ; and

front-side cable guiding means for guiding cables at the front side of said mounting panel, said front-side cable guiding means comprising a lateral cable guiding ring removably connected to said front side of said mounting panel.

14. A mounting device according to claim 13, wherein said rear-side cable guiding portion comprises cable guiding channels, each of said cable guiding channels being disposed adjacent to one of said receiving portions.

