(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 682 743 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
12.08.2020 Bulletin 2020/33

(21) Application number: **04800171.3**

(22) Date of filing: **05.11.2004**

(51) Int Cl.:
E06B 7/14 *(2006.01)*

(86) International application number:
PCT/NL2004/000779

(87) International publication number:
WO 2005/045168 (19.05.2005 Gazette 2005/20)

(54) **A FRAME PROVIDED WITH A DRAINAGE SYSTEM, A METHOD FOR PLACING A TUBE IN SUCH A FRAME AS WELL AS A TUBE SUITABLE FOR USE IN SUCH A FRAME**

MIT EINEM DRÄNAGESYSTEM VERSEHENER RAHMEN, VERFAHREN ZUM ANBRINGEN EINES ROHRES IN EINEM RAHMEN SOWIE ZUR VERWENDUNG IN SOLCH EINEM RAHMEN GEEIGNETES ROHR

CHASSIS POURVU D'UN SYSTEME D'ECOULEMENT, PROCEDE DE INSERTION D' UNE TUBE DANS LEDIT CHASSIS ET TUBE APPROPRIE POUR ETRE UTILISE DANS LEDIT CHASSIS

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

(30) Priority: **10.11.2003 NL 1024753**

(43) Date of publication of application:
26.07.2006 Bulletin 2006/30

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EP 1 682 743 B1

Printed by Jouve, 75001 PARIS (FR)

Description

[0001] A frame provided with a drainage system, a method for placing a tube in a passage of such a frame as well as a tube suitable for use in such a frame

[0002] The invention relates to a frame provided with a drainage system, which frame comprises a section provided with at least a plate member, a connecting member extending transversely to the plate member and at least one passage extending through at least one wall of the connecting member in which passage a tube suitable for water drainage is present, the frame is further provided with at least one sealing strip on said plate member.

[0003] The invention further relates to a method for placing a tube suitable for water drainage into a passage in a frame, which frame comprises a section provided with at least a plate member, a connecting member extending transversely to the plate member and at least one passage extending through at least one wall of the connecting member, the frame is further provided with at least one sealing strip on said plate member.

[0004] The invention also relates to a tube suitable for use in such a frame.

[0005] With such a frame, which is known from DE-A-21 55 010 the upper end of a tube is present in a sealing strip that has been specifically provided for that purpose. The sealing strip is located above the connecting member. The provision of such a sealing strip is relatively complicated, since the sealing strip must extend the full length of the section of the frame. Furthermore condensation and/or rain water which, in spite of the presence of the upper sealing strip, has nevertheless found its way between the sealing strip and the window-pane, is collected on the wall of the connecting member and cannot be drained therefrom to a space outside the frame. The lower end of the tube opens in a water collecting chamber.

[0006] The object of the invention is to provide a frame provided with a drainage system, wherein the frame is relatively compact and water on the wall can be drained therefrom.

[0007] This object is accomplished with the frame according to the invention in that the sealing strip is located below the connecting member, whilst at least a portion of an upper end of the tube is positioned in the wall to enable water on the wall to flow into the tube and a lower end of the tube extends trough the sealing strip, which upper end of the tube is provided with a fixing element supported on the wall.

[0008] This obviates the need for a separate space for the tube in the section, as a result of which the section can be of relatively compact construction, whilst the tube required for water drainage may be substantially completely hidden from view. The sealing strip may be removed at the location of the tube, be pushed aside by the tube or be provided with a passage. Since the upper end of the tube is at least partially positioned in the wall, water that is present on the wall can simply flow into the upper end of the tube and exit the tube again via the lower end thereof.

[0009] It is noted that from EP-A1-0 911 478 there is known a frame provided with a drainage system in which the drainage system is disposed under two section walls that extend parallel to each other, in which walls openings are present. With the frame, water that finds its way into the frame can flow into the opening in the upper wall and spread in the space between the walls. This is undesirable, because a controlled drainage of water is not possible in this way. In addition, the box-shaped drainage system of EP-A1-0 911 478 is relatively voluminous.

[0010] It is noted that from FR-A-2 250 888 there is known a drainage system wherein a lower end of the system is exposed to view from the outside, however. This is undesirable.

[0011] It is further noted that from German patent No. 2157655 a frame is known whereby the section comprises two sealing strips extending parallel to each other. In the case of a horizontally extending section, an upper sealing strip abuts against a first window-pane, and a water collecting chamber is present between the first window-pane, the upper sealing strip and the section. The section is provided with a passage extending from the water collecting chamber, in which passage a tube suitable for water drainage is present. The passage as well as the tube terminate on a side remote from the water collecting chamber at a point in front of a lower sealing strip that abuts against a second window-pane. By means of the tube, condensation and/or rain water which, in spite of the presence of the upper sealing strip, has nevertheless found its way between the sealing strip and the window-pane, is drained from the water collecting chamber to a space outside the frame. Normally this will be the outer side of a building of which the frame forms part. Since the tube terminates at a point in front of the lower sealing strip, the distance between the second window-pane against which the lower sealing strip abuts and the front side of the section is relatively large.

[0012] One embodiment of the frame according to the invention is characterized in that the section is provided with a guide located below the connecting member, whilst the passage extends through the guide and the sealing strip is positioned in the guide.

[0013] By providing the guide with the passage at the location of the tube, it becomes possible to place a tube having a relatively large water drainage capacity in the passage, whilst the section is sealed on either side of the tube, for example against a window-pane, by means of a sealing strip that is positioned in the guide.

[0014] Preferably, the tube is made of a flexible, deformable material, so that the tube can easily adapt to the shape of a space that is available between the section and the window-pane.

[0015] Another embodiment of the frame according to the invention is characterized in that the tube is originally an elongated tube, which has been provided with a tapered end prior to insertion into the passage, which tapered end is pulled through the passage in use for posi-

tioning a tube in the passage, wherein at least the tapered end is subsequently removed from the tube at the location of the sealing strip.

[0016] In this way, the tube can be inserted into the passage in a relatively simple manner by means of the tapered end. By subsequently removing the tapered end, a tube having an aperture substantially corresponding to the cross-sectional shape of the passage can be obtained.

[0017] Yet another embodiment of the frame according to the invention is characterized in that the sealing strip is compressed against spring force by the tube at the location where the tube is present.

[0018] In this way, the sealing strip need not be cut through. The advantage of dividing the sealing strip at the location of the tube, on the other hand, is that more space is available for the tube.

[0019] Another embodiment of the frame according to the invention is characterized in that the fixing element is provided with a groove extending along the circumference of the tube at one end thereof, wherein a wall of the section that bounds the passage is positioned in the groove.

[0020] In this way a clamped connection between the tube and the section is effected in a simple manner.

[0021] Another embodiment of the frame according to the invention is characterized in that the tube comprises an elongated opening at least at the location of the sealing strip.

[0022] Due to the elongated opening a large amount of water can be discharged of.

[0023] Yet another embodiment of the frame according to the invention is characterized in that the tube is provided with a hook- shaped element at an end remote from the sealing strip, which element abuts against a wall that bounds the passage.

[0024] By means of the hook-shaped element, an abutment for the tube against a wall that bounds the passage is obtained in a simple manner, as a result of which the tube is prevented from moving through the passage in its entirety in a relatively simple manner.

[0025] Furthermore it is an object of the invention to provide a method by means of which a tube suitable for water drainage can be placed in a frame in a relatively simple manner.

[0026] This object is accomplished with the method according to the invention in that a relatively narrow end of the tube is moved through the passage until the tube takes up a desired position in the passage, after which the relatively narrow end of the tube is cut off to a desired length, in which desired position a lower end of the tube extends through the sealing strip located below the connecting member, whilst at least a portion of an upper end of the tube is positioned in the wall to enable water on the wall to flow into the tube, which upper end of the tube is provided with a fixing element supported on the wall.

[0027] The relatively narrow end can be moved through the passage in a simple manner, as a result of which positioning the tube in the passage is relatively easy. By subsequently moving the relatively narrow end through the passage, for example by pulling at the relatively narrow end or by pushing down the tube at a side of the tube remote from the relatively narrow end, the tube is passed through the passage in a simple manner. By subsequently cutting off the relatively narrow end of the tube to a desired length, a tube having a desired aperture along the entire length thereof is obtained.

[0028] Another object of the invention is to provide a tube which is suitable for use in a frame according to the invention.

[0029] This object is accomplished with the tube according to the invention in that the tube is an elongated tube, which has been provided with a first removable tapered end to be pulled in use through a passage in a wall portion of a frame for positioning the tube in the passage and a fixing element at a second end remote from the tapered end, the fixing element comprises at least one projection extending substantially transversely to the central axis of the tube, whereby in use the at least one projection is supported on the wall portion of the frame, whilst in use water present on the wall portion will flow on either side of the at least one projection or between two projections into a part of the upper end of the tube that is positioned in the wall portion.

[0030] Such a tube is relatively easy to manufacture, and it can be placed into a passage of a frame in a relatively simple manner, as already described above. In addition, the tube is suitable for use in existing frames, such as the frame that is known from the aforesaid publication DE-2157655, in which a tube must be placed into a passage that is suitable for water drainage.

[0031] The invention will now be explained in more detail with reference to the drawings, in which:

Figs. 1A-1C schematically show various steps of the insertion of a tube into a passage in a frame;
Fig. 2 is a perspective view of a tube according to the invention;
Figs. 3A, 3B are a front view and a cross-sectional view, respectively, in the direction indicated by the arrows IIIb-IIIb, of a frame according to the invention;
Figs. 4-6 are perspective views of alternative embodiments of a part of a frame according to the invention; and
Figs. 7-11 are perspective views of alternative embodiments of a tube according to the invention.

[0032] In the drawing, like parts are indicated by the same numerals.

[0033] Figs. IA-LC show in cross-sectional view various steps of the insertion of a tube 1 as shown in Fig. 2 into a frame 2 according to the invention.

[0034] The frame 2 comprises an aluminium section 3 formed by means of an extrusion process, which comprises an elongated plate member 4, on either longitudinal side of which guides 5,6 are present, in which sealing

strips 7,8 (see Fig. 3B), for example made of a rubber, can be placed. Said sealing strips 7,8 are also called glazing rubbers.

[0035] Between the two longitudinal sides, the section 3 comprises a connecting member 9 extending transversely to the plate member 4, which plate member 4 is connected to another aluminium section 11 formed by means of an extrusion process via an insulating part 10. The part of the frame 2 as described so far is known per se and will not be explained in more detail, therefore.

[0036] Using the method according to the invention, a passage 13 is formed in the section 3, for example by means of a drill 12, through the lower guide 5 as well as through the member 9 in the direction indicated by the arrow P1. The wall portions 14,15, 16 of the guide 5 and the member 9, respectively, are shown in elevation rather than in sectional view at the location of the passage 13.

[0037] According to the user's requirements, a number of spaced- apart passages 13 may be formed in the section 3.

[0038] Fig. 2 shows a tube 1 according to the invention, which comprises a cylindrical portion 22 extending along a central axis 21, which cylindrical portion is provided with a tapered portion 24 at a first end 23 thereof, which tapered portion is provided with a local thickening 25 at an end remote from the cylindrical portion 22. On a side of the tube 1 remote from the first end 23, the tube 1 has a second end 26, which comprises a flared portion 27 as well as a portion 29 provided with a groove 28.

[0039] To insert the tube 1 into the passage 13, the local thickening 25 is inserted into the passage 13 in the wall portion 16 from a side remote from the groove 5, after which the tube 1 is guided far into the passage 13 in the direction indicated by the arrow P2. The tapered portion 24 and the relatively small local thickening 25 make it relatively easy to insert the tube into the passage 13. Once the local thickening 25 has been passed through the passage 13 in the wall portion 15, a pulling force may be exerted on the local thickening 25, as a result of which the tube 1 is pulled further in the direction indicated by the arrow P2 until the tube 1 occupies the position that is shown in Fig. 1C. In this position, the tube 1 is positioned in the passage 13 in the guide 5 as well as in the passages 13 in the wall portions 15, 16 with the cylindrical portion 22 thereof. The groove 28 is present in the passage 13, near the wall portion 6, with the wall portion 29 abutting against a side of the wall portion 16 remote from the wall portion 15. The wall portion 29 forms an abutment, so that the tube 1 cannot move any further in the direction indicated by the arrow P2, or only if a relatively large force is exerted thereon. As is shown in Fig. iC, the tube 1 is now cut off by means of a tool, such as a knife 30, at the location of the bottom side 31 of the section 3. As a result, the tube 1 is virtually hidden from view from a side of the section 3 remote from the tube 1. The tube 1 may also be cut off at any other desired position, of course.

[0040] After the insertion of the tube 1, sealing strips 7, 8 are placed in the guides 5, 6 (see Fig. 3B). The guide 5 is interrupted at the location of the tube 1, and the sealing strip 7 is only present on either side of the tube 1 in the groove 5.

[0041] Fig. 3A shows a front elevation of a complete frame 2, a cross-sectional view of which, in the direction indicated by the arrows 11 lb-11 lb, is shown in Fig. 3B. In addition to the section 3 and the tube 1 present therein, the frame 2 comprises two double window-panes 33, 34, which abut against the sealing strips 7 and 8, respectively. Two aluminium sections 35, 36 (glazing beads) formed by means of an extrusion process are furthermore attached to the section 11, which aluminium sections are provided with sealing strips 37, 38, which abut against the window-panes 33, 34 on a side remote from the sealing strips 7. As is shown in Fig. 3B, the tube 1 is elastically deformed at the location of the window-pane 33, as a result of which the tube 1 also functions as a seal for the sealing strip 7 that is interrupted at the location of the tube 1. If water penetrates between the sealing strip 8 and the window- pane 34 into a rebate 39 located under the window-pane 34, said water will flow over the wall portion 16 to the upper end of the tube 1 that is positioned in the wall portion 16, and subsequently it will flow out of the rebate 39, in the direction indicated by the arrow P3, via the tube 1. Since the tube 1 is integrated in the sealing strip 7, as it were, the tube 1 does not take up any additional space, as a result of which a relatively compact frame 2 is obtained, which has been provided with a water drainage system in a relatively simple manner.

[0042] Fig. 4 shows an alternative embodiment of a tube 41 placed in a frame 3, which tube comprises a cylindrical portion 43 provided with circumferential ridges 42. The tube is provided with a plate-shaped element 44 at one end and with a tubular portion 45 at the end remote from said first end, which tubular portion 45 is flanked by two fin- shaped plates 46. The tube 41 is passed through the passages 13 formed in the wall portions 15, 16 in the direction indicated by the arrow P4, with the plate-shaped element 44 serving to guide the tube and to provide a point of application for a pulling force to be exerted on the tube 41. Once the tube 41 is in position, it is cut off just above the wall portion 16, with the ridges 42 providing a strong fixation between the wall portions 15, 16 and the tube 41. As a result of the presence of the wings 46, an elongated opening is obtained in the end of the tube 41.

[0043] Fig. 5 shows another embodiment of a tube 51 according to the invention, which is provided with a strip 52 that extends transversely to the central axis of the tube 51, forming hooks that are supported on a side of the wall portion 16 remote from the lower end 54. As a result, the tube 51 is suspended from the wall portion 16 by means of the hooks 53, as it were.

[0044] Water present on the wall portion 16 will flow into the

part of the upper end of the tube 51 that is positioned in the wall portion 16 on either side of the strip 52. The wall

of the tube 51 forms an adequate seal with the wall portion 16 at the location of the wall portion 16, so that water can only flow into the tube 51.

[0045] Fig. 6 shows yet another embodiment of a tube 61 according to the invention, which comprises an elongated portion 62, a first end 63 of which is positioned in an elongated passage 13 formed in the section 3 at the location of the guide 5. On a side remote from the guide 5, the tube 61 is provided with elements 64 extending transversely to the central axis of the tube 62, which elements are supported on the wall portion 16.

[0046] Water present on the wall portion 16 will flow between the elements into the part of the upper end of the tube 61 that is positioned in the wall portion 16.

[0047] Fig. 7 shows an embodiment of a tube 71 according to the invention, which comprises an elongated portion 72 provided with a number of circumferential ridges 73. The tube 71 is provided with a tapered guide element 74 at a first end, by means of which the tube 71 can be inserted into an elongated passage 13 in the opposite direction of the arrow P2 in a relatively simple manner. On a side remote from the tapered end 74, the tube 71 comprises a portion 75 having a smooth outer wall, which portion is to be cut off. The portion 75 is cut off at the location of the wall portion 15.

[0048] Fig. 8 shows an embodiment of a tube 81 formed by means of a dip moulding process, which tube corresponds in large measure to the tube 1, except for the fact that the end remote from the local thickening 25 comprises a flared portion 82, which is made of a harder plastic than the rest of the tube 81. Said tube 81 can be inserted into the frame by pulling at the thickening 25 as well as by hammering or pushing down the portion 82. In addition, the strengthened portion 82 provides a stronger, tighter connection with the frame.

[0049] Fig. 9 shows an embodiment of a tube 91 according to the invention, which, seen from a first end 23 thereof, comprises a local thickening 25, a tapered portion 24, an outlet opening 92 formed therein for reasons connected with the injection moulding process, a cylindrical portion 22 provided with ridges 93, a flared portion 27, a groove 28, an annular portion 94 and another flared portion 95. The tube 91 is passed through the passage 13 in the opposite direction of the arrow P2. The flared portion 95 is then cut off at the location of the lower wall portion 15, whilst the first end 23 is cut off at the location of the wall portion 16. As a result of the presence of the flared portion 95, the opening in the tube 91 is relatively large and elongated in shape at the location of the wall portion 15.

[0050] Fig. 10 shows an embodiment of a tube 101 according to the invention, which corresponds in large measure to the tubes that have been discussed above, except for the fact that the tube comprises a ring 103 provided with notches 102 at an end remote from the thickening 25, as a result of which water can flow into the tube more easily.

[0051] Fig. 11 shows an embodiment of a tube 114 according to the invention, which comprises a substantially fully cylindrical portion 112, which is provided with a flared end 27 at one end, and with a strip 113 that extends transversely to the central axis of the tube 114, by means of which the tube 114 can be suspended from a wall 16.

[0052] The tube is preferably made of an elastically deformable material, as a result of which the tube can readily be adapted in particular to the shape that is desired at the location of the sealing strip 7.

[0053] It is also possible to press the tube 1 between the sealing strip 7 and the window-pane 33 under deformation of the sealing strip 7. In that case the opening that is available for the passage of water therethrough will be relatively small, however.

[0054] It is also possible not to provide a sealing strip in the guide 5 at the location of the tube 1 and not to drill through the guide 5 in the manner that is shown in Fig. 1A. In that case, too, the opening that is available for draining water will be smaller than in the situation in which the groove 5 is locally interrupted at the location of the tube 1.

[0055] The passage preferably has a diameter of about 8 mm or a dimension of about 5 x 25 mm in the case of a rectangular cross-section.

[0056] It is also possible to make the section 3 entirely of plastic, aluminium or steel, for example.

[0057] According to another possibility, a spacer is placed in the end of the tube that extends through the sealing strip, as a result of which the end of the tube cannot be compressed to the extent that its passage is completely shut off, so that an opening is retained at all times.

Claims

1. A frame (2) provided with a drainage system, which frame (2) comprises a section (3) provided with at least a plate member (4), a connecting member (9) extending transversely to the plate member (4) and at least one passage (13) extending through at least one wall (16) of the connecting member (9) in which passage (13) a tube (1) suitable for water drainage is present, the frame (2) is further provided with at least one sealing strip (7) on said plate member (4), **characterized in that** the sealing strip (7) is located below the connecting member (9), whilst at least a portion of an upper end of the tube (1) is positioned in the wall (16) to enable water on the wall (16) to flow into the tube (1) and a lower end of the tube (1) extends trough the sealing strip (7), which upper end of the tube (1) is provided with a fixing element supported on the wall (16).

2. A frame (2) according to claim 1, **characterized in that** the section (3) is provided with a guide (5) located below the connecting member (9), whilst the

passage (13) extends through the guide (5) and the sealing strip (7) is positioned in the guide (5).

3. A frame (2) according to any one of the preceding claims, **characterized in that** the tube (1) is an elongated tube (1), which has been provided with a tapered end prior to insertion into the passage (13), which tapered end is pulled through the passage (13) in use for positioning a tube (1) in the passage (13), wherein at least the tapered end is subsequently removed from the tube (1) at the location of the sealing strip (7).

4. A frame (2) according to any one of the preceding claims, **characterized in that** the sealing strip (7) is compressed against spring force by the tube (1) at the location where the tube (1) is present.

5. A frame (2) according to any one of the preceding claims, **characterized in that** the fixing element is provided with a groove (28) extending along the circumference of the tube (1) at one end thereof, wherein a wall (16) of the section (3) that bounds the passage (13) is positioned in the groove (28).

6. A frame (2) according to any one of the preceding claims, **characterized in that** the tube (1) comprises an elongated opening extending perpendicular to the axis of the tube at least at the location of the sealing strip (7).

7. A frame (2) according to any one of the preceding claims, **characterized in that** the fixing element is provided with a hook-shaped element at an end remote from the sealing strip (7), which element abuts against a wall (16) that bounds the passage (13).

8. A method for placing a tube (1) suitable for water drainage into a passage (13) in a frame (2), which frame (2) comprises a section (3) provided with at least a plate member (4), a connecting member (9) extending transversely to the plate member (4) and at least one passage (13) extending through at least one wall (16) of the connecting member (9), the frame (2) is further provided with at least one sealing strip (7) on said plate member (4), **characterized in that** a relatively narrow end of the tube (1), being relatively narrow with respect to the rest of the tube, is moved through the passage (13) until the tube (1) takes up a desired position in the passage (13), after which the relatively narrow end of the tube (1) is cut off to a desired length, in which desired position a lower end of the tube (1) extends through the sealing strip (7) located below the connecting member (9), whilst at least a portion of an upper end of the tube (1) is positioned in the wall (16) to enable water on the wall (16) to flow into the tube (1), which upper end of the tube (1) is provided with a fixing element supported on the wall (16).

9. A tube (51, 61, 114) suitable for use in a frame (2) according to any one of the preceding claims 1-7, which tube (51, 61, 114) is an elongated tube (51, 61, 114), which has been provided with a first removable tapered end (24) to be pulled in use through a the passage (13) in a wall portion (16) of a frame (2) for positioning the tube (51, 61, 114) in the passage (13) and a fixing element at a second end remote from the tapered end (24), the fixing element comprises at least one projection (52, 64, 113) extending substantially transversely to the central axis of the tube (1), whereby in use the at least one projection (52, 64, 113) is supported on the wall portion (16) of the frame (2), whilst in use water present on the wall portion (16) will flow on either side of the at least one projection (52, 113) or between two projections (64) into a part of the upper end of the tube (51, 61, 114) that is positioned in the wall portion (16).

10. A tube (1) according to claim 9, **characterized in that** the first removable tapered end is provided with a local thickening (25).

Patentansprüche

1. Rahmen (2), der mit einem Drainagesystem versehen ist, wobei der Rahmen (2) ein Profil (3) umfasst, das mit mindestens einem Platten-element (4), einem Verbindungselement (9), das sich quer zum Plattenelement (4) erstreckt, und mindestens einem Durchgang (13) versehen ist, der sich durch mindestens eine Wand (16) des Verbindungselements (9) erstreckt, wobei in dem Durchgang (13) ein Rohr (1) vorhanden ist, das zur Wasserdrainage geeignet ist, wobei der Rahmen (2) ferner mit mindestens einem Dichtungsstreifen (7) an dem Plattenelement (4) versehen ist, **dadurch gekennzeichnet, dass** der Dichtungsstreifen (7) unterhalb des Verbindungselements (9) angeordnet ist, während mindestens ein Abschnitt eines oberen Endes des Rohrs (1) in der Wand (16) positioniert ist, damit Wasser auf der Wand (16) in das Rohr (1) fließen kann, und ein unteres Ende des Rohrs sich durch den Dichtungsstreifen (7) erstreckt, wobei das obere Ende des Rohrs (1) mit einem an der Wand (16) abgestützten Befestigungselement versehen ist.

2. Rahmen (2) nach Anspruch 1, **dadurch gekennzeichnet, dass** das Profil (3) mit einer Führung (5) versehen ist, die unter dem Verbindungselement (9) angeordnet ist, während sich der Durchgang (13) durch die Führung (5) erstreckt und der Dichtungsstreifen (7) in der Führung (5) angeordnet ist.

3. Rahmen (2) nach einem der vorstehenden Ansprü-

che, **dadurch gekennzeichnet, dass** das Rohr (1) ein längliches Rohr (1) ist, das vor dem Einführen in den Durchgang (13) mit einem sich verjüngenden Ende versehen worden ist, wobei das sich verjüngende Ende bei der Verwendung zum Positionieren eines Rohrs (1) in dem Durchgang (13) durch den Durchgang (13) gezogen wird, wobei mindestens das sich verjüngende Ende anschließend am Ort des Dichtungsstreifens (7) von dem Rohr (1) entfernt wird.

4. Rahmen (2) nach einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der Dichtungsstreifen (7) durch das Rohr (1) am Ort, an dem das Rohr (1) vorhanden ist, gegen Federkraft zusammen-gedrückt wird.

5. Rahmen (2) nach einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Befestigungselement mit einer Nut (28) versehen ist, die sich entlang des Umfangs des Rohrs (1) an einem Ende desselben erstreckt, wobei eine Wand (16) des Profils (3), die den Durchgang (13) begrenzt, in der Nut (28) angeordnet ist.

6. Rahmen (2) nach einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Rohr (1) eine längliche Öffnung aufweist, die sich zumindest am Ort des Dichtungsstreifens (7) senkrecht zur Achse des Rohres erstreckt.

7. Rahmen (2) nach einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Befestigungselement mit einem hakenförmigen Element an einem von dem Dichtungsstreifen (7) entfernten Ende versehen ist, welches Element an einer den Durchgang (13) begrenzenden Wand (16) anliegt.

8. Verfahren zum Einsetzen eines zur Wasserableitung geeigneten Rohres (1) in einen Durchgang (13) in einem Rahmen (2), wobei der Rahmen (2) ein Profil (3) aufweist, das mit mindestens einem Plattenelement (4), einem sich quer zum Plattenelement (4) erstreckenden Verbindungselement (9) und mindestens einem sich durch mindestens eine Wand (16) des Verbindungselementes (9) erstreckenden Durch-gang (13) versehen ist, wobei der Rahmen (2) ferner mit mindestens einem Dichtungsstreifen (7) auf dem Plattenelement (4) versehen ist, **dadurch gekennzeichnet, dass** ein relativ schmales Ende des Rohrs (1), das in Bezug auf den Rest des Rohrs relativ schmal ist, durch den Durchgang (13) bewegt wird, bis das Rohr (1) eine gewünschte Position im Durchgang (13) einnimmt, wonach das relativ schmale Ende des Rohrs (1) auf eine gewünschte Länge abgeschnitten wird, wobei in dieser gewünschten Position ein unteres Ende des Rohrs (1) durch den unterhalb des Verbindungselements (9) angeordneten Dichtungsstreifen (7) verläuft, während mindestens ein Teil eines oberen Endes des Rohrs (1) in der Wand (16) positioniert ist, um zu ermöglichen, dass Wasser an der Wand (16) in das Rohr (1) fließt, wobei das obere Ende des Rohrs mit einem an der Wand (16) abgestützten Befestigungselement versehen ist.

9. Ein Rohr (51, 61, 114), das zur Verwendung in einem Rahmen (2) nach einem der vorstehenden Ansprüche 17 geeignet ist, wobei das Rohr (51, 61, 114) ein längliches Rohr (51, 61, 114) ist, das mit einem ersten entfernbaren verjüngten Ende (24) versehen ist, das im Gebrauch durch einen Durchgang (13) in einem Wandabschnitt (16) eines Rahmens (2) zum Positionieren des Rohrs (51, 61, 114) in dem Durchgang (13) zu ziehen ist, und mit einem Befestigungselement an einem zweiten, von dem verjüngten Ende (24) entfernten Ende, wobei das Befestigungselement mindestens einen Vorsprung (52, 64, 113) aufweist, der sich im Wesentlichen quer zur Mittelachse des Rohrs (1) erstrecken, wobei im Gebrauch der mindestens eine Vorsprung (52, 64, 113) auf dem Wandabschnitt (16) des Rahmens (2) abgestützt ist, während im Gebrauch Wasser, das auf dem Wandabschnitt (16) vorhanden ist, auf beiden Seiten des mindestens einen Vorsprungs (52, 113) oder zwischen zwei Vorsprüngen (64) in einen Teil des oberen Endes des Rohrs (51, 61, 114) fließt, der im Wandabschnitt (16) angeordnet ist.

10. Rohr (1) nach Anspruch 9, **dadurch gekennzeichnet, dass** das erste entfernbare verjüngte Ende mit einer lokalen Verdickung (25) versehen ist.

Revendications

1. Cadre (2) pourvu d'un système de drainage, lequel cadre (2) comprend une section (3) pourvue d'au moins un organe de plaque (4), d'un organe de connexion (9) s'étendant transversalement vers l'organe de plaque (4) et d'au moins un passage (13) s'étendant à travers au moins une paroi (16) de l'organe de connexion (9), passage (13) dans lequel un tube (1) adapté pour le drainage d'eau est présent, le cadre (2) est en outre pourvu d'au moins une bande d'étanchéité (7) sur ledit organe de plaque (4), **caractérisé en ce que** la bande d'étanchéité (7) est située sous l'organe de connexion (9), tandis qu'au moins une portion d'une extrémité supérieure du tube (1) est positionnée dans la paroi (16) pour permettre à de l'eau sur la paroi (16) de s'écouler dans le tube (1), et une extrémité inférieure du tube (1) s'étend à travers la bande d'étanchéité (7), laquelle extrémité supérieure du tube (1) est pourvue d'un élément de fixation supporté sur la paroi (16).

2. Cadre (2) selon la revendication 1, **caractérisé en ce que** la section (3) est pourvue d'un guide (5) situé sous l'organe de connexion (9), tandis que le passage (13) s'étend à travers le guide (5), et la bande d'étanchéité (7) est positionnée dans le guide (5).

3. Cadre (2) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le tube (1) est un tube (1) allongé, qui a été pourvu d'une extrémité conique avant l'insertion dans le passage (13), laquelle extrémité conique est tirée à travers le passage (13) en cours d'utilisation pour positionner un tube (1) dans le passage (13), dans lequel au moins l'extrémité conique est ensuite retirée du tube (1) à l'emplacement de la bande d'étanchéité (7).

4. Cadre (2) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la bande d'étanchéité (7) est comprimée contre une force élastique par le tube (1) à l'emplacement où le tube (1) est présent.

5. Cadre (2) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'élément de fixation est pourvu d'une rainure (28) s'étendant le long de la circonférence du tube (1) à une extrémité de celui-ci, dans lequel une paroi (16) de la section (3) qui délimite le passage (13) est positionnée dans la rainure (28).

6. Cadre (2) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le tube (1) comprend une ouverture allongée s'étendant perpendiculairement à l'axe du tube au moins à l'emplacement de la bande d'étanchéité (7).

7. Cadre (2) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'élément de fixation est pourvu d'un élément en forme de crochet à une extrémité distante de la bande d'étanchéité (7), lequel élément vient en butée contre une paroi (16) qui délimite le passage (13).

8. Procédé pour placer un tube (1) adapté pour le drainage d'eau dans un passage (13) dans un cadre (2), lequel cadre (2) comprend une section (3) pourvue d'au moins un organe de plaque (4), d'un organe de connexion (9) s'étendant transversalement vers l'organe de plaque (4) et d'au moins un passage (13) s'étendant à travers au moins une paroi (16) de l'organe de connexion (9), le cadre (2) est en outre pourvu d'au moins une bande d'étanchéité (7) sur ledit organe de plaque (4), **caractérisé en ce qu'**une extrémité relativement étroite du tube (1), étant relativement étroite par rapport au reste du tube, est déplacée à travers le passage (13) jusqu'à ce que le tube (1) prenne une position souhaitée dans le passage (13), après quoi l'extrémité relativement étroite du tube (1) est coupée à une longueur souhaitée, position souhaitée dans laquelle une extrémité inférieure du tube (1) s'étend à travers la bande d'étanchéité (7) située sous l'organe de connexion (9), tandis qu'au moins une portion d'une extrémité supérieure du tube (1) est positionnée dans la paroi (16) pour permettre à de l'eau sur la paroi (16) de s'écouler dans le tube (1), laquelle extrémité supérieure du tube (1) est pourvue d'un élément de fixation supporté sur la paroi (16).

9. Tube (51, 61, 114) adapté pour être utilisé dans un cadre (2) selon l'une quelconque des revendications précédentes 1 à 7, lequel tube (51, 61, 114) est un tube (51, 61, 114) allongé, qui a été pourvu d'une première extrémité conique amovible (24) devant être tirée en cours d'utilisation à travers un passage (13) dans une portion de paroi (16) d'un cadre (2) pour positionner le tube (51, 61, 114) dans le passage (13), et un élément de fixation à une seconde extrémité distante de l'extrémité conique (24), l'élément de fixation comprend au moins une saillie (52, 64, 113) s'étendant sensiblement transversalement à l'axe central du tube (1), moyennant quoi, en cours d'utilisation, l'au moins une saillie (52, 64, 113) est supportée sur la portion de paroi (16) du cadre (2), tandis qu'en cours d'utilisation, de l'eau présente sur la portion de paroi (16) s'écoulera sur l'un ou l'autre des côtés de l'au moins une saillie (52, 113) ou entre deux saillies (64) dans une partie de l'extrémité supérieure du tube (51, 61, 114) qui est positionnée dans la portion de paroi (16).

10. Tube (1) selon la revendication 9, **caractérisé en ce que** la première extrémité conique amovible est pourvue d'un épaississement local (25).

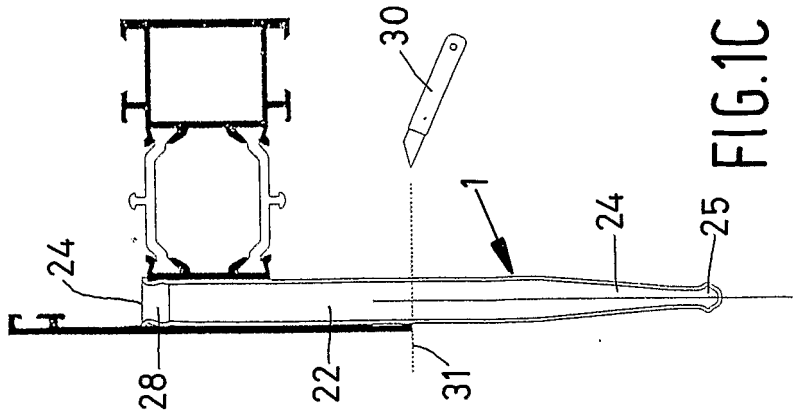

FIG.1C

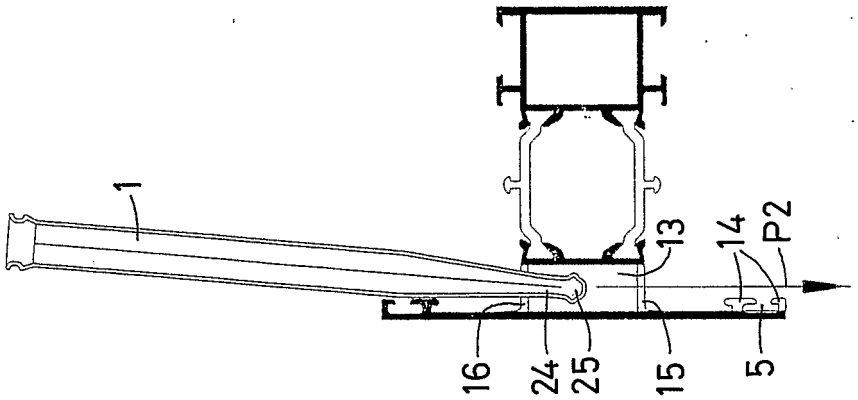

FIG.1B

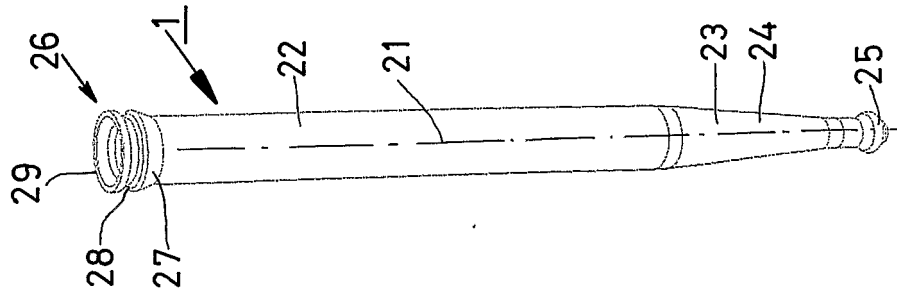

FIG.2

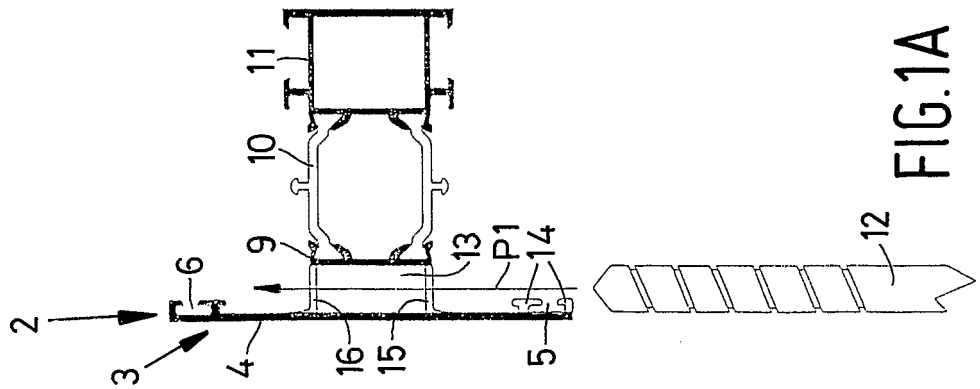

FIG.1A

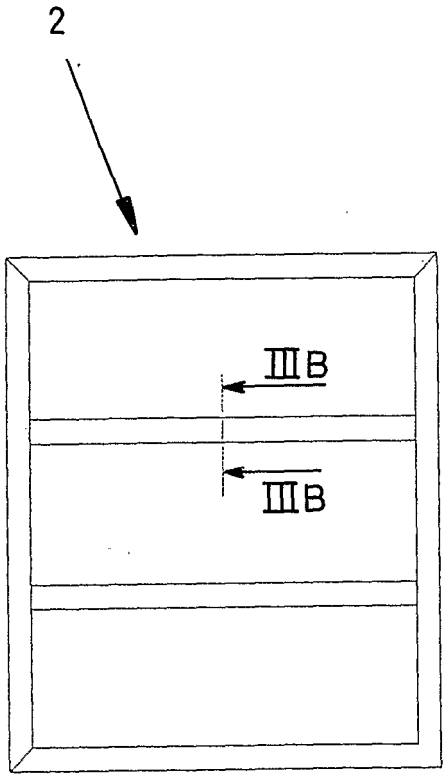

FIG. 3A

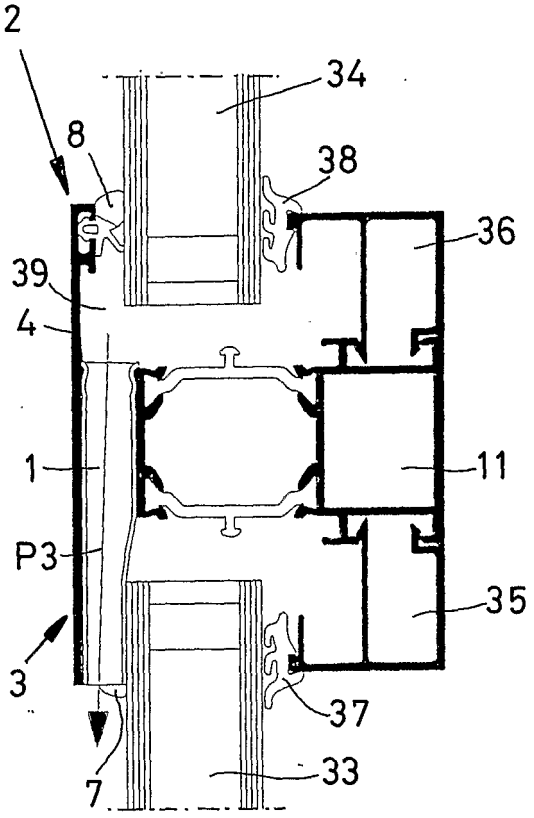

FIG. 3B

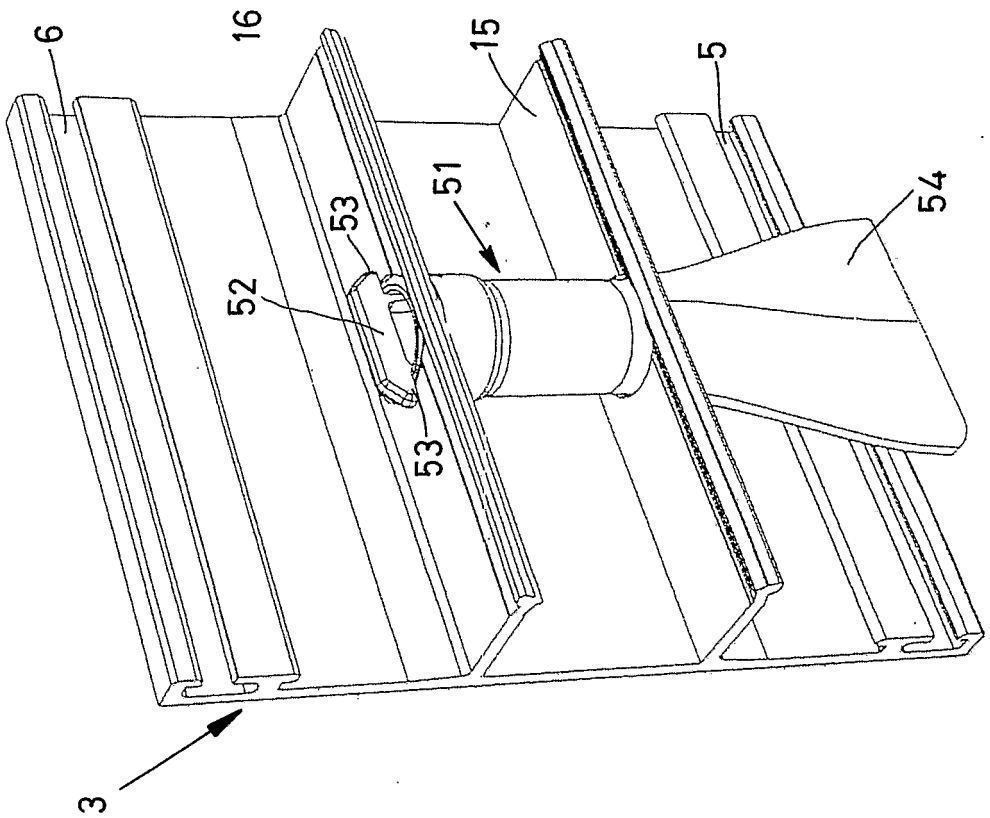

FIG. 5

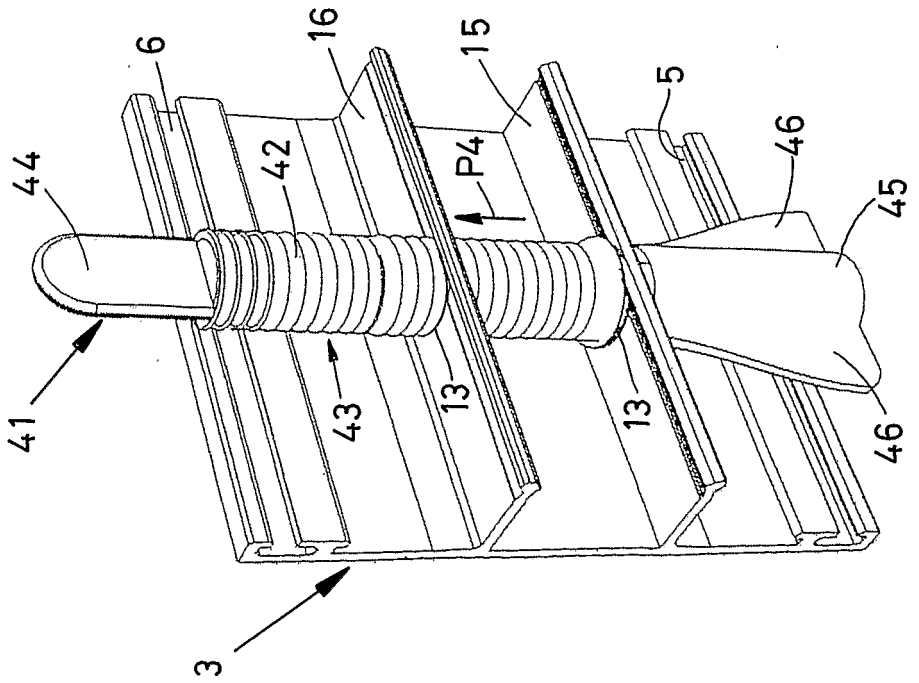

FIG. 4

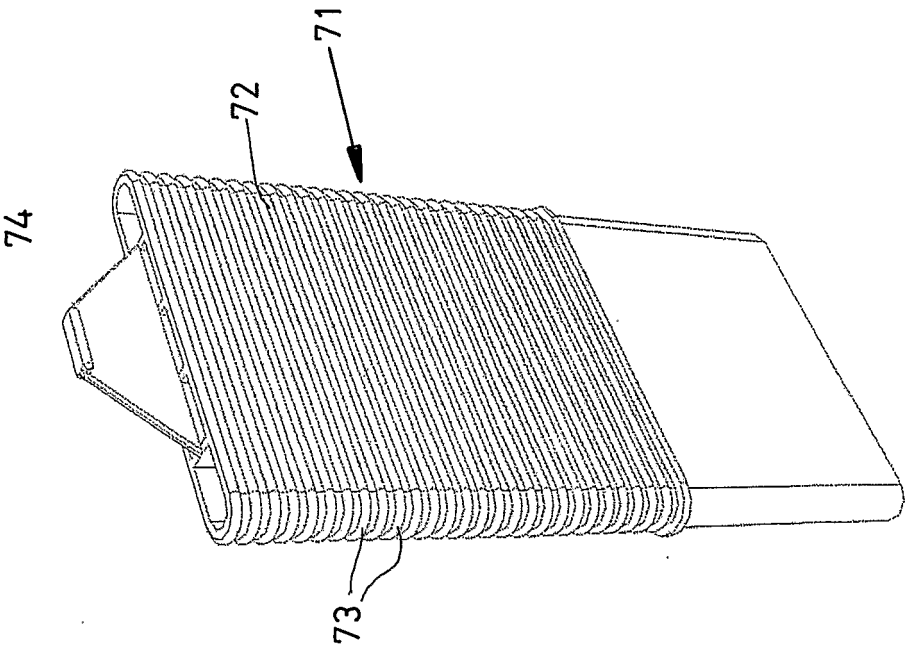

FIG. 7

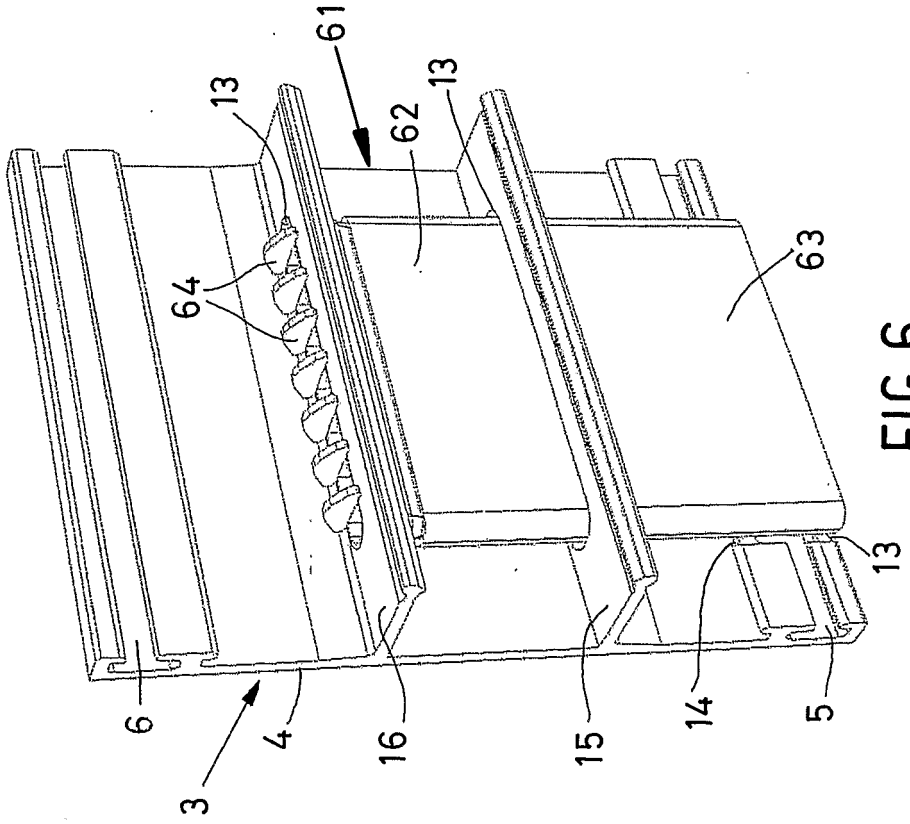

FIG. 6

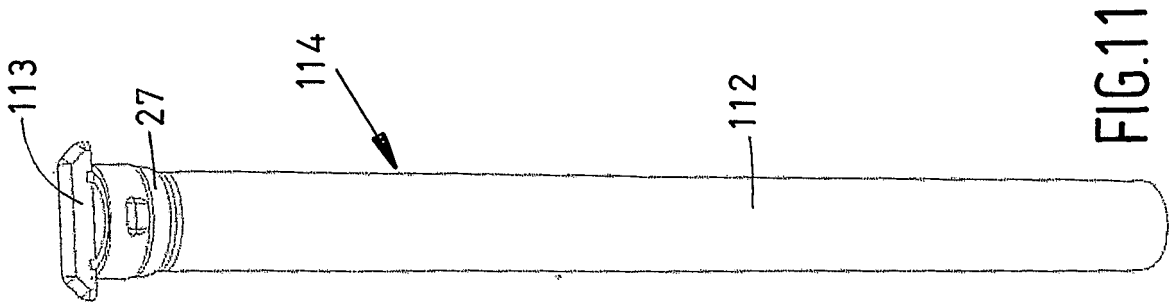

FIG.11

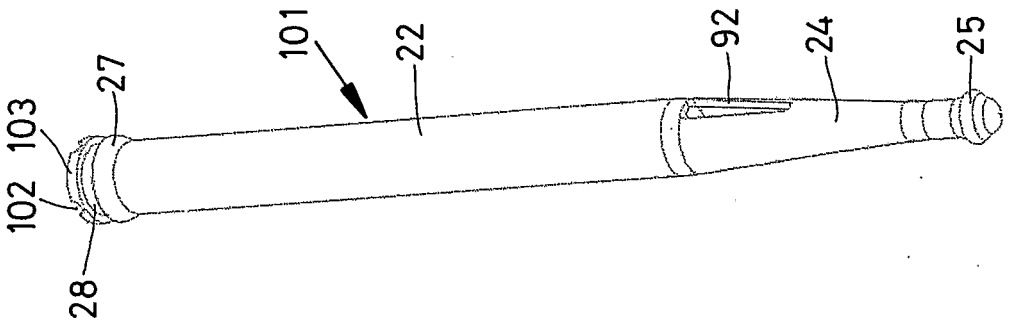

FIG.10

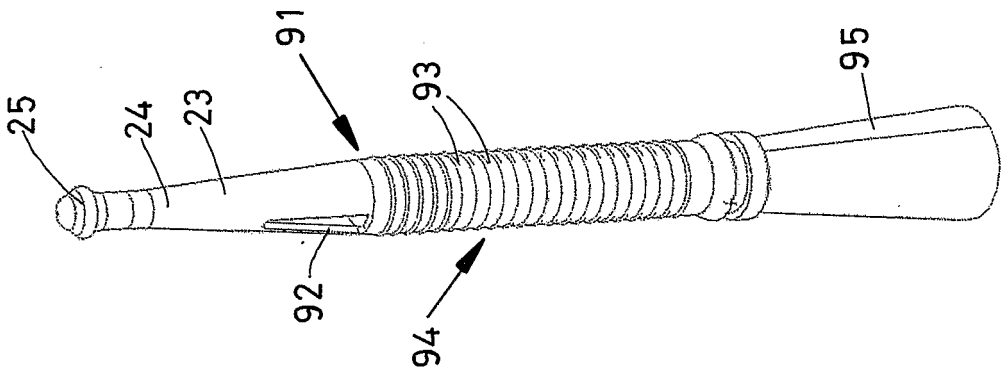

FIG.9

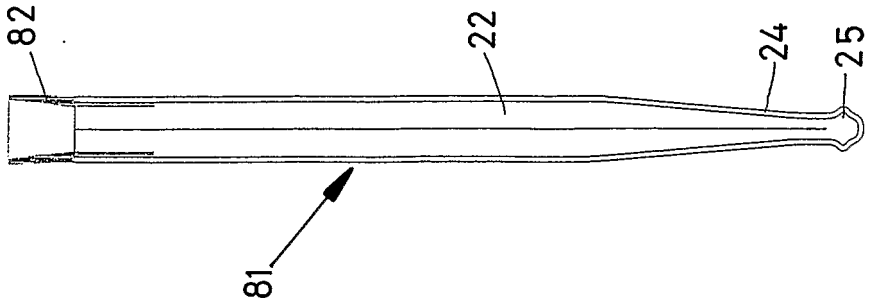

FIG.8

REFERENCES CITED IN THE DESCRIPTION

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