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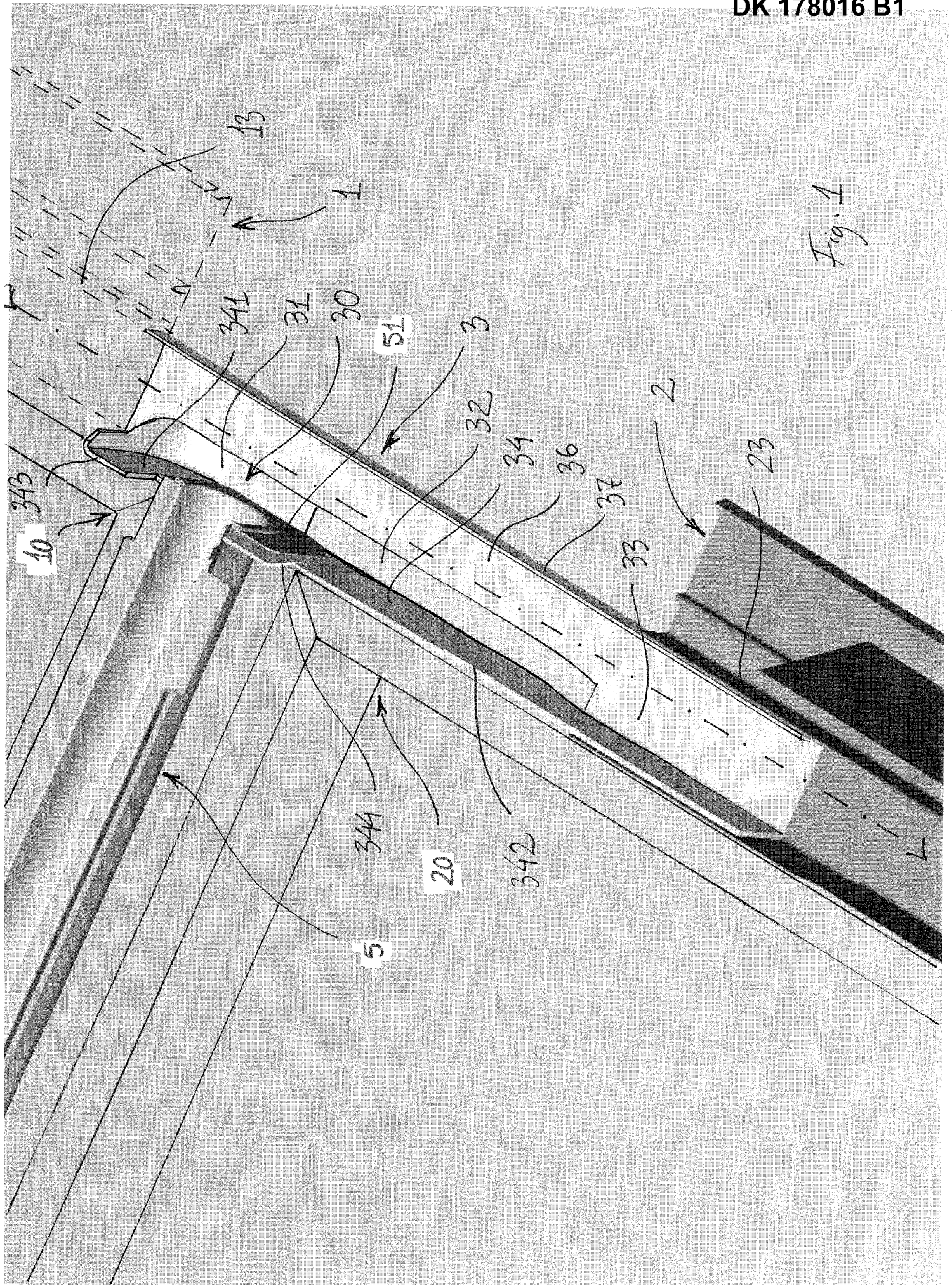
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A flashing kit for use at a joint between two structures each penetrating a roof or a wall meet, at least one of these structures being arranged in an inclined roof, where a first roof penetrating structure is arranged above a second structure seen in the direction of slope of the roof. The flashing kit comprises a first side flashing member adapted for being arranged along an outer side surface of the first roof penetrating structure, a second side flashing member adapted for being arranged along an outer side surface of the second structure, a gutter flashing member adapted for being arranged between a lower outer surface of the first roof penetrating structure and an upper outer surface of the second structure, and a third side flashing member adapted for inter- connecting the gutter flashing member with at least the second side flashing member. The third side flashing member has a substantially U-shaped cross section with a first leg of the U being adapted for engaging a side outer surface of the second structure and the base of the U being adapted for being arranged substantially in parallel with the plane with the roof. The third side flashing member further comprising a receiving section adapted for being arranged at level with the gutter flashing member, a draining section adapted for being interconnected to the second side flashing member, and a lifting section between the receiving and draining sections. In the mounted state the draining section is positioned below the receiving section seen in the direction of slope of the roof and higher than the receiving section seen perpendicular to the plane of the roof.

Fortsættes ...



The present invention relates to a flashing kit for use at a joint between two structures each penetrating a roof or a wall meet, at least one of these structures being arranged in an inclined roof, where a first roof penetrating structure is arranged above a second structure seen in the direction of slope of the roof, comprising a first side flashing member adapted for being arranged along an outer side surface of the first roof penetrating structure, a second side flashing member adapted for being arranged along an outer side surface of the second structure, and a gutter flashing member adapted for being arranged between a lower outer surface of the first roof penetrating structure and an upper outer surface of the second structure. The invention also relates to such a flashing kit for use with roof penetrating structures arranged in an inclined roof with a first roof penetrating structure above a second roof penetrating structure and to a method for mounting a flashing kit.

Such a flashing kit is known for example from DK154099B, where the gutter flashing member is provided with a T-shaped end section serving to interconnect the first and second side flashing members. This works very well when standard type roof windows are mounted in the normal mounting depth in relation to the roof, but as the flashing member are arranged substantially in plane with the roofing it cannot be used when roof windows are mounted in the so-called "Encastrée" manner, where the window does not project as far above the plane of the roof as is normally the case. This type of mounting has become still more common over the later years since it improves the insulation properties of the construction and is thought to be more aesthetically pleasing.

Similar problems arise if the gutter flashing member is also to be used for draining off water condensing on the inside of the window, as it must then be located below the level of the inside of the window pane.

These problems have been solved with flashing kits where at least the second side flashing member is provided with a depression extending in the length direction of the flashing member closest to the roof penetrating structure and with a transition section at the lowermost end having a smaller slope than the rest of the flashing member. The depression then serves as a

drainage channel leading water along the side of the roof penetrating structure and when reaching the transition section the water is "lifted" up to the plane of the roofing by the decreased slope and led onto the bottom flashing members. Such side flashing members are also shown in DK154099B.

5 This, however, necessitates the use of different kinds of side flashing members depending on the installation depth of the roof penetrating structure, thus making it necessary to manufacture and keep a large number of different flashing products in stock and involving the risk of choosing the wrong one. Moreover, a space in the roof structure, which could otherwise have been
10 used for example for insulating material, must be kept open to make room for the drainage channel and it may sometimes be necessary to remove material from the roof structure to create the space.

 A flashing kit with side flashing members having a depression serving to receive water from the gutter flashing member is also known from
15 WO2004/055294.

 It is therefore the object of the invention to provide a flashing kit and a method for flashing roof penetrating structures, which minimize the needed number of different flashing members or flashing kits and/or which have less impact on the design of the roof structure.

20 This is achieved with a flashing kit, which further comprises a third side flashing member adapted for interconnecting the gutter flashing member with at least the second side flashing member, said third side flashing member having a substantially U-shaped cross section with a first leg of the U being adapted for engaging a side outer surface of the second structure, a second leg being substantially parallel to the first leg and the base of the U being
25 adapted for being arranged substantially in parallel with the plane with the roof, a length axis of the third side flashing member being substantially perpendicular to the plane of the U, and said third side flashing member further comprising a receiving section, a lifting section and a draining section, the
30 receiving section being adapted for being arranged at level with the gutter flashing member to receive water there from, the draining section being adapted for being interconnected to the second side flashing member in an

overlapping joint, and the lifting section being arranged between the receiving and draining sections at an angle to at least the draining section so that in the mounted state the draining section will be positioned below the receiving section seen in the direction of slope of the roof and higher than the receiving section seen perpendicular to the plane of the roof. When intended for being used with two roof windows mounted one above the other in the direction of slope of the window, the third side flashing member is adapted for interconnecting the gutter flashing member with at least the second side flashing member, said third side flashing member having a substantially U-shaped cross section with a first leg of the U being adapted for engaging a side outer surface of the second roof penetrating structure, a second leg being substantially parallel to the first leg and the base of the U being adapted for being arranged substantially in parallel with the plane with the roof, a length axis of the third side flashing member being substantially perpendicular to the plane of the U, and said third side flashing member further comprising a receiving section, a lifting section and a draining section, the receiving section being adapted for being arranged at level with the gutter flashing member to receive water there from, the draining section being adapted for being interconnected to the second side flashing member in an overlapping joint, and the lifting section being arranged between the receiving and draining sections at an angle to at least the draining section so that in the mounted state the draining section will be positioned below the receiving section seen in the direction of slope of the roof and higher than the receiving section seen perpendicular to the plane of the roof.

The provision of a third side flashing member, which serves as an intermediate piece between the gutter flashing member and the second side flashing member entails that the second side flashing member does not need to be specially adapted for the installation depth but can in all cases be located substantially in plane with the roofing. Depending on the type of roof penetrating structures and another installation details the gutter flashing member may potentially also be the same for all installation depths.

In the following reference will be made to two roof penetrating struc-

tures for the sake of simplicity, but unless otherwise it is explicitly state it is to be understood that it also applies to the cases where a roof penetrating structure is arranged above a structure penetrating a wall.

The first side flashing member may be connected to the third side
5 flashing member and/or directly to the second side flashing member as will be elaborated below.

The dimensions of the third side flashing member will depend primarily on the dimensions of the other flashing members connected to it, i.e. the receiving section must for example be sufficiently long to accommodate the
10 width of the gutter flashing member and the draining section must provide a reliable transition to the second side flashing member.

The receiving and draining sections preferably have substantially the same slope in the mounted state as the slope of the roof, while the lifting section is arranged horizontally or with a relatively small slope in the same direction as the slope of the roof. The lifting section may thus be said to "lift" the
15 water from the level of the gutter flashing member and the receiving section to the level of the draining section and second side flashing member. A small slope on the lifting section is preferred since it will make sure that water is drained off properly and prevent impurities from accumulating, but for practical and aesthetical reasons the slope will normally not exceed 10° above
20 horizontal.

One of the most important qualities of the third side flashing member is water-tightness and it is therefore preferred, that the flashing is formed from a single piece of material, for example by moulding, drawing and/or folding. It
25 can be made from any suitable material such as metal or rubber, but in a preferred embodiment is made from plastic, such as for example polyvinyl chloride (PVC), polyoxymethylene (POM), polycarbonate (PC) or high-density polyethylene (HDPE). Depending on the material, it may be given a surface coating, and different materials may be used in combination, such as by providing metal reinforcement at appropriate places in a flashing member made
30 primarily from plastic. The other flashing members of the kit can be made from the same material as the third side flashing member, but it is presently

preferred to use lacquered or painted aluminium, which in practice has proven well suited for the purpose.

In a first aspect of the invention the first leg of the third side flashing member comprises a first section adapted for interconnection to the gutter
5 flashing member and a second section adapted for engaging the side outer surface of the second roof penetrating structure, said first section being off-set in relation to the second section in a direction away from the second leg.

In the mounted state the first section of the first leg is located in the space between the first and second roof penetrating structures. This has numerous advantages. For one, the same size gutter flashing member to be
10 used with roof penetrating structures of different widths, not only when they are first installed but also when the structure is later modified, for example when adding additional insulating material or replacing cladding or covering members. Only the third side flashing member will have to be replaced when
15 the width of the roof penetrating structure changes, thus minimizing the number of components to be manufactured and sold and reducing the risk of choosing the wrong flashing members. Another advantage is that receiving section is relatively wider than when the first section is not off-set, thus increasing the water holding capacity of the third side flashing member, which
20 may particularly be needed when water from the first side flashing member is led onto the receiving section. Thirdly, the joint between the gutter flashing member and the third side flashing member is not located in direct continuation of the first side flashing member, where large amounts of water may be coming from above.

25 It is noted that the expression "in the space between the first and second roof penetrating structures" is intended to cover all part, which are associated with the respective structures including insulation material and the like and that the first section therefore does not have to be located between for example the frames of two roof windows.

30 The provision of third side flashing members with more or less off-set first sections is particularly useful when the third side flashing members are made from plastic with limited deformability. When making the third side flash-

ing member of aluminium or like materials, the natural deformability and low elasticity of the material means that small variations in the width of the roof penetrating structures may be compensated for simply by bending the first leg slightly away from or towards the third leg.

5 The first leg of the third side flashing member preferably comprises a recess having substantially the same shape as the cross-sectional shape of the gutter flashing member perpendicularly to its length axis, so that when mounting the flashing kit, an outer end of the gutter flashing member can be arranged in the recess. In this context the length axis extends from one end of
10 the gutter to the other, i.e. horizontally from one side of the roof penetrating structures to the other in the mounted state.

To provide a stable and water-tight joint between the third side flashing member and the gutter flashing member one or both of them may be provided with a connector flange adapted for forming an overlapping joint with
15 the other flashing member. These connector flanges are preferably substantially perpendicular to the parts of the flashing members to which they are attached. I.e. the flange on the gutter flashing member is perpendicularly to its length axis and thus parallel to the first leg of the third side flashing member in the mounted state, whereas the flange or flanges on the third side flashing
20 member is perpendicular to the first leg and extending in the length direction of the gutter flashing member in the mounted state, preferably away from the second leg. Each flashing member may be provided with more than one flange.

In a second aspect of the invention, the third side flashing member
25 comprises a side portion extending from the second leg away from the first leg substantially in plane with the draining section and a side flange projecting from the side portion substantially away from the plane of the receiving section and extending substantially in parallel with the length axis of the third side flashing member. In this context the length axis extends from the end intended to engage the first side flashing member to the end intended to engage the
30 second side flashing member, i.e. the in the intended direction of water transport and the slope of the roof in the mounted state.

The side flange may be adapted for engagement with flanges, recesses, grooves or slits in/on one or more other side flashing member(s) and be used for positioning side flashing members in relation to other each other and/or interconnecting side flashing members. In a structurally simple embodiment this is achieved by providing the first side flashing member with a longitudinal upwards bent flange having the cross-sectional shape of an inverted U and arranging this bent flange to ride on the side flange. The longitudinal engagement between these two flanges is easy to establish during mounting of the flashing kit and will provide a very exact positioning of the two side flashing members in relation to each other. Another example is to provide the second side flashing member with a longitudinal flange arranged at a distance from the outer side surface of the roof penetrating structure, which is marginally larger than the distance between the first leg of the third side flashing member and the side flange. The third side flashing member may then be arranged between the outer side surface of the roof penetrating structure and the flange on the second side flashing member. This too will provide a great precision in positioning the third side flashing member and when dimensioned appropriately a tight fit between the side flashing members may even result in the third side flashing member being fixed. These two embodiments may of course be combined so that the first side flashing member rides on an upper part of the side flange in the mounted state, while a lower part is in engagement with the second side flashing member.

Moreover, if the side flange extends substantially over the entire length of the third side flashing member, it will prevent water from running sideways off the third side flashing member and penetrate underneath the roofing. This principle is known from traditional side flashing members for use with undulated roofing materials such as tiles and will therefore not be described in further detail here.

In a third aspect of the invention the flashing kit comprises a fourth side flashing member adapted for interconnecting the first and second side flashing members, one end of the fourth side flashing member engaging the first side flashing member, another end engaging the second side flashing

member, and a centre section spanning at least partially over the third side flashing member. By spanning over the third side flashing member the fourth side flashing member diverts at least some of the water draining off the first side flashing member, so that it is led directly onto the second side flashing member instead of onto the third side flashing member. This considerably reduces the risk of overflow from the third side flashing member.

Moreover, as the fourth side flashing member partially covers the third side flashing member, the risk of dirt such as leaves entering the channel or pocket formed by the receiving and lifting sections is reduced.

As described for the third side flashing member above, the fourth side flashing member may also be provided with one or more recesses, grooves, slits, flanges or projecting parts adapted for engagement with corresponding flanges, recesses, grooves, slits or openings in one or more other flashing member(s). In this way the fourth side flashing member may be positioned in relation to and/or interconnected to one or more other flashing member(s) by one or more recesses, grooves, slits, flanges or projecting parts being arranged in engagement with corresponding flanges, recesses, grooves, slits or openings in one or more of the other flashing member(s). In a preferred and structurally simple embodiment the fourth side flashing member is provided with a bent flange, which rides on a side flange of the third side flashing member as described for the first side flashing member above, and the bent flange of the first side flashing member is then adapted for riding on the bent flange of the fourth side flashing member. In this way the side flashing members come to overlap in a cascading manner.

It is to be understood that the fourth side flashing member may in principle also be used in constructions, where there the third side flashing member is not a separate member, but where the receiving, lifting and draining sections are included in the first or/and second side flashing members and/or gutter flashing member.

Whenever terms such as "upper", "lower", "inner", "outer", "interior" and "exterior" are used in the description they are referring to the intended orientation in the mounted state of the flashing kit, not to orientations in which

a particular part or component may be found during manufacture, transport, storage or installation.

In the following the invention will be described in more detail with reference to embodiments of the invention shown in the drawing, where:

5 Fig. 1 shows a perspective view of a flashing kit mounted at the right-hand side of a pair of roof windows mounted one above the other,

Fig. 1b corresponds to Fig. 1 but with a different configuration of the roof windows and hence a different position of the third side flashing member,

Fig. 2 corresponds to Fig. 1 but showing only the flashing kit and with
10 a fourth side flashing member added,

Fig. 3 shows a third side flashing member corresponding to the one in Figs 1 and 2 but intended for use at the left-hand side of a pair of roof windows,

Figs 4-6 shows the third side flashing member in Fig 3 seen from the
15 bottom, side and top, respectively,

Figs 7 and 8 show the third side flashing member in Figs 4-6 seen from respective ends,

Fig. 9 shows part of the third side flashing member in Figs 4-8 seen in cross-section along the line A-A in Fig. 6,

20 Fig. 10 shows another embodiment of a third side flashing member, which has no side flange,

Fig. 11 shows another embodiment of a third side flashing member, where the first leg is plane,

Fig. 12 shows another embodiment of a third side flashing member,
25 which has no side flange and where the first leg is plane, and

Fig. 13 shows the side flashing member in Fig. 12 when mounted in a structure, where a roof window meets a façade window.

A flashing kit according to the invention is shown in a perspective partially cut away view in Fig. 1. A first side flashing member 1, which is only
30 indicated in puncture lines, is arranged along the outer side of a first roof window 10, and a second side flashing member 2 is arranged along the outer side of a second roof window 20. Though reference is made only to roof win-

dows here and in the following it is to be understood that the flashing kit may also be used with other types of roof penetrating structure of a substantially rectangular shape. Accordingly, the roof windows 10, 20 have been illustrated as simple frames in Fig. 1 and have been left out entirely in Fig. 2.

5 Extending between the first side flashing member 1 and the second side flashing member 2 is a third side flashing member 3, which is further interconnected to a gutter flashing member 5 arranged between the first roof window 10 and the second roof window 20.

 The first and second side flashing members 1, 2 are of the type used
10 with tile roofings and mounted in the traditional manner at level with the roofing (not shown), whereas the gutter flashing member 5 is arranged in a relatively deep position. Typically the bottom of the gutter flashing member will be approximately 50 mm below the level of the first and second side flashing members seen in a direction perpendicular to the plane of the roof. The sec-
15 ond side flashing member has been shortened to give room for the third side flashing member, but is otherwise a standard side flashing member. Such shortening may be performed at the installation site and the standard side flashing member may be provided with an indication of where to cut it, so that this may easily be performed, even by persons without special knowledge.

20 The main purpose of the third side flashing member 3 is to lift the water from the level of the bottom of the gutter flashing member 5 to the level of the second side flashing member 2. To this end the third side flashing member is provided with a receiving section 31, which is substantially at level with the bottom of the gutter flashing member, and a lifting section 32 with a rela-
25 tively small slope extending from the receiving section to a draining section 33, which is substantially at level with the first and second side flashing members, reference now also being made to Figs 3-9. At the sides the receiving section 31 and lifting section 32 are delimited by a first leg 34 extending substantially in parallel with and engaging the outer surface of the second roof
30 window 20 and a second leg 35, which is arranged in parallel at a distance there from, thus forming a channel or pocket 30 at the upper end of the third side flashing member suitable for receiving water. If seen in cross-section the

third side flashing 3 thus has a U-shape, where the receiving and lifting sections form the base of the U. In the embodiment shown the first leg extends over the entire length of the third side flashing member as defined by length axis L, whereas the second leg becomes gradually smaller towards the draining section, so that the cross-sectional shape is angular at the lower end of the third side flashing member. It is, however, to be understood that the height of the first leg may be equal to or smaller than the height of the second leg, so that the first leg stops at the transition between the lifting and the draining section and/or that the second leg may form a flange at the side of the draining section facing away from the roof window. Likewise, it is to be understood that the height of the first and/or second leg may vary over the length of the third side flashing member.

The end of the gutter flashing member 5 is resting in a recess 38 in the first leg 34 of the third side flashing member 3 and a flange 51 on the gutter flashing member provides for an overlapping joint. This overlap not only makes the joint water-tight, but when a similar joint to a third side flashing member (not shown) at the opposition of the windows 10,20 is established, it also contributes to fixating the flashing kit. It is also possible to provide the third side flashing member with a similar flange (not shown) on the first leg extending along the gutter flashing member to provide an additional or alternative overlap. Such a flange should preferably extend away from the second leg 35 and be arranged on the lower side of the gutter flashing member.

In Fig. 1 the first side flashing member 1 is illustrated as ending in a straight cut at level with the upper end of the third side flashing member 3, but it will be understood that flanges designed for providing an overlapping joint between these two flashing members may also be provided. The first side flashing member It may also be provided with flanges (not shown) or the like serving to direct at least some of the water coming down the first side flashing member away from the pocket 30 and onto the flat side section 36 of the third side flashing member. Likewise it is to be understood that the first side flashing member may be provided with projecting parts (not shown), such as for example a part extending along the outer side of the third side flashing mem-

ber down to the second side flashing member 2. Such an extension might also be provided on the second side flashing member.

In the embodiment in Figs 1-9 the first leg 34 of the third side flashing member 3 comprises two off-set sections, a first section 341 at the upper end engaging the gutter flashing member and a second section 342 at the lower end engaging the outer side surface of the lower roof window 20. The first section is further away from the second leg 35 than the second section, thus making the channel or pocket 30 wider at the upper end than at the lower end and resulting in the first section being located in the space formed between the two roof windows. This not only increases the water receiving capacity but, also means that the joint between the gutter flashing member 5 and the third side flashing member is well protected. Moreover, by providing the third side flashing members with different widths, the same gutter flashing member may be used with roof penetrating structures of different widths, which for example allows the use of the same gutter flashing member for windows of different types or brands. Still another advantage is, that the off-set section may be used for interconnecting the third side flashing member to top and/or bottom coverings members (not shown) used over the gutter on the roof penetrating structures 10, 20 and/or side covering and/or cladding members (not shown) used at the sides of the roof penetrating structures. The shape of the upper inner corner 343 of the third side flashing member and the ledge 381 on the recess 38 in the first leg 34 is designed to facilitate the mounting of such covering and cladding members.

The first off-set section 341 of the first leg may in principle be connected to the second section 342 in any desired way as long as the watertightness is ensured, but here an inclined interconnecting section 344 provides optimal draining properties and avoid the accumulation of water and dirt.

At the opposite side of the channel or pocket 30 formed by the first and second legs 34, 35 and receiving and lifting sections 31, 32, facing away from the roof windows 10, 20 are a side section 36 and a side flange 37. The side section 36 extends over the entire length of the third side flashing mem-

ber 3 and will receive a large part of the water coming from the first side flashing member 1 and deliver it to the second side flashing member 2. The side flange 37 will prevent this water from flowing sideways off the third side flashing member.

5 The first and second side flashing members 1, 2 are here provided with upstanding flanges 13, 23, as is common with side flashing used together with undulated roofings, and the width of the side section 36 is so that the side flange 37 interacts with these flanges. As may be seen in Fig. 1, the side flange 37 lies closely against the inner side of the flange 23 on the sec-
10 ond side flashing member 2, so that the third side flashing member 3 is prevented from moving sideways. A bent flange 13 on the first side flashing member 1 may be made to ride (not shown) on the upper end of the side flange 37, which will provide a similar interlocking of these two side flashing members.

15 In Fig. 1b the third side flashing member in Fig. 1 have instead been mounted at a pair of roof windows 10, 20, which are provided with additional insulation 11, 21 at their outer side surfaces. As may be seen, this insulating material terminates at a distances from the corners of the windows frames and the first section 341 is located between the ends of the respective insulat-
20 ing pieces. As may be seen the width of the flange 345 extending perpendicular to the length axis of the third side flashing member has a width corresponding to the width of the insulation.

 Figs. 10-12 show alternative embodiments with and without an off-set first section 341 and with and without a side flange 37. Where applicable,
25 these embodiments have been provided with the same reference numbers as in Figs. 1-9.

 In Fig. 2 a fourth side flashing member 4 extending from the first side flashing member to the second side flashing member 2 and spanning over the third side flashing member 3 has been added. The upper end of the fourth
30 side flashing member is arranged under the lower end of the first side flashing member forming an overlapping joint with a length in the direction of slope of the roof of approximately 90 mm and a similar overlap is provided between

the lower end of the fourth side flashing member and the upper end of the second side flashing member.

The fourth side flashing member here has the same profile as the first and second side flashing members 1, 2, which makes the manufacture of the fourth side flashing member simple and cheap. A bent flange 13 of the first side flashing member rides on the corresponding, but locally compressed bent flange 43 of the fourth side flashing member at the overlap, and in the same way the bent flange 43 of the fourth side flashing member rides on the corresponding, but locally compressed bent flange 23 of the second side flashing member. Likewise, side flanges 14, 15, 44, 45, 24, 25 of the respective side flashing member are locally slightly off-set to allow a cascading overlap and these engagements between flanges may be sufficient to keep at least the fourth side flashing member in place. Depending on the resilience of the material(s) used it may also be possible to establish the overlap without first off-setting the flanges.

To allow water to get out of the third side flashing member 3 and onto the second side flashing member 2, the fourth side flashing member 4 is provided with an opening 46 above the lifting section 32 and draining section 33. Here the opening is provided by the lower inner corner of the fourth side flashing being cut off, which again makes the manufacture of the fourth side flashing member simple and cheap, but it would of course be possible to provide the opening with other sizes or shapes as long as proper water draining is ensured.

As described for the first side flashing member 1 above, a flange 41 or the like indicated by the dash-dotted line is provided above the opening 46 to divert water away from the pocket 30 in the third side flashing member 3 as shown by the arrows w, again minimizing the need for special adaptation of the first side flashing member 1. In Fig. 2 the flange is indicated as extending all the way down to the lower end of the fourth side flashing member 4 to prevent the water from flowing sideways into the pocket 30 in the third side flashing member, but it may be sufficient if it extends down to the upper outer corner 42 of the opening.

Fig. 13 shows how the flashing kit may be used where a roof window 10 is arranged above a façade window 200. By comparing to Fig. 1b it may be seen that the first leg 34 of the third side flashing member here does not need to have an be off-set section to be able to lie underneath the end of the
5 insulating material 11 on the roof window, since it is not in direct abutment against the outer side surface of the window. The lowermost part 40 of the roofing here serves as the second side flashing member.

In the drawing the dimensions of the different parts of the flashing kit is adapted for use with roof windows in a relative small building and in a north
10 European climate. They may, however, vary greatly and will of course depend on the dimensions of the roof penetrating structures and the nature of the load bearing structure in which they are mounted. Other factors such as the expected amounts of precipitation at the installation site should also be considered. One very important matter, which should always be taken into ac-
15 count, is the angle of the lifting section, which should never be negative, i.e. never slope in the opposite direction of the roof, since this would result in water accumulating in the pocket 30.

Even though the third and fourth side flashing members have been described as separate members, it is also possible to integrate either or both
20 of them into the first and/or second side flashing members, but this will of course mean that it is no longer possible to use standard side flashing members as the first and/or second side flashing member. Likewise, the fourth side flashing member may be integrated in the third side flashing member so that one member provides the functionality of both as described above.

25 Above the invention has been described with reference to its use when installing roof windows in a inclined roof, but it will be understood that it may also apply to other types of roof penetrating structures, such as solar collectors or solar panels. Likewise, it will be understood that when mounting two roof penetrating structures above each other a first, second, third and
30 fourth side flashing members will be used at both sides in a mirror-inverted manner, and that the same principles of mounting may also be used with larger groups of roof penetrating structures.

P A T E N T K R A V

1. Inddækningssæt til anvendelse ved en samling, hvor to konstruktioner, der hver gennembyder et tag eller en væg, mødes, hvor mindst en af disse konstruktioner er placeret i et skråt tag, hvor en første taggennembrydende konstruktion (10) er placeret over
5 en anden konstruktion (20, 200) set i tagets hældningsretning, hvilket sæt omfatter
- et første sideinddækningselement (1), der er indrettet til at blive placeret langs en udvendig sideoverflade af den første taggennembrydende konstruktion,
- et andet sideinddækningselement (2), der er indrettet til at blive placeret langs en udvendig sideoverflade af den anden konstruktion, og
10 et rendeinddækningselement (5), der indrettet til at blive placeret mellem en nedre udvendig overflade af den første taggennembrydende konstruktion og en øvre udvendig overflade af den anden konstruktion,
- k e n d e t e g n e t ved, at det yderligere omfatter
- et tredje sideinddækningselement (3), der er indrettet til at forbinde rendeinddækningselementet (5) med i det mindste det andet sideinddækningselement (2), hvor det
15 tredje sideinddækningselement har et i hovedsagen U-formet tværsnit med et første ben (34) af U'et indrettet til at være i kontakt med en udvendig sideoverflade af den anden konstruktion, et andet ben (35) i hovedsagen parallelt med det første ben og bunden af U'et indrettet til at blive placeret i hovedsagen parallelt med tagets plan, hvor en længdeakse (L) hos det tredje sideinddækningselement er i hovedsagen vinkelret på U'ets plan, og hvor det tredje sideinddækningselement yderligere omfatter et modtageafsnit (31), et løfteafsnit (32) og et dræningsafsnit (33), hvor modtageafsnittet er indrettet til at blive placeret i niveau med rendeinddækningselementet for at modtage vand derfra, hvor dræningsafsnittet er indrettet til at blive forbundet til det andet sideinddækningselement i en
20 overlappende samling, og hvor løfteafsnittet er placeret mellem modtageafsnittet og dræningsafsnittet i en vinkel i forhold til i det mindste dræningsafsnittet, således at dræningsafsnittet i den monterede tilstand vil være beliggende under modtageafsnittet set i tagets hældningsretning og højere end modtageafsnittet set vinkelret på tagets plan, og
- hvor det første ben (34) af det tredje sideinddækningselement (3) omfatter et første
30 afsnit (341), der er indrettet til at blive forbundet til rendeinddækningselementet (5), og et andet afsnit (342), der er indrettet til at komme i indgreb med den udvendige sideoverflade af den anden konstruktion, hvor det første afsnit er forsat i forhold til det andet afsnit i en retning væk fra det andet ben (35).
2. Inddækningssæt ifølge krav 1 til anvendelse med taggennembrydende konstrukti-
35 oner placeret i et skråt tag med en første taggennembrydende konstruktion (10) over en anden taggennembrydende konstruktion (20) set i tagets hældningsretning, omfattende
- et første sideinddækningselement (1), der er indrettet til at blive placeret langs en udvendig sideoverflade af den første taggennembrydende konstruktion,
- et andet sideinddækningselement (2), der er indrettet til at blive placeret langs en
40 udvendig sideoverflade af den anden taggennembrydende konstruktion, og

et rendeinddækningselement (5), der er indrettet til at blive placeret mellem en nedre udvendig overflade af den første taggennembrydende konstruktion og en øvre udvendig overflade af den anden taggennembrydende konstruktion,

kendetegnet ved, at det første ben (34) af det tredje sideinddækningselement (3) er indrettet til at komme i indgreb med en udvendig sideoverflade af den anden taggennembrydende konstruktion.

3. Inddækningssæt ifølge et hvilket som helst af de foregående krav, hvor det første ben (34) af det tredje sideinddækningselement (3) omfatter en reces (38), der har i hovedsagen samme facon som tværsnitsfaconen af rendeinddækningselementet (5) vinkelret på dets længdeakse, og hvor det tredje sideinddækningselement og/eller rendeinddækningselementet er forsynet med en forbindelsesflange (51), der er indrettet til at skabe en overlappende samling med henholdsvis rendeinddækningselementet og/eller det tredje sideinddækningselement.

4. Inddækningssæt ifølge et hvilket som helst af de foregående krav, hvor det tredje sideinddækningselement (3) yderligere omfatter en sidedel (36), der strækker sig fra det andet ben (35) væk fra det første ben (34) i hovedsagen i plan med dræningsafsnittet (33), og en sideflange (37), der rager ud fra sidedelen i hovedsagen væk fra modtageafschnittets (31) plan og strækker sig i hovedsagen parallelt med det tredje sideinddækningselements længdeakse (L).

5. Inddækningssæt ifølge krav 4, hvor sideflangen (37) er indrettet til at komme i indgreb med flanger, recesser, riller eller slidser (13, 23) i et eller flere andre sideinddækningselementer (1, 2, 3).

6. Inddækningssæt ifølge krav 4 eller 5, hvor sideflangen (37) strækker sig i hovedsagen over hele det tredje sideinddækningselements længde.

7. Inddækningssæt ifølge et hvilket som helst af de foregående krav, yderligere omfattende et fjerde sideinddækningselement (4), der er indrettet til at forbinde det første og andet sideinddækningselement (1, 2), mens det spænder i det mindste delvist over det tredje sideinddækningselement (3).

8. Inddækningssæt ifølge krav 7, hvor det fjerde sideinddækningselement (4) er forsynet med en eller flere recesser, riller, slidser, flanger eller udragende dele (43, 45), der er indrettet/indrettede til indgreb med tilsvarende flanger, recesser, riller, slidser eller åbninger (13, 23, 15, 25) i et eller flere andre inddækningselementer (1, 2, 3).

9. Fremgangsmåde til at inddække en samling, hvor to konstruktioner, der hver gennembyder et tag eller en væg, mødes, hvor mindst en af disse konstruktioner er placeret i et skråt tag, hvor en første taggennembrydende konstruktion (10) er placeret over en anden konstruktion (20, 200) set i tagets hældningsretning, hvilken fremgangsmåde omfatter

at placere et første sideinddækningselement (1) langs en udvendig sideoverflade af den første taggennembrydende konstruktion,

at placere et andet sideinddækningselement (2) langs en udvendig sideoverflade af

den anden konstruktion, og

at placere et rendeinddækningselement (5) mellem en nedre udvendig overflade af den første taggennembrydende konstruktion og en øvre udvendig overflade af den anden konstruktion,

5 k e n d e t e g n e t ved, at den yderligere omfatter

at forbinde rendeinddækningselementet (5) med i det mindste det andet sideinddækningselement (2) ved anvendelse af et tredje sideinddækningselement (3), der har et i hovedsagen U-formet tværsnit, hvor et første ben (34) af U'et placeres i indgreb med en udvendig sideoverflade af den anden konstruktion, et andet ben (35) placeres i hovedsagen parallelt med det første ben og bunden af U'et placeres i hovedsagen parallelt med tagets plan, hvor en længdeakse (L) af det tredje sideinddækningselement er i hovedsagen vinkelret på U'ets plan, og hvor det tredje sideinddækningselement yderligere omfatter et modtageafsnit (31), et løfteafsnit (32) og et dræningsafsnit (33), hvor modtageafsnittet placeres i niveau med rendeinddækningselementet for at modtage vand derfra, dræningsafsnittet forbindes til det andet sideinddækningselement i en overlappende samling, og løfteafsnittet er placeret mellem modtage- og dræningsafsnittene i en vinkel i forhold til i det mindste dræningsafsnittet, således at dræningsafsnittet i den monterede tilstand er placeret under modtageafsnittet set i tagets hældningsretning og højere end modtageafsnittet set vinkleret på tagets plan, og

20 hvor det tredje sideinddækningselement (3) placeres med et første afsnit (341) forbundet til rendeinddækningselementet (5) og et andet afsnit (342) i indgreb med den udvendige sideoverflade af den anden konstruktion (20,200), hvor det første afsnit er forsat i forhold til det andet afsnit i en retning væk fra det andet ben (35), således at det er beliggende mellem den første og anden konstruktion.

25 10. Fremgangsmåde ifølge krav 9 til at inddække taggennembrydende konstruktioner placeret i et skråt tag med en første taggennembrydende konstruktion (10) over en anden taggennembrydende konstruktion (20) set i tagets hældningsretning, omfattende

at placere et første sideinddækningselement (1) langs en udvendig sideoverflade af den første taggennembrydende konstruktion,

30 at placere et andet sideinddækningselement (2) langs en udvendig sideoverflade af den anden taggennembrydende konstruktion, og

at placere et rendeinddækningselement (5) mellem en nedre udvendig overflade af den første taggennembrydende konstruktion og en øvre udvendig overflade af den anden taggennembrydende konstruktion,

35 k e n d e t e g n e t ved, at det første ben (34) af det tredje sideinddækningselement (3) placeres i indgreb med en udvendig sideoverflade af den anden taggennembrydende konstruktion (20).

11. Fremgangsmåde ifølge krav 10, hvor en ydre ende af rendeinddækningselementet (5) placeres i en reces (38) i det første ben (34) af det tredje sideinddækningselement (3) og hvor en forbindelsesflange (51) på det tredje sideinddækningselement og/eller på

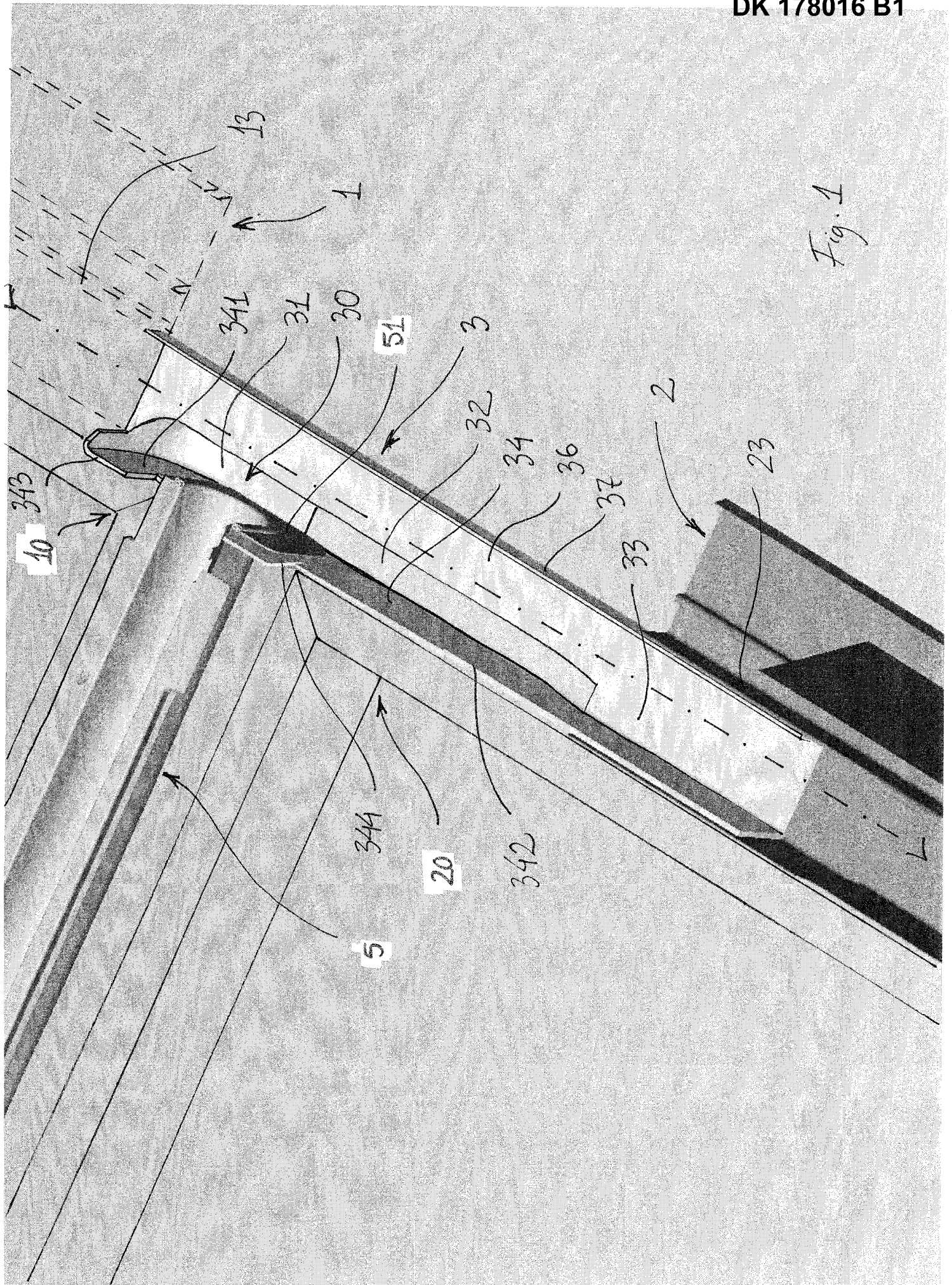
40

rendeinddækningselementet bringes til at skabe en overlappende samling med henholdsvis rendeinddækningselementet og/eller det tredje sideinddækningselement.

12. Fremgangsmåde ifølge et hvilket som helst af kravene 10-11, hvor en sideflange (37) af det tredje sideinddækningselement (3), der er tilvejebragt på en sidedel (36), som strækker sig fra det andet ben (35) væk fra det første ben (34) i hovedsagen i plan med dræningsafsnittet (33) og rager ud fra sidedelen i hovedsagen væk fra modtageafsnittets (31) plan og strækker sig i hovedsagen parallelt med det tredje sideinddækningselements længdeakse (L), anvendes til at positionere sideinddækningselementer (1, 2, 3) i forhold til hinanden og/eller at forbinde sideinddækningselementer.

13. Fremgangsmåde ifølge et hvilket som helst af kravene 10-12, yderligere omfattende trinnet at placere et fjerde sideinddækningselement (4) med den ene ende i indgreb med det første sideinddækningselement (1), en anden ende i kontakt med det andet sideinddækningselement (2), og et midterafsnit spændende i det mindste delvist over det tredje sideinddækningselement (3).

14. Fremgangsmåde ifølge krav 13, hvor det fjerde sideinddækningselement (4) positioneres i forhold til og/eller forbindes til et eller flere andre inddækningselementer (1, 2, 3) ved at en eller flere recesser, riller, slidser, flanger eller udragende dele (43, 45) placeres i indgreb med tilsvarende flanger, recesser, riller, slidser eller åbninger (13, 23, 15, 25) i et eller flere andre inddækningselementer.



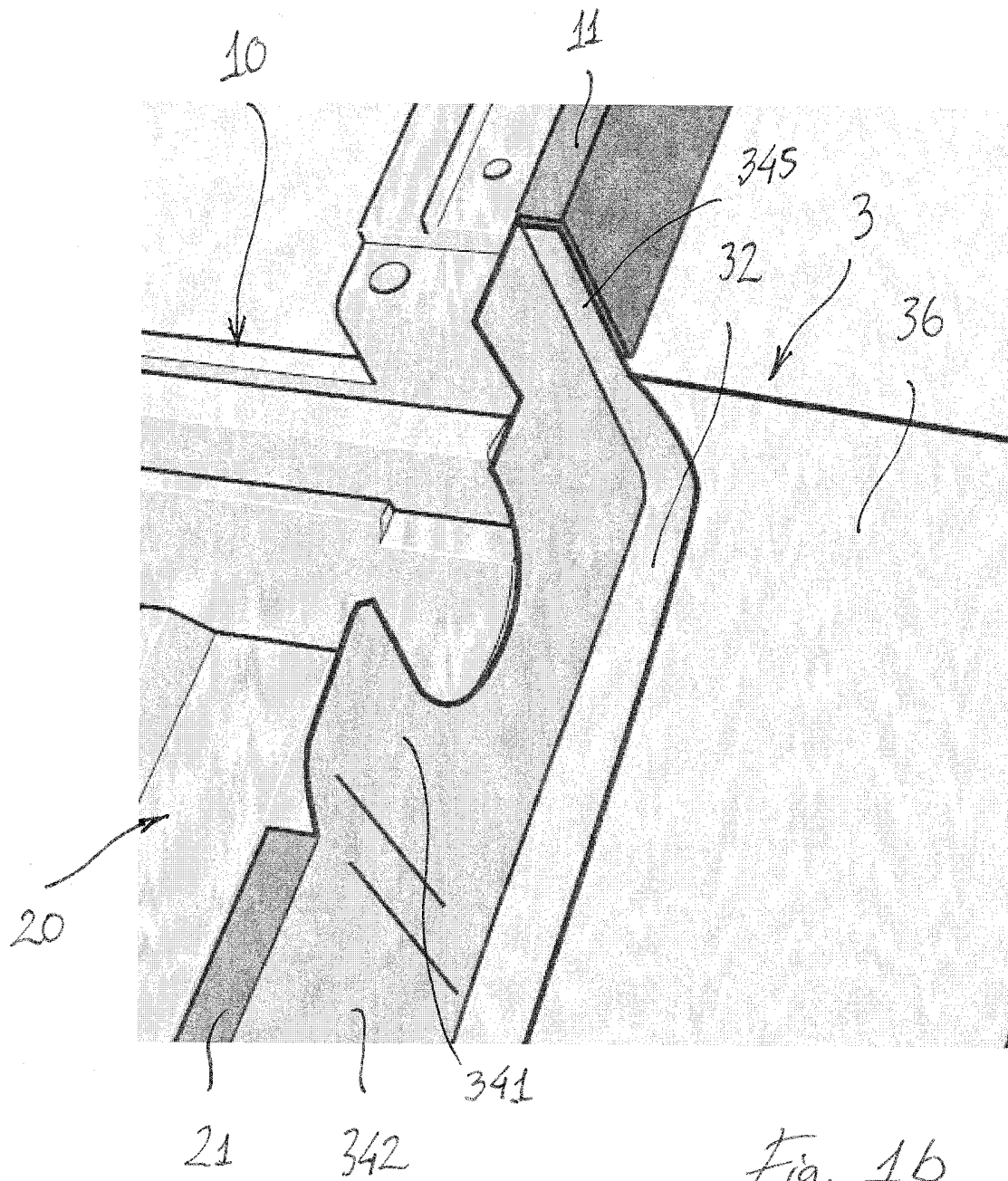
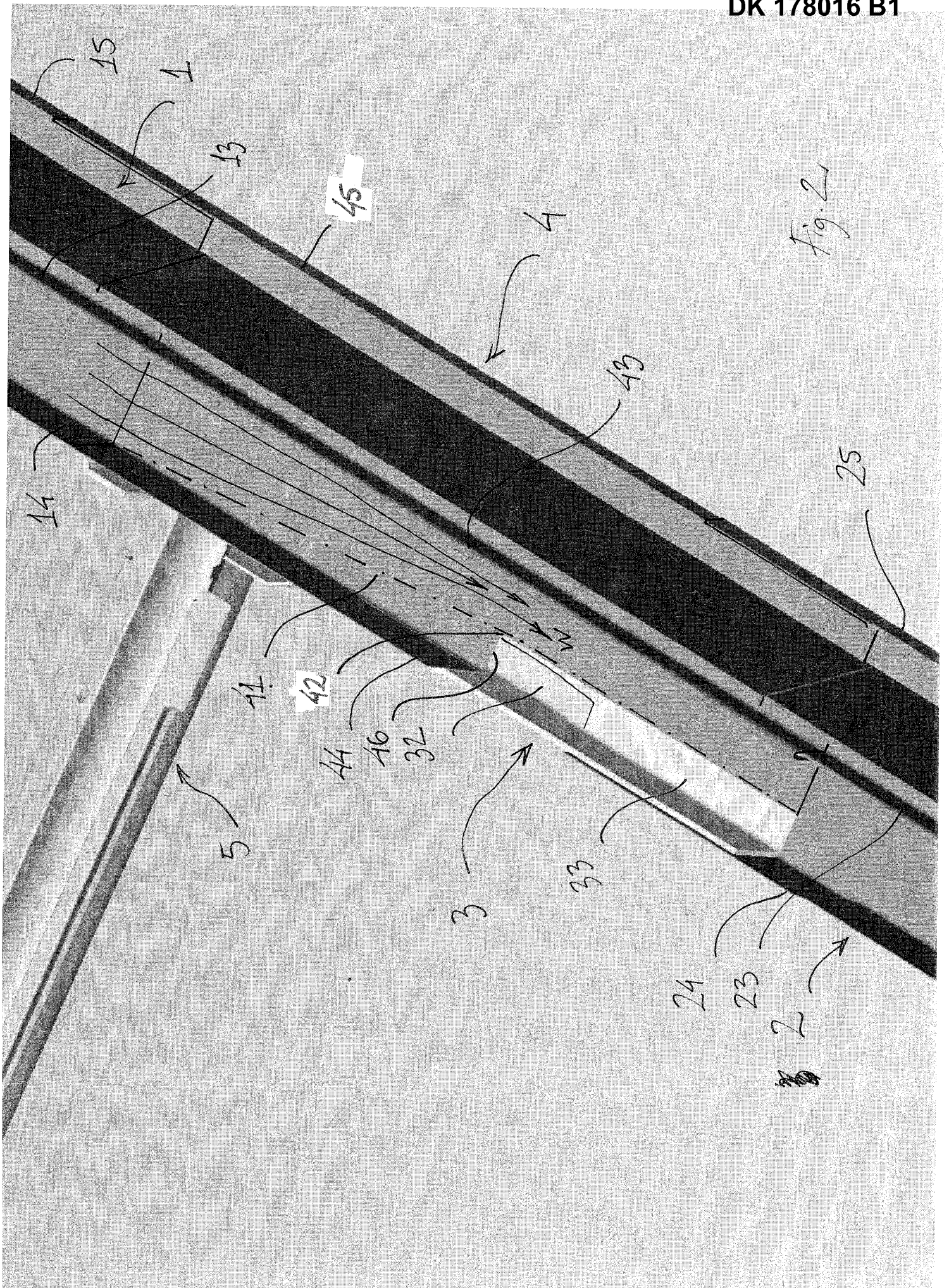
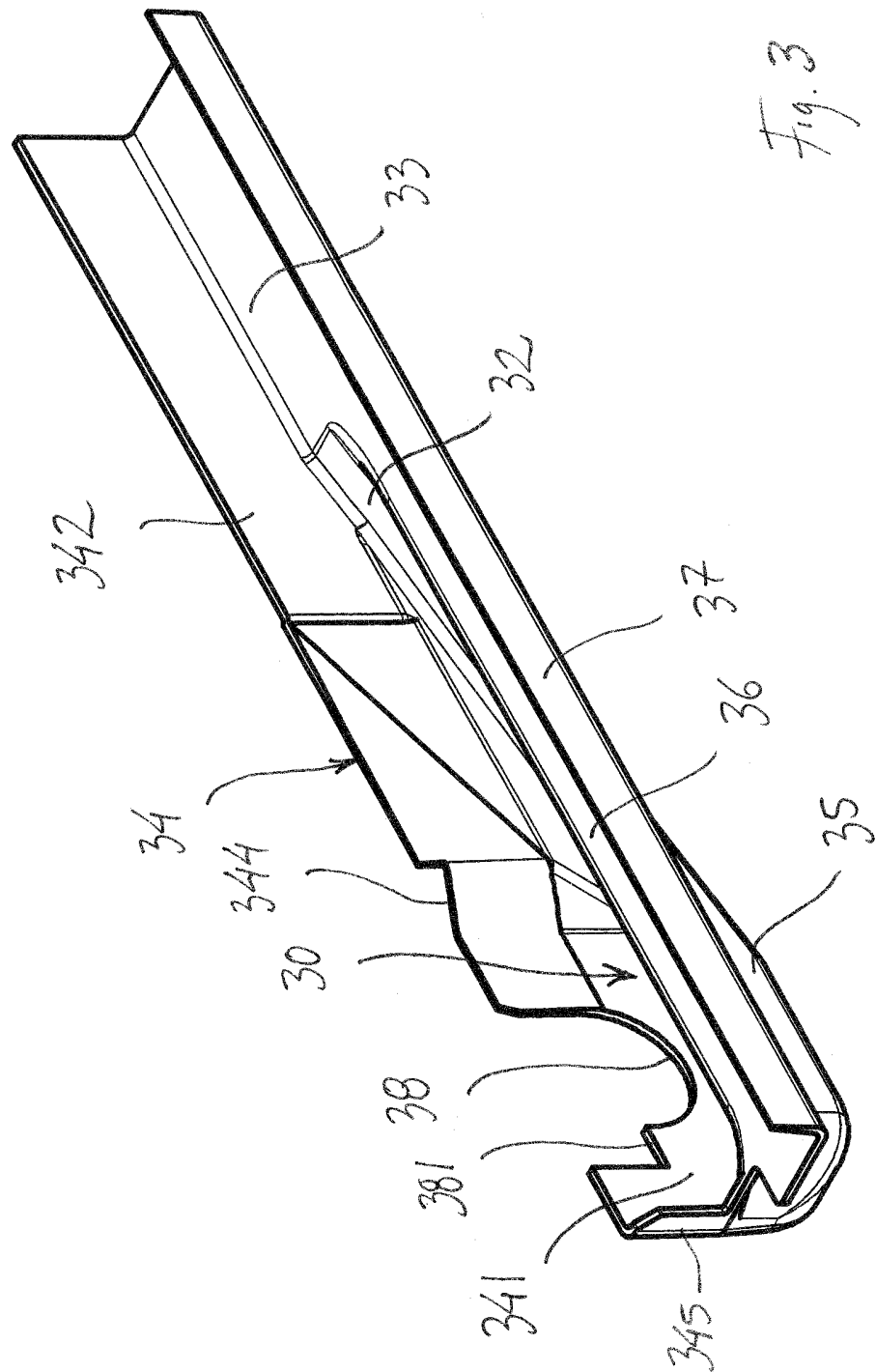


Fig. 1b





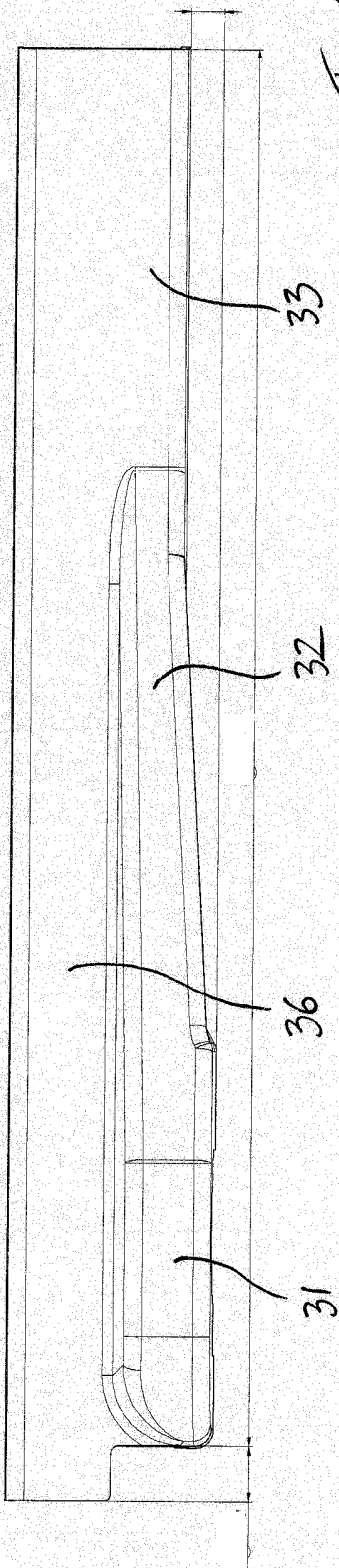


Fig. 4

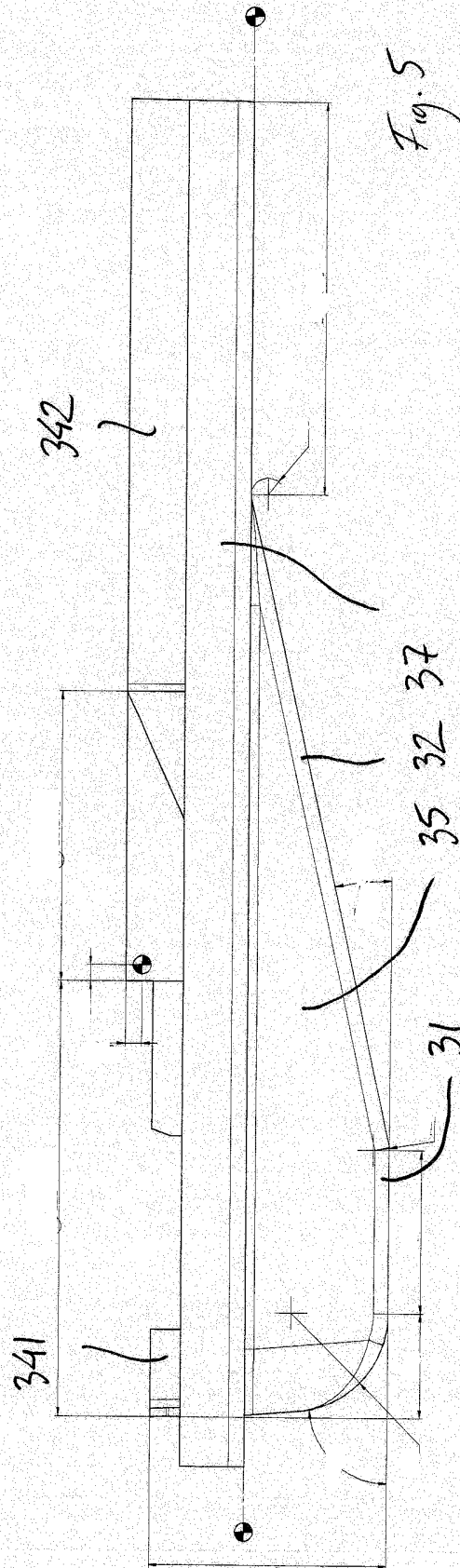


Fig. 5

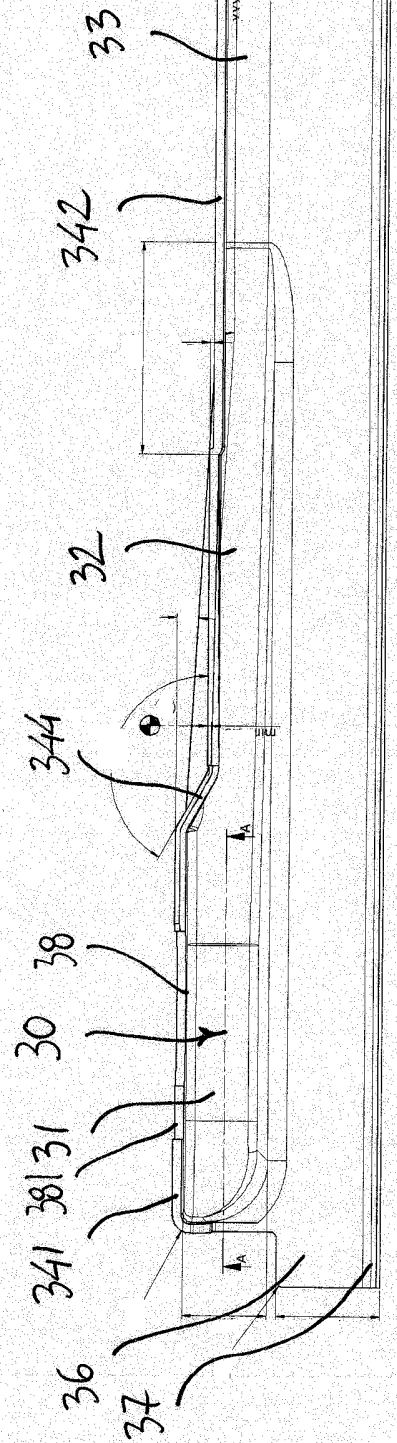


Fig. 6

Fig. 7

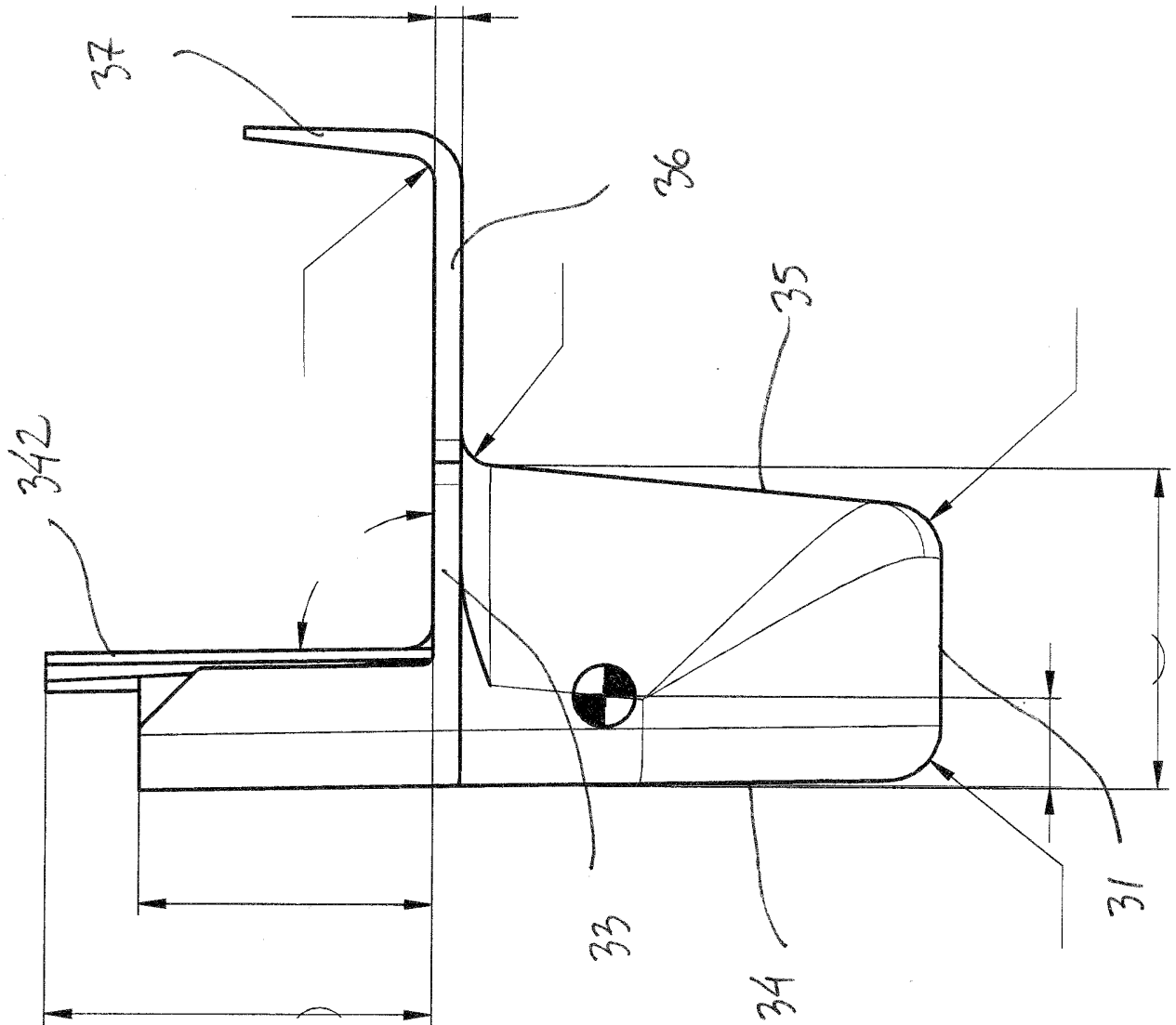
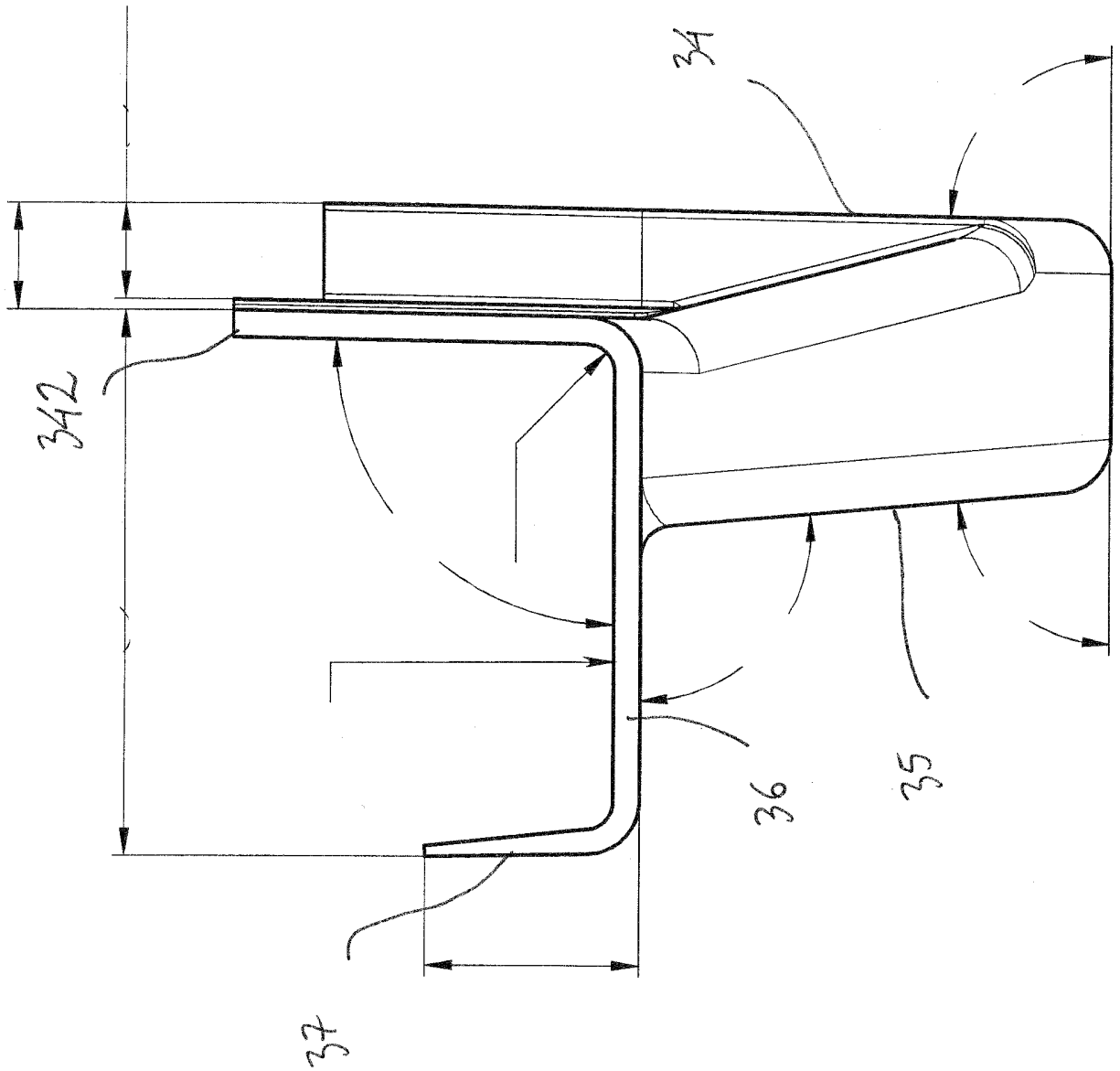
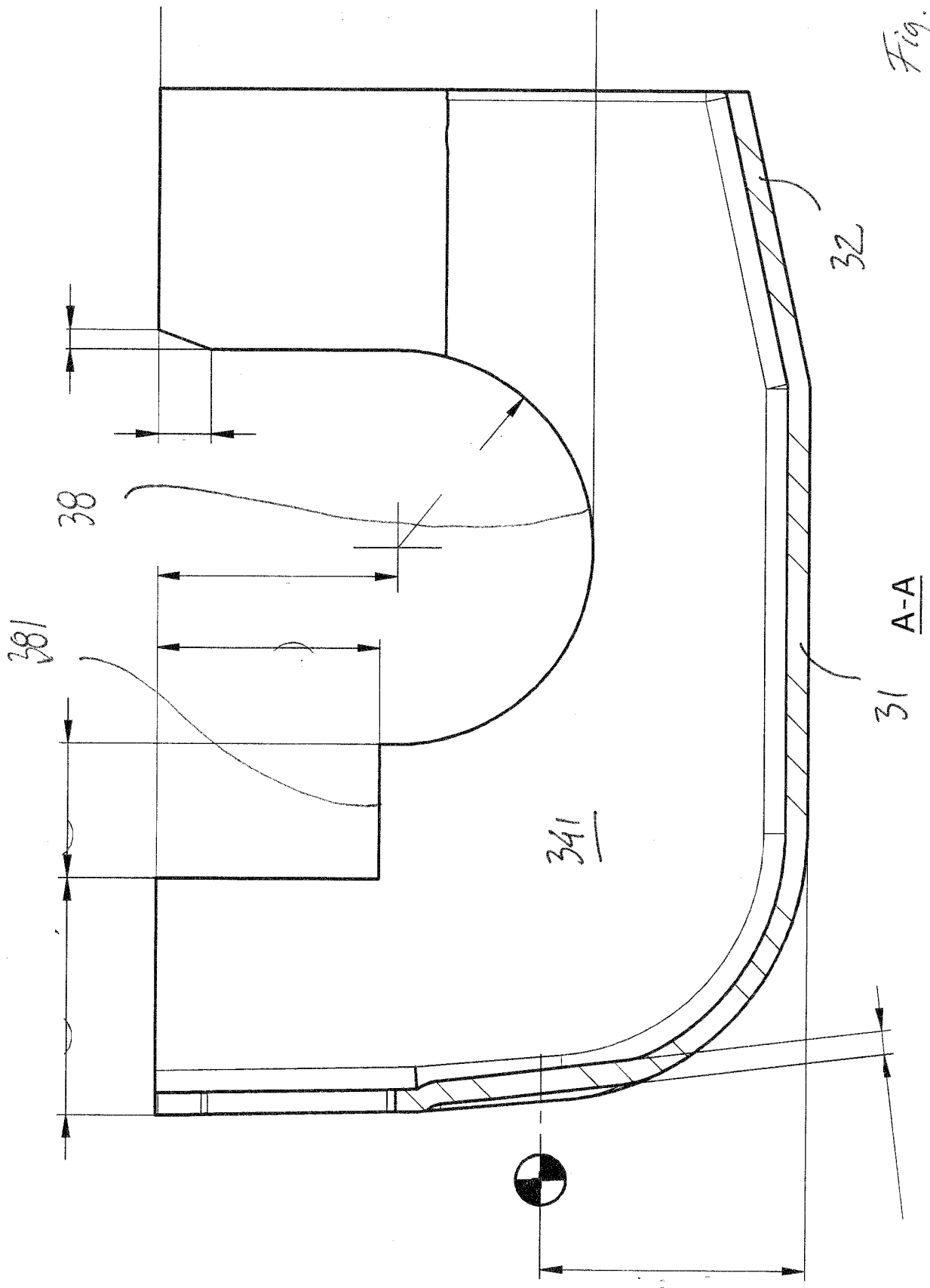


Fig. 8





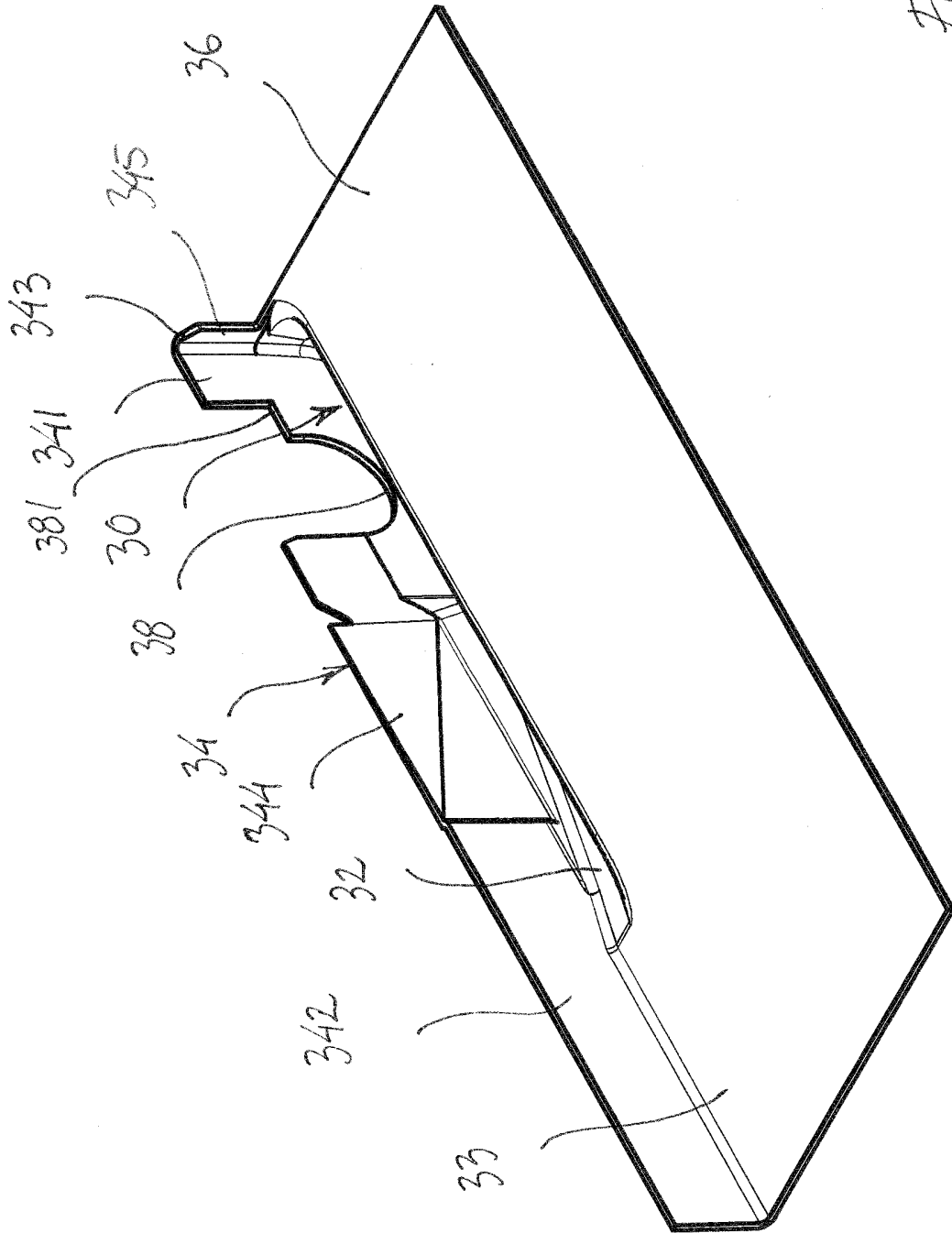


Fig. 10

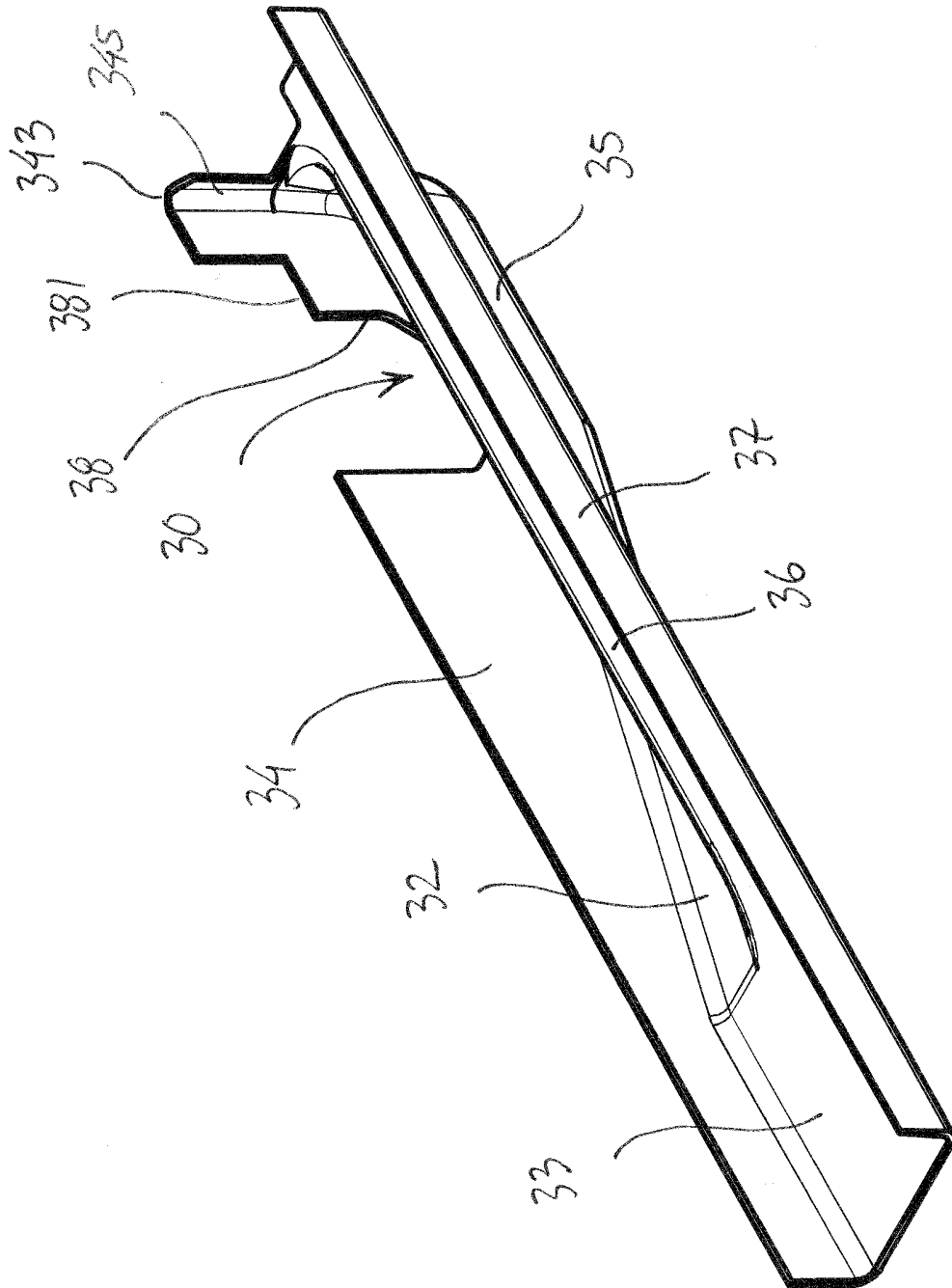


Fig. 11

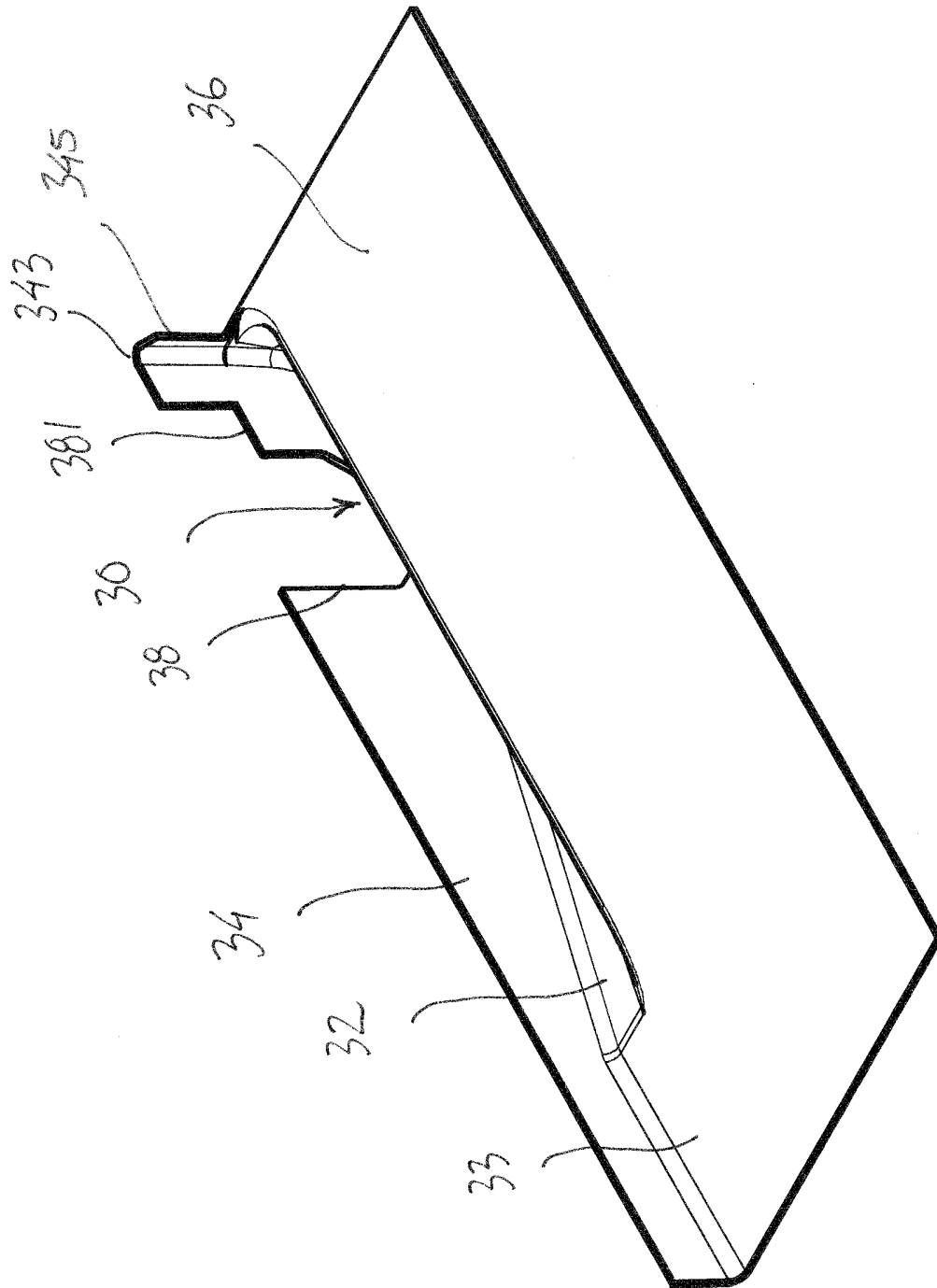


Fig. 12

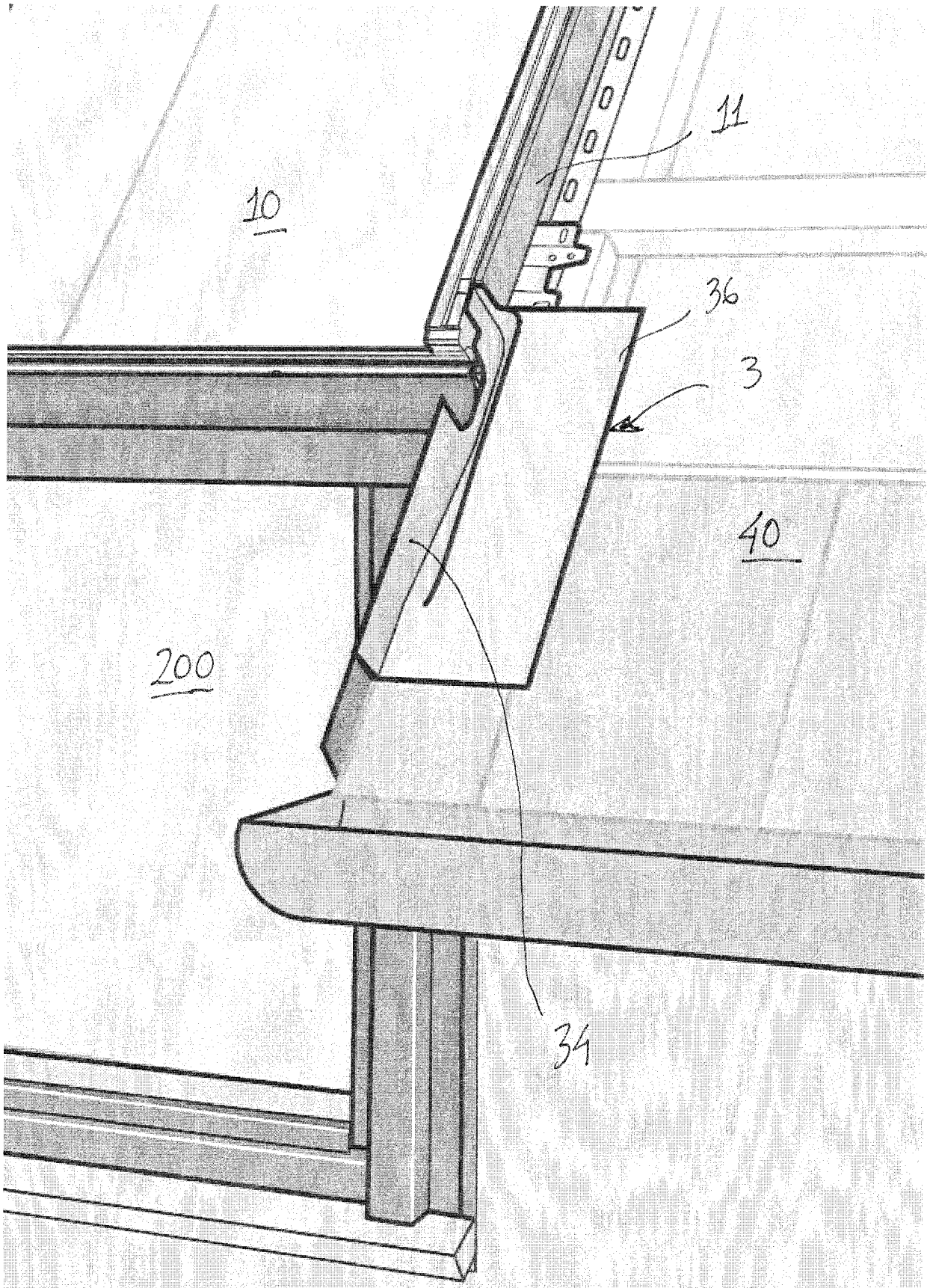


Fig. 13