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(54) **A casing for a domestic appliance, in particular a domestic cooking oven**

Gehäuse für ein Haushaltsgerät, insbesondere einen Haushaltsherd

Boîtier pour appareil domestique, en particulier un four de cuisson domestique

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## Description

**[0001]** The present invention relates to a casing for a domestic appliance, in particular a domestic cooking oven. Further, the present invention relates to a method for assembling a casing for a domestic appliance, in particular a domestic cooking oven.

**[0002]** A casing for a domestic appliance, in particular for a domestic cooking oven, usually comprises walls made from sheet metal. For example, the casing or a part of the casing can be folded from sheet metal provided as a single-piece part.

**[0003]** Further, rectangular metal sheets may be provided for the side walls, the rear wall, the bottom part and the top part of the casing. However, it is laborious to put together said metal sheets exactly.

**[0004]** From GB690957A a cooking oven is known that comprises a side wall formed from sheet metal plate having a lower edge provided with an inwardly directed flange that can be located in a retention ridge formed in a lower plate forming the base of the oven.

**[0005]** It is an object of the present invention to provide a casing for a domestic appliance and a method for assembling said casing, wherein the casing can be efficiently assembled.

**[0006]** The object of the present invention is achieved by the casing according to claim 1.

**[0007]** The casing according to claim 1 is suitable for and meant for a domestic appliance, in particular a domestic cooking oven, and comprises at least two parts (or: walls), in particular a bottom part, two side walls, a rear part and a top part, whereof at least two adjacent parts of the casing are formed from sheet metal or as metal sheets and are connected with each other in a common edge region. A first part of the at least two adjacent parts has a, preferably mainly planar or flat, main section and, at an end region thereof, an end flange which is bent or folded about a bending edge with regard to the main section and that the first part has, in its main section, one or more embossing(s) each having a stop surface facing the end flange. A second part of the at least two adjacent parts has a, preferably mainly planar or flat, main section and, at an end region thereof, an end flange which is bent or folded about a bending edge with regard to the main section. At least one reinforcing embossing is arranged between the end flange and the main section of the second part. The distance between the stop surface of each embossing and the inner face of the end flange of the first part is adapted to the width of the end flange of the second part measured from the inner face of the main section so that they differ mainly only by the thickness of the sheet metal of the second part in the main section or so that the end flange of the second part fits right into the intermediate space between the end flange of the first part and the stop surface of the embossing of the first part and/or so that the end flange of the second part is held firmly or shape-fittingly between the end flange of the first part and the embossing. Furthermore, the end

flange of the first part lies against the outer face of the main section of the second part and the end flange of the second part rests on the main section of the first part and the two bending edges of the first part and the second part are adjacent to each other and run parallel to each other.

**[0008]** The one or more embossings of the first part are formed and arranged in such a way that the end flange of the second part is clamped between the embossings on the one hand and the end flange of the first part on the other hand.

**[0009]** In other words, according to the present invention at least two adjacent parts of the casing comprise foldbacks extending along the common edges, at least one part comprises at least one embossing arranged at a predetermined distance from its foldback, wherein said predetermined distance corresponds with the width of the foldback of the adjacent part, so that the foldback of the adjacent part is clamped between the foldback and embossing of said one part.

**[0010]** The core of the present invention is the interaction of the adjacent flanges or foldbacks and the at least one embossing of the adjacent parts. The adjacent flanges or foldbacks and the corresponding main sections and the at least one embossing allow a stable and exact prepositioning of the adjacent parts before said adjacent parts are finally fixed by suitable fixing elements or means.

**[0011]** According to a preferred embodiment of the present invention the foldback and a main section of the corresponding part form a right angle. The foldback is in the same plane as the adjacent part.

**[0012]** Preferably, at least one reinforcing embossing is arranged between the foldback and the main section of the corresponding part. This contributes to a stable arrangement of the foldback at the part.

**[0013]** Further, at least one main section of the parts includes at least one longitudinal embossing. The longitudinal embossing increases the stiffness of the part.

**[0014]** For example, the bottom part comprises two lateral foldbacks extending in the same plane as the main sections of the side walls.

**[0015]** In a similar way, the side walls comprise two foldbacks at their lower edge extending in the same plane as the main section of the bottom part. Thereby the bottom part may comprise on at least one side at least one embossing corresponding with one of the lateral foldbacks.

**[0016]** Additionally or alternatively, the side walls comprise two foldbacks at their upper edge extending in the same plane as the main section of the top part.

**[0017]** Similarly, the top part may comprise two lateral foldbacks extending in the same plane as the main sections of the side walls. Thereby the bottom part comprises on at least one side at least one embossing corresponding with one of the lateral foldbacks,

**[0018]** According to a further aspect of the present invention at least one of the two adjacent parts of the casing

comprises a plug-in tab and at least one other of the two adjacent parts comprises an opening, wherein the plug-in tab is inserted in the opening in order to pre-fix the two adjacent parts. This is an additional or alternative way for pre-fixing the two adjacent parts.

**[0019]** In particular, the plug-in tab and the corresponding opening are parts of foldbacks of the two adjacent parts.

**[0020]** The object of the present invention is further achieved by the method according to claim 7.

**[0021]** The method for assembling a casing for a domestic appliance, in particular a domestic cooking oven, comprises the following steps:

- a) providing at least two parts, in particular a bottom part, two side walls, a rear part and a top part,
- b) composing at least two adjacent parts of the casing which are formed from sheet metal or as metal sheets in a common edge region,
- c) wherein a first part of the at least two adjacent parts has a, preferably mainly planar or flat, main section and, at an end region thereof, an end flange which is bent or folded about a bending edge with regard to the main section and wherein the first part has, in its main section, one or more embossing(s) each having a stop surface facing the end flange,
- d) wherein a second part of the at least two adjacent parts has a, preferably mainly planar or flat, main section and, at an end region thereof, an end flange which is bent or folded about a bending edge with regard to the main section,
- dd) wherein at least one reinforcing embossing is arranged between said end flange and said main section of said second part,
- e) wherein the distance between the stop surface of each embossing and the inner face of the end flange of the first part is adapted to the width of the end flange of the second part measured from the inner face of the main section so that they differ mainly only by the thickness of the sheet metal of the second part in the main section or so that the end flange of the second part during composing of the two parts is fitted right into the intermediate space between the end flange of the first part and the stop surface of the embossing of the first part and/or so that the end flange of the second part after composing of the two parts is held firmly or shape-fittingly between the end flange of the first part and the embossing,
- f) and wherein the end flange of the first part is brought to lie against the outer face of the main section of the second part and the end flange of the second part is brought to rest on the main section of the first part and
- g) wherein the two bending edges of the first part and the second part are brought in an adjacent position to each other in which they run parallel to each other,
- h) wherein the one or more embossing(s) of the first

part are formed and arranged in such a way that the end flange of the second part is clamped between said embossing(s) on the one hand and the end flange of the first part on the other hand.

**[0022]** In other words, according to the present invention at least two adjacent parts of the casing comprise foldbacks extending along the common edges, at least one part comprises at least one embossing arranged at a predetermined distance from its foldback, wherein said predetermined distance corresponds with the width of the foldback of the adjacent part, so that the foldback of the adjacent part is pre-fixed by clamping between the foldback and embossing of said one part.

**[0023]** The main idea of the method according to the present invention is the interaction of the adjacent foldbacks and the at least one embossing of the adjacent parts. The adjacent foldbacks and the at least one embossing allow a stable and exact pre-fixing of the adjacent parts before said adjacent parts will be finally fixed by suitable fixing elements.

**[0024]** In particular, the method may be provided for the casing as described above.

**[0025]** Novel and inventive features of the present invention are set forth in the appended claims.

**[0026]** The present invention will be described in further detail with reference to the accompanied drawings, in which

FIG 1 illustrates a perspective view of parts of a casing for an oven cavity of a cooking oven according to a preferred embodiment of the present invention,

FIG 2 illustrates a detailed perspective view of the part of the casing for the oven cavity of the cooking oven according to the preferred embodiment of the present invention,

FIG 3 illustrates a perspective view of parts of the casing for the oven cavity of the cooking oven according to the preferred embodiment of the present invention, and

FIG 4 illustrates a schematic sectional drawing of two parts connected according to the invention.

**[0027]** FIG 1 illustrates a perspective view of parts of a casing for an oven cavity of a cooking oven according to a preferred embodiment of the present invention. FIG 1 illustrates the perspective view from an upper lateral position.

**[0028]** FIG 1 shows a left side wall 20, a rear wall 30 and a bottom part 40 of the casing. The left side wall 20, the rear wall 30 and the bottom part 40 are formed as substantially rectangular metal sheets. A right side wall 20 is additionally provided for the casing, but not shown in FIG 1.

**[0029]** The bottom part 40 comprises a lateral foldback (or: flange) 41 at the left hand side of the bottom part 40 and a further lateral foldback (or: flange) 41 at the right hand side of the bottom part 40, Said lateral foldbacks 41 are bent upwards. The main section of the bottom part 40 and the lateral foldbacks 41 form a right angle in each case. Thus, the lateral foldbacks 41 extend into the same direction as the main sections of the right side walls 20. Lower portions of the outer surfaces of the side walls 20 lie against the corresponding inner surfaces of the lateral foldbacks 41 of the bottom part 40.

**[0030]** The left side wall 20 comprises a lateral foldback 41B at its bottom side. In a similar way, the right side wall 20 comprises a lateral foldback 41B at its bottom side. The lateral foldbacks 41B of the side walls 20 are bent inwardly. Thus, the lateral foldbacks 41B of the side walls 20 extend into the same directions as the main section of the bottom part 40. Outer lateral portions of the upper surface of the bottom part 40 lie against the corresponding lower surfaces of the lateral foldbacks 41B of the side walls 20.

**[0031]** The bottom part 40 comprises embossings 48A in its lateral portions. The embossings 48A are formed and arranged in such a way that the foldbacks 41B of the side walls 20 are clamped between said embossings 48A on the one hand and the foldbacks 41 of the bottom part 40 on the other hand. In this example, the bottom part 40 comprises two embossings 48A on the left hand side and two embossings 48A on the right hand side.

**[0032]** The foldbacks 41b, 41 of the side walls 20 and the bottom part 40 as well as the embossings 48A allow that the side wall 20 and the bottom part 40 can be stably stuck together during assembling the casing, before the side wall 20 will be finally fixed at the bottom part 40. At last, the side wall 20 and the bottom part 40 will be interconnected by suitable fixing element, e.g. by screws. Said fixings elements may be attached at the foldbacks 41 of the side walls 20 and/or the bottom part 40.

**[0033]** The bottom part 40 comprises basic embossing 45 in the left and right portions of its large-area section. The two basic embossing 45 are elongated and extend parallel to the lower edge of the corresponding side walls 20 in each case.

**[0034]** In its central lower portion the side wall 20 comprises an opening. In this example, said opening is oval. The height of the opening is smaller than its width. The opening is provided for receiving an embossing in a central tap 43 of the foldback 41 of the bottom part 40. The embossing in the central tap 43 is marginally smaller than the corresponding opening, so that the embossing and the opening allow an exact positioning of the side wall 20 in relation to the bottom part 40 during assembling the casing. But this connection with the embossing can also not be present and the tap 43 simply cover the opening without engaging into it.

**[0035]** FIG 2 illustrates a detailed perspective view of the parts of the casing for the oven cavity of the cooking oven according to the preferred embodiment of the

present invention. FIG 2 shows the lower rear corner on the left hand side of the casing from the interior.

**[0036]** Between the side wall 20 and the lateral foldback 41B of said side wall 20 reinforcing embossings 48 are provided. In this example three reinforcing embossings 48 are arranged on the lateral foldback 41B of the side wall 20 as shown in FIG 1. FIG 2 shows only the rearmost reinforcing embossing 48. The reinforcing embossings 48 guarantee the right angle between the side wall 20 and the lateral foldback 41B of said side wall 20.

**[0037]** Further, the bottom part 40 comprises a rear foldback 42 on its rear side. The rear foldback 42 extends vertically. Thus, the rear foldback 42 and the main section of the bottom part 40 form a right angle. The reinforcing embossings 48 are also provided between the rear foldback 42 and the main section of the bottom part 40.

**[0038]** In the corner of the casing, the bottom part 40 comprises a plug-in tab 46. The plug-in tab 46 extends from the lateral end portion of the rear foldback 42 into the direction of the front side of the casing. The plug-in tab 46 is a small sheet extending vertically. Further, the bottom part 40 comprises a fixing tap 47 arranged below and outwardly of the plug-in tab 46. The fixing tap 47 extends parallel to the plug-in tab 46.

**[0039]** The plug-in tab 46 penetrates through an opening 29C in a vertical foldback 29 of the side wall 20. The vertical fold-back 29 extend along the rear edge of the side wall 20. The opening 29C is arranged in a lower portion of the vertical foldback 29. The vertical foldback 29 and the main section of the side wall 20 form a right angle.

**[0040]** During assembling the casing the plug-in tab 46 is inserted into the opening 29C, so that the side wall 20 is pre-assembled at the bottom part 40, before the side wall 20 will be finally fixed at the bottom part 40. The fixing tap 47 supports the side wall 20. The final fixation of the side wall 20 at the bottom part 40 is performed by suitable fixing elements, e.g. by screws.

**[0041]** FIG 3 illustrates a perspective view of parts of the casing for the oven cavity of the cooking oven according to the preferred embodiment of the present invention. FIG 3 illustrates the perspective view from a lower front position.

**[0042]** FIG 3 shows the left side wall 20, the right side wall 20 and a component carrier 2. The component carrier 2 forms an intermediate wall in the upper portion of the casing. The component carrier 2 extends horizontally.

**[0043]** In this example, the component carrier 2 includes a duct 4 for a water line, a central opening 5 for a fan, an opening 6 for a valve, an earth connection 9, a bevel 10 and longitudinal embossings 11, 12 and 13. The bevel 10 is provided for conducting air. The longitudinal embossings 11, 12 and 13 are provided for acting against lateral forces. The embossings 12 and 13 can also not be present.

**[0044]** The side wall 20 comprises an upper foldback 27. The upper foldback 27 is arranged in a right angle in relation to the main section of the side wall 20. Three

reinforcing embossings 2B are arranged between the main section of the side wall 20 and the upper foldback 27. The reinforcing embossings 28 guarantee the right angle between the upper foldback 27 and the main section of the side wall 20.

**[0045]** The upper foldback 27 of the side wall 20 extends in the rear and central portions of the casing. In the front portion of the casing two lateral foldbacks 15 are arranged at both sides of the component carrier 2. The lateral foldbacks 15 are arranged in a right angle in relation to the main section of the component carrier 2. The lateral foldbacks 15 are fixed at the side walls 20 by a screw 16 in each case.

**[0046]** The component carrier 2 comprises two embossings 15A corresponding to the upper foldbacks 27 of the side walls 20. The upper foldback 27 lies against the corresponding embossing 15A, wherein the side wall 20 is fixed by the lateral foldbacks 15 and the screws 16.

**[0047]** FIG 4 shows in a schematic sectional drawing the connection principle according to the invention.

**[0048]** A first part 50 made of sheet metal has a mainly planar or flat main section 51 and at the end thereof an end flange 52 which is bent or folded upwards about a bending edge 53 preferably in an angle of 90° or perpendicular to the main section 51. Furthermore, the first part has, in its main section one or more embossings 54 having a stop surface 55 facing the end flange 52. The distance between the stop surface 55 of the embossing 54 and the inner face of the end flange 52 is labelled with w1.

**[0049]** A second part 60 also made of sheet metal has also a mainly planar or flat main section 61 and at the end thereof an end flange 62 which is bent or folded upwards about a bending edge 63 preferably in an angle of 90° or perpendicular to the main section 61. The width or height of the end flange 62 measured from the inner face of the main section 61 is labelled with w2.

**[0050]** The distance w1 between the stop surface 55 of the embossing 54 and the inner face of the end flange 52 is adapted to the width w2 of the end flange 62 in such a way that they differ mainly only by the thickness t of the sheet metal of the second part 60 in the main section 61 or that the end flange 62 of the second part 60 fits right into the intermediate space between the end flange 52 of the first part 50 and the stop surface 55 of the embossing 54 of the first part 50 and is held firmly or shape-fittingly between the end flange 52 and the embossing 54. The end flange 52 of the first part 50 lies against the outer face of the main section 61 of the second part 60 whereas the end flange 62 of the second part 60 rests on the main section 51 of the first part 50. The two bending edges 53 and 63 of the two parts 50 and 60 are adjacent to each other and run parallel to each other. By this construction the first part 50 and the second part 60 can be put together and held or positioned in a predefined position with regard to each other and then be fixed to each other by fixing means such as screws, snapping means or bolts or even weldings.

**[0051]** The present invention uses the interaction of

the adjacent foldbacks and the embossing or embossings in one of the adjacent parts. The adjacent foldbacks and the embossings allow a stable and exact pre-fixing of the adjacent parts before said adjacent parts will be finally fixed by suitable fixing elements.

**[0052]** Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to that precise embodiment, and that various other changes and modifications may be affected therein.

**[0053]** All such changes and modifications are intended to be included within the scope of the invention as defined by the appended claims.

#### List of reference numerals

##### [0054]

|     |                                           |
|-----|-------------------------------------------|
| 2   | component carrier                         |
| 4   | duct for a water line                     |
| 5   | central opening for a fan                 |
| 6   | opening for a valve                       |
| 9   | earth correction                          |
| 10  | bevel                                     |
| 11  | longitudinal embossing                    |
| 12  | longitudinal embossing                    |
| 13  | longitudinal embossing                    |
| 15  | lateral foldback of the component carrier |
| 15A | embossing                                 |
| 16  | screw                                     |
| 20  | side wall                                 |
| 27  | upper foldback of the side wall           |
| 28  | reinforcing embossing                     |
| 29  | vertical foldback                         |
| 29C | opening                                   |
| 30  | rear wall                                 |
| 40  | bottom part                               |
| 41  | lateral foldback                          |
| 41B | lateral foldback                          |
| 42  | rear foldback                             |
| 43  | central tap                               |
| 45  | basic embossing                           |
| 46  | plug-in tab                               |
| 47  | fixing tap                                |
| 48  | reinforcing embossing                     |
| 48A | embossing                                 |
| 50  | first part                                |
| 51  | main section                              |
| 52  | flange                                    |
| 53  | bending edge                              |
| 54  | embossing                                 |
| 55  | stop surface                              |
| 60  | second part                               |
| 61  | main section                              |
| 62  | flange                                    |
| 63  | bending edge                              |

## Claims

1. A casing for a domestic appliance, in particular a domestic cooking oven,

a) comprising at least two parts, in particular a bottom part (40), two side walls (20), a rear part (30) and a top part (2),

b) wherein at least two adjacent parts (2, 20, 30, 40, 50, 60) of the casing are formed from sheet metal or as metal sheets and are connected with each other in a common edge region,

c) wherein a first part (50, 40) of the at least two adjacent parts has a, preferably mainly planar or flat, main section (51, 40) and, at an end region thereof, an end flange (52, 41) which is bent or folded about a bending edge (53) with regard to the main section (51) and wherein the first part (50, 40) has, in its main section, one or more embossing(s) (54, 48A) each having a stop surface (55) facing the end flange (52, 41),

d) wherein a second part (60, 20) of the at least two adjacent parts has a, preferably mainly planar or flat, main section (61, 20) and, at an end region thereof, an end flange (62, 41B) which is bent or folded about a bending edge (63) with regard to the main section (61, 20),

dd) wherein at least one reinforcing embossing (48) is arranged between said end flange (62, 41B) and said main section (61, 20) of said second part (60, 20),

e) wherein the distance (w1) between the stop surface (55) of each embossing (54, 48A) and the inner face of the end flange (52, 41) of the first part (50, 40) is adapted to the width (w2) of the end flange (62, 41B) of the second part measured from the inner face of the main section (61, 20) so that they differ mainly only by the thickness (t) of the sheet metal of the second part (60, 20) in the main section (61, 20) or so that the end flange (62, 41B) of the second part (60, 20) fits right into the intermediate space between the end flange (52, 41) of the first part (50, 40) and the stop surface (55) of the embossing (54, 48A) of the first part (50, 40) and/or so that the end flange (62, 41B) of the second part (60, 20) is held firmly or shape-fittingly between the end flange (52, 41) of the first part and the embossing (54, 48A),

f) and wherein the end flange (52, 41) of the first part (50, 40) lies against the outer face of the main section (61, 20) of the second part (60, 20) and the end flange (62, 41B) of the second part (60, 20) rests on the main section (51, 40) of the first part (50, 40) and

g) wherein the two bending edges (53, 63) of

the first part (50, 40) and the second part (60, 20) are adjacent to each other and run parallel to each other,

h) wherein the one or more embossing(s) (54, 48A) of the first part (50, 40) are formed and arranged in such a way that the end flange (62, 41B) of the second part (60, 20) is clamped between said embossing(s) (54, 48A) on the one hand and the end flange (52, 41) of the first part (50, 40) on the other hand.

2. The casing according to claim 1, wherein the flanges or foldbacks (15, 27, 29, 41, 41B, 52, 62) and the main section (51, 61) of the corresponding part (2, 20, 30, 40, 50, 60) form a right angle or are perpendicular to each other.

3. The casing according to claim 1 or 2, wherein at least one main section of the parts (2, 20, 30, 40) includes at least one longitudinal embossing (11, 12, 13, 45).

4. The casing according to any one of the preceding claims, wherein the bottom part (40) comprises two lateral flanges or foldbacks (41) extending in the same plane as or parallel to the main sections of the side walls (20) and/or wherein the side walls (20) comprise two flanges or foldbacks (41B) at their lower edge extending in the same plane as or parallel to the main section of the bottom part (40) and/or wherein the bottom part (40) comprises on at least one side at least one embossing (48A) corresponding with one of the lateral foldbacks (41).

5. The casing according to any one of the preceding claims, wherein the side walls (20) comprise two flanges or foldbacks (27) at their upper edge extending in the same plane as or parallel to the main section of the top part (2) and/or wherein the top part (2) comprises two lateral foldbacks extending in the same plane as or parallel to the main sections of the side walls (20) and/or wherein the top part (2) comprises on at least one side at least one embossing (48A) corresponding with one of the lateral fold-backs (41).

6. A casing according to any one of the preceding claims, wherein at least one of the two adjacent parts (20, 30) comprises a plug-in tab (46) and at least one other of the two adjacent parts (20, 30) comprises an opening (29C), wherein the plug-in tab (46) is inserted in the opening (29C) in order to fix or position or pre-position the two adjacent parts (20, 30), in particular in a corner region, wherein in particular the plugin tab (46) and the corresponding

opening (29C) are parts of flanges or foldbacks (29, 42) of the two adjacent parts (20, 30).

7. A method for assembling a casing for a domestic appliance comprising the following steps:

a) providing at least two parts, in particular a bottom part (40), two side walls (20), a rear part (30) and a top part (2),

b) composing at least two adjacent parts (2, 20, 30, 40, 50, 60) of the casing which are formed from sheet metal or as metal sheets in a common edge region,

c) wherein a first part (50, 40) of the at least two adjacent parts has a, preferably mainly planar or flat, main section (51, 40) and, at an end region thereof, an end flange (52, 41) which is bent or folded about a bending edge (53) with regard to the main section (51) and wherein the first part (50, 40) has, in its main section, one or more embossing(s) (54, 48A) each having a stop surface (55) facing the end flange (52, 41),

d) wherein a second part (60, 20) of the at least two adjacent parts has a, preferably mainly planar or flat, main section (61, 20) and, at an end region thereof, an end flange (62, 41B) which is bent or folded about a bending edge (63) with regard to the main section (61, 20),

dd) wherein at least one reinforcing embossing (48) is arranged between said end flange (62, 41B) and said main section (61, 20) of said second part (60, 20),

e) wherein the distance (w1) between the stop surface (55) of each embossing (54, 48A) and the inner face of the end flange (52, 41) of the first part (50, 40) is adapted to the width (w2) of the end flange (62, 41B) of the second part measured from the inner face of the main section (61, 20) so that they differ mainly only by the thickness (t) of the sheet metal of the second part (60, 20) in the main section (61, 20) or so that the end flange (62, 41B) of the second part (60, 20) during composing of the two parts (50, 40; 60, 20) is fitted right into the intermediate space between the end flange (52, 41) of the first part (50, 40) and the stop surface (55) of the embossing (54, 48A) of the first part (50, 40) and/or so that the end flange (62, 41B) of the second part (60, 20) after composing of the two parts (50, 40; 60, 20) is held firmly or shape-fittingly between the end flange (52, 41) of the first part and the embossing (54, 48A),

f) and wherein the end flange (52, 41) of the first part (50, 40) is brought to lie against the outer face of the main section (61, 20) of the second part (60, 20) and the end flange (62, 41B) of the

second part (60, 20) is brought to rest on the main section (51, 40) of the first part (50, 40) and g) wherein the two bending edges (53, 63) of the first part (50, 40) and the second part (60, 20) are brought in an adjacent position to each other in which they run parallel to each other, h) wherein the one or more embossing (s) (54, 48A) of the first part (50, 40) are formed and arranged in such a way that the end flange (62, 41B) of the second part (60, 20) is clamped between said embossing(s) (54, 48A) on the one hand and the end flange (52, 41) of the first part (50, 40) on the other hand.

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8. The method according to claim 7, wherein after composing the two parts they are fixed to each other by fixing means such as screws, snapping means or bolts or even weldings.

## Patentansprüche

1. Gehäuse für ein Haushaltsgerät, insbesondere einen Haushaltsherd,

a) umfassend mindestens zwei Teile, insbesondere ein Unterteil (40), zwei Seitenwände (20), ein Hinterteil (30) und ein Oberteil (2),

b) wobei mindestens zwei benachbarte Teile (2, 20, 30, 40, 50, 60) des Gehäuses aus Blech oder als Metallbleche ausgebildet sind und in einem gemeinsamen Randbereich miteinander verbunden sind,

c) wobei ein erstes Teil (50, 40) der mindestens zwei benachbarten Teile einen vorzugsweise hauptsächlich ebenen oder flachen Hauptabschnitt (51, 40) und, an einem Endbereich davon, einen Endflansch (52, 41) aufweist, der um eine Biegekante (53) in Bezug auf den Hauptabschnitt (51) gebogen und geklappt wird, und wobei das erste Teil (50, 40) in seinem Hauptabschnitt eine oder mehrere Prägungen (54, 48A) aufweist, die jeweils eine Anschlagoberfläche (55) aufweisen, die zum Endflansch (52, 41) weist,

d) wobei ein zweites Teil (60, 20) der mindestens zwei benachbarten Teile einen vorzugsweise hauptsächlich ebenen oder flachen Hauptabschnitt (61, 20) und, an einem Endbereich davon, einen Endflansch (62, 41B) aufweist, der um eine Biegekante (63) in Bezug auf den Hauptabschnitt (61, 20) gebogen und geklappt ist,

dd) wobei mindestens eine Verstärkungsprägung (48) zwischen dem Endflansch (62, 41B) und dem Hauptabschnitt (61, 20) des zweiten Teils (60, 20) angeordnet ist,

- e) wobei der Abstand (w1) zwischen der Anschlagoberfläche (55) jeder Prägung (54, 48A) und der Innenfläche des Endflansches (52, 41) des ersten Teils (50, 40) an die Breite (w2) des Endflansches (62, 41B) des zweiten Teils angepasst ist, die von der Innenfläche des Hauptabschnitts (61, 20) gemessen wird, sodass sie sich hauptsächlich nur in der Dicke (t) des Blechs des zweiten Teils (60, 20) im Hauptabschnitt (61, 20) unterscheiden, oder so, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) genau in den Zwischenraum zwischen dem Endflansch (52, 41) des ersten Teils (50, 40) und der Anschlagoberfläche (55) der Prägung (54, 48A) des ersten Teils (50, 40) passt und/oder so, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) fest oder formschlüssig zwischen dem Endflansch (52, 41) des ersten Teils und der Prägung (54, 48A) gehalten wird,
- f) und wobei der Endflansch (52, 41) des ersten Teils (50, 40) an der Außenfläche des Hauptabschnitts (61, 20) des zweiten Teils (60, 20) anliegt und der Endflansch (62, 41B) des zweiten Teils (60, 20) auf dem Hauptabschnitt (51, 40) des ersten Teils (50, 40) aufliegt,
- g) wobei die zwei Biegekanten (53, 63) des ersten Teils (50, 40) und das zweite Teil (60, 20) zueinander benachbart sind und parallel zueinander verlaufen,
- h) wobei die eine oder die mehreren Prägungen (54, 48A) des ersten Teils (50, 40) derart ausgebildet und angeordnet sind, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) zwischen der bzw. den Prägungen (54, 48A) einerseits und dem Endflansch (52, 41) des ersten Teils (50, 40) andererseits eingeklemmt ist.
2. Gehäuse nach Anspruch 1, wobei die Flansche oder Rückführungen (15, 27, 29, 41, 41B, 52, 62) und der Hauptabschnitt (51, 61) des zugehörigen Teils (2, 20, 30, 40, 50, 60) einen rechten Winkel bilden oder senkrecht zueinander sind.
3. Gehäuse nach Anspruch 1 oder 2, wobei mindestens ein Hauptabschnitt der Teile (2, 20, 30, 40) mindestens eine Längsprägung (11, 12, 13, 45) aufweist.
4. Gehäuse nach einem der vorhergehenden Ansprüche, wobei das Unterteil (40) zwei laterale Flansche oder Rückführungen (41) umfasst, die sich auf der gleichen Ebene oder parallel zu den Hauptabschnitten der Seitenwände (20) erstrecken und/oder wobei die Seitenwände (20) zwei Flansche oder Rückführungen (41B) an ihrer Unterkante umfassen, die sich auf der gleichen Ebene oder parallel zum Hauptabschnitt des Unterteils (40) erstrecken und/oder wo-
- bei das Unterteil (40) auf mindestens einer Seite mindestens eine Prägung (48A) mit einer oder mehreren lateralen Rückführungen (41) umfasst.
5. Gehäuse nach einem der vorhergehenden Ansprüche, wobei die Seitenwände (20) zwei Flansche oder Rückführungen (27) an ihrer Oberkante umfassen, die sich auf der gleichen Ebene oder parallel zum Hauptabschnitt des Oberteils (2) erstrecken und/oder wobei das Oberteil (2) zwei laterale Rückführungen umfasst, die sich auf der gleichen Ebene oder parallel zu den Hauptabschnitten der Seitenwände (20) erstrecken und/oder wobei das Oberteil (2) auf mindestens einer Seite mindestens eine Prägung (48A) umfasst, die einer der lateralen Rückführungen (41) entspricht.
6. Gehäuse nach einem der vorhergehenden Ansprüche, wobei mindestens eines der zwei benachbarten Teile (20, 30) eine Stecknase (46) und das mindestens andere der zwei benachbarten Teile (20, 30) eine Öffnung (29C) umfasst, wobei die Stecknase (46) in die Öffnung (29C) eingeführt wird, um die zwei benachbarten Teile (20, 30) zu fixieren oder vorzufixieren oder zu positionieren oder vorzupositionieren, insbesondere in einem Eckbereich, wobei insbesondere die Stecknase (46) und die zugehörige Öffnung (29C) Teile der Flansche oder Rückführungen (29, 42) der zwei benachbarten Teile (20, 30) sind.
7. Verfahren zur Montage eines Gehäuses für ein Haushaltsgerät, umfassend die folgenden Schritte:
- a) Bereitstellen mindestens zweier Teile, insbesondere eines Unterteils (40), zweier Seitenwände (20), eines Hinterteils (30) und eines Oberteils (2),
- b) Zusammensetzen mindestens zweier benachbarter Teile (2, 20, 30, 40, 50, 60) des Gehäuses, die aus Blech oder als Metallbleche in einem gemeinsamen Randbereich ausgebildet sind,
- c) wobei ein erstes Teil (50, 40) der mindestens zwei benachbarten Teile einen vorzugsweise hauptsächlich ebenen oder flachen Hauptabschnitt (51, 40) und, an einem Endbereich davon, einen Endflansch (52, 41) aufweist, der um eine Biegekante (53) in Bezug auf den Hauptabschnitt (51) gebogen und geklappt wird, und wobei das erste Teil (50, 40) in seinem Hauptabschnitt eine oder mehrere Prägungen (54, 48A) aufweist, die jeweils eine Anschlagoberfläche (55) aufweisen, die zum Endflansch (52, 41) weist,
- d) wobei ein zweites Teil (60, 20) der mindestens zwei benachbarten Teile einen vorzugsweise

hauptsächlich ebenen oder flachen Hauptabschnitt (61, 20) und, an einem Endbereich davon, einen Endflansch (62, 41B) aufweist, der um eine Biegekante (63) in Bezug auf den Hauptabschnitt (61, 20) gebogen und geklappt ist,

dd) wobei mindestens eine Verstärkungsprägung (48) zwischen dem Endflansch (62, 41B) und dem Hauptabschnitt (61, 20) des zweiten Teils (60, 20) angeordnet ist,

e) wobei der Abstand (w1) zwischen der Anschlagoberfläche (55) jeder Prägung (54, 48A) und der Innenfläche des Endflansches (52, 41) des ersten Teils (50, 40) an die Breite (w2) des Endflansches (62, 41B) des zweiten Teils angepasst ist, die von der Innenfläche des Hauptabschnitts (61, 20) gemessen wird, sodass sie sich hauptsächlich nur in der Dicke (t) des Blechs des zweiten Teils (60, 20) im Hauptabschnitt (61, 20) unterscheiden, oder so, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) beim Zusammensetzen der zwei Teile (50, 40; 60, 20) genau in den Zwischenraum zwischen dem Endflansch (52, 41) des ersten Teils (50, 40) und der Anschlagoberfläche (55) der Prägung (54, 48A) des ersten Teils (50, 40) passt und/oder so, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) nach Zusammensetzen der zwei Teile (50, 40; 60, 20) fest oder formschlüssig zwischen dem Endflansch (52, 41) des ersten Teils und der Prägung (54, 48A) gehalten wird,

f) und wobei der Endflansch (52, 41) des ersten Teils (50, 40) an die Außenfläche des Hauptabschnitts (61, 20) des zweiten Teils (60, 20) angelegt wird und der Endflansch (62, 41B) des zweiten Teils (60, 20) auf den Hauptschnitt (51, 40) des ersten Teils (50, 40) aufliegt und

g) wobei die zwei Biegekanten (53, 63) des ersten Teils (50, 40) und des zweiten Teils (60, 20) in eine benachbarte Position zueinander gebracht werden, in der sie parallel zueinander verlaufen,

h) wobei die eine oder die mehreren Prägungen (54, 48A) des ersten Teils (50, 40) derart ausgebildet und angeordnet sind, dass der Endflansch (62, 41B) des zweiten Teils (60, 20) zwischen der bzw. den Prägungen (54, 48A) einerseits und dem Endflansch (52, 41) des ersten Teils (50, 40) andererseits eingeklemmt ist.

8. Verfahren nach Anspruch 7, wobei, nachdem die zwei Teile zusammengesetzt wurden, diese mittels Fixiermitteln, wie z. B. mittels Schrauben, Schnappelementen oder Bolzen oder sogar Schweißverbindungen aneinander fixiert sind.

## Revendications

1. Boîtier pour appareil domestique, en particulier un four de cuisson domestique,

a) comportant au moins deux parties, en particulier une partie inférieure (40), deux parois latérales (20), une partie arrière (30) et une partie supérieure (2),

b) au moins deux parties adjacentes (2, 20, 30, 40, 50, 60) du boîtier étant formées de métal en feuilles ou comme des tôles métalliques et étant reliées entre elles dans une région de bords communs,

c) une première partie (50, 40) desdites au moins deux parties adjacentes présentant une section principale (51, 40), de préférence principalement plane ou plate, et, au niveau d'une région d'extrémité de celle-ci, une bride (52, 41) d'extrémité qui est cintrée ou pliée autour d'un bord (53) de cintrage par rapport à la section principale (51) et la première partie (50, 40) présentant, dans sa section principale, un ou plusieurs gaufrages (54, 48A) dont chacun est doté d'une surface (55) de butée faisant face à la bride (52, 41) d'extrémité,

d) une deuxième partie (60, 20) desdites au moins deux parties adjacentes présentant une section principale (61, 20), de préférence principalement plane ou plate, et, au niveau d'une région d'extrémité de celle-ci, une bride (62, 41B) d'extrémité qui est cintrée ou pliée autour d'un bord (63) de cintrage par rapport à la section principale (61, 20),

dd) au moins un gaufrage (48) de renforcement étant disposé entre ladite bride (62, 41B) d'extrémité et ladite section principale (61, 20) de ladite deuxième partie (60, 20),

e) la distance (w1) entre la surface (55) de butée de chaque gaufrage (54, 48A) et la face intérieure de la bride (52, 41) d'extrémité de la première partie (50, 40) étant adaptée à la largeur (w2) de la bride (62, 41B) d'extrémité de la deuxième partie mesurée à partir de la face intérieure de la section principale (61, 20) de telle façon qu'elles ne diffèrent principalement que par l'épaisseur (t) du métal en feuilles de la deuxième partie (60, 20) dans la section principale (61, 20) ou de telle façon que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) entre exactement dans l'espace intermédiaire entre la bride (52, 41) d'extrémité de la première partie (50, 40) et la surface (55) de butée du gaufrage (54, 48A) de la première partie (50, 40) et/ou de telle façon que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) soit main-

- tenue fermement ou par emboîtement de forme entre la bride (52, 41) d'extrémité de la première partie et le gaufrage (54, 48A),  
 f) et la bride (52, 41) d'extrémité de la première partie (50, 40) portant contre la face extérieure de la section principale (61, 20) de la deuxième partie (60, 20) et la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) reposant sur la section principale (51, 40) de la première partie (50, 40) et  
 g) les deux bords (53, 63) de cintrage de la première partie (50, 40) et de la deuxième partie (60, 20) étant adjacents entre eux et parallèles entre eux,  
 h) le ou les gaufrages (54, 48A) de la première partie (50, 40) étant formés et disposés de telle manière que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) soit pincée entre ledit ou lesdits gaufrages (54, 48A) d'une part et la bride (52, 41) d'extrémité de la première partie (50, 40) d'autre part.
2. Boîtier selon la revendication 1, les brides ou rabats (15, 27, 29, 41, 41B, 52, 62) et la section principale (51, 61) de la partie correspondante (2, 20, 30, 40, 50, 60) formant un angle droit ou étant perpendiculaires entre eux.
  3. Boîtier selon la revendication 1 ou 2, au moins une section principale des parties (2, 20, 30, 40) comprenant au moins un gaufrage longitudinal (11, 12, 13, 45).
  4. Boîtier selon l'une quelconque des revendications précédentes, la partie inférieure (40) comportant deux brides ou rabats latéraux (41) s'étendant dans le même plan que ou en parallèle avec les sections principales des parois latérales (20) et/ou les parois latérales (20) comportant au niveau de leur bord inférieur deux brides ou rabats (41B) s'étendant dans le même plan que ou en parallèle avec la section principale de la partie inférieure (40) et/ou la partie inférieure (40) comportant, sur au moins un côté, au moins un gaufrage (48A) correspondant à un des rabats latéraux (41).
  5. Boîtier selon l'une quelconque des revendications précédentes, les parois latérales (20) comportant au niveau de leur bord supérieur deux brides ou rabats (27) s'étendant dans le même plan que ou en parallèle avec la section principale de la partie supérieure (2) et/ou la partie supérieure (2) comportant deux rabats latéraux s'étendant dans le même plan que ou en parallèle avec les sections principales des parois latérales (20) et/ou la partie supérieure (2) comportant, sur au moins un côté, au moins un gaufrage (48A) correspondant à un des rabats latéraux (41).
  6. Boîtier selon l'une quelconque des revendications précédentes, au moins une des deux parties adjacentes (20, 30) comportant une languette encastrable (46) et au moins une autre des deux parties adjacentes (20, 30) comportant une ouverture (29C), la languette encastrable (46) étant insérée dans l'ouverture (29C) afin de fixer ou de pré-fixer, ou de positionner ou de pré-positionner les deux parties adjacentes (20, 30), en particulier dans une région de coin, en particulier la languette encastrable (46) et l'ouverture (29C) correspondante faisant partie de brides ou de rabats (29, 42) des deux parties adjacentes (20, 30).
  7. Procédé d'assemblage d'un boîtier pour appareil domestique comportant les étapes suivantes :
    - a) mettre en place au moins deux parties, en particulier une partie inférieure (40), deux parois latérales (20), une partie arrière (30) et une partie supérieure (2), b) composer au moins deux parties adjacentes (2, 20, 30, 40, 50, 60) du boîtier qui sont formées de métal en feuilles ou comme des tôles métalliques dans une région de bords communs,
    - c) une première partie (50, 40) desdites au moins deux parties adjacentes présentant une section principale (51, 40), de préférence principalement plane ou plate, et, au niveau d'une région d'extrémité de celle-ci, une bride (52, 41) d'extrémité qui est cintrée ou pliée autour d'un bord (53) de cintrage par rapport à la section principale (51) et la première partie (50, 40) présentant, dans sa section principale, un ou plusieurs gaufrages (54, 48A) dont chacun est doté d'une surface (55) de butée faisant face à la bride (52, 41) d'extrémité,
    - d) une deuxième partie (60, 20) desdites au moins deux parties adjacentes présentant une section principale (61, 20), de préférence principalement plane ou plate, et, au niveau d'une région d'extrémité de celle-ci, une bride (62, 41B) d'extrémité qui est cintrée ou pliée autour d'un bord (63) de cintrage par rapport à la section principale (61, 20),
    - dd) au moins un gaufrage (48) de renforcement étant disposé entre ladite bride (62, 41B) d'extrémité et ladite section principale (61, 20) de ladite deuxième partie (60, 20),
    - e) la distance (w1) entre la surface (55) de butée de chaque gaufrage (54, 48A) et la face intérieure de la bride (52, 41) d'extrémité de la première partie (50, 40) étant adaptée à la largeur (w2) de la bride (62, 41B) d'extrémité de la deuxième partie mesurée à partir de la face intérieure de la section principale (61, 20) de telle

façon qu'elles ne diffèrent principalement que par l'épaisseur (t) du métal en feuilles de la deuxième partie (60, 20) dans la section principale (61, 20) ou de telle façon que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20), lors de la composition des deux parties (50, 40 ; 60, 20), entre exactement dans l'espace intermédiaire entre la bride (52, 41) d'extrémité de la première partie (50, 40) et la surface (55) de butée du gaufrage (54, 48A) de la première partie (50, 40) et/ou de telle façon que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20), après la composition des deux parties (50, 40 ; 60, 20) soit maintenue fermement ou par emboîtement de forme entre la bride (52, 41) d'extrémité de la première partie et le gaufrage (54, 48A),

f) et la bride (52, 41) d'extrémité de la première partie (50, 40) étant amenée à porter contre la face extérieure de la section principale (61, 20) de la deuxième partie (60, 20) et la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) étant amenée à reposer sur la section principale (51, 40) de la première partie (50, 40) et

g) les deux bords (53, 63) de cintrage de la première partie (50, 40) et de la deuxième partie (60, 20) étant amenés dans une position où ils sont adjacents entre eux et parallèles entre eux,

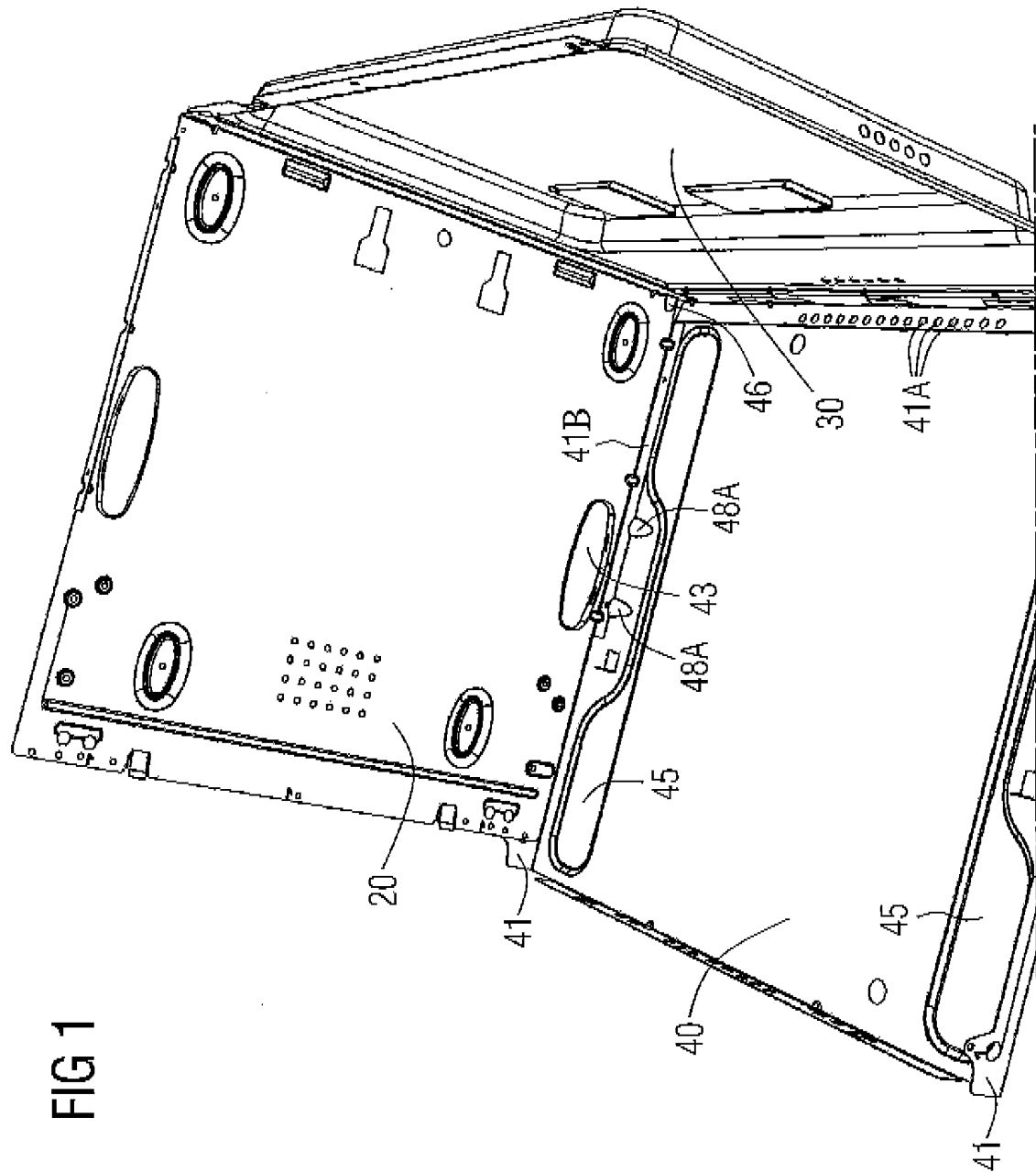
h) le ou les gaufrages (54, 48A) de la première partie (50, 40) étant formés et disposés de telle manière que la bride (62, 41B) d'extrémité de la deuxième partie (60, 20) soit pincée entre ledit ou lesdits gaufrages (54, 48A) d'une part et la bride (52, 41) d'extrémité de la première partie (50, 40) d'autre part.

8. Procédé selon la revendication 7, **caractérisé en ce qu'**après la composition des deux parties, elles sont fixées l'une à l'autre par des moyens de fixation comme des vis, des moyens d'encliquetage ou des boulons, ou même des soudures.

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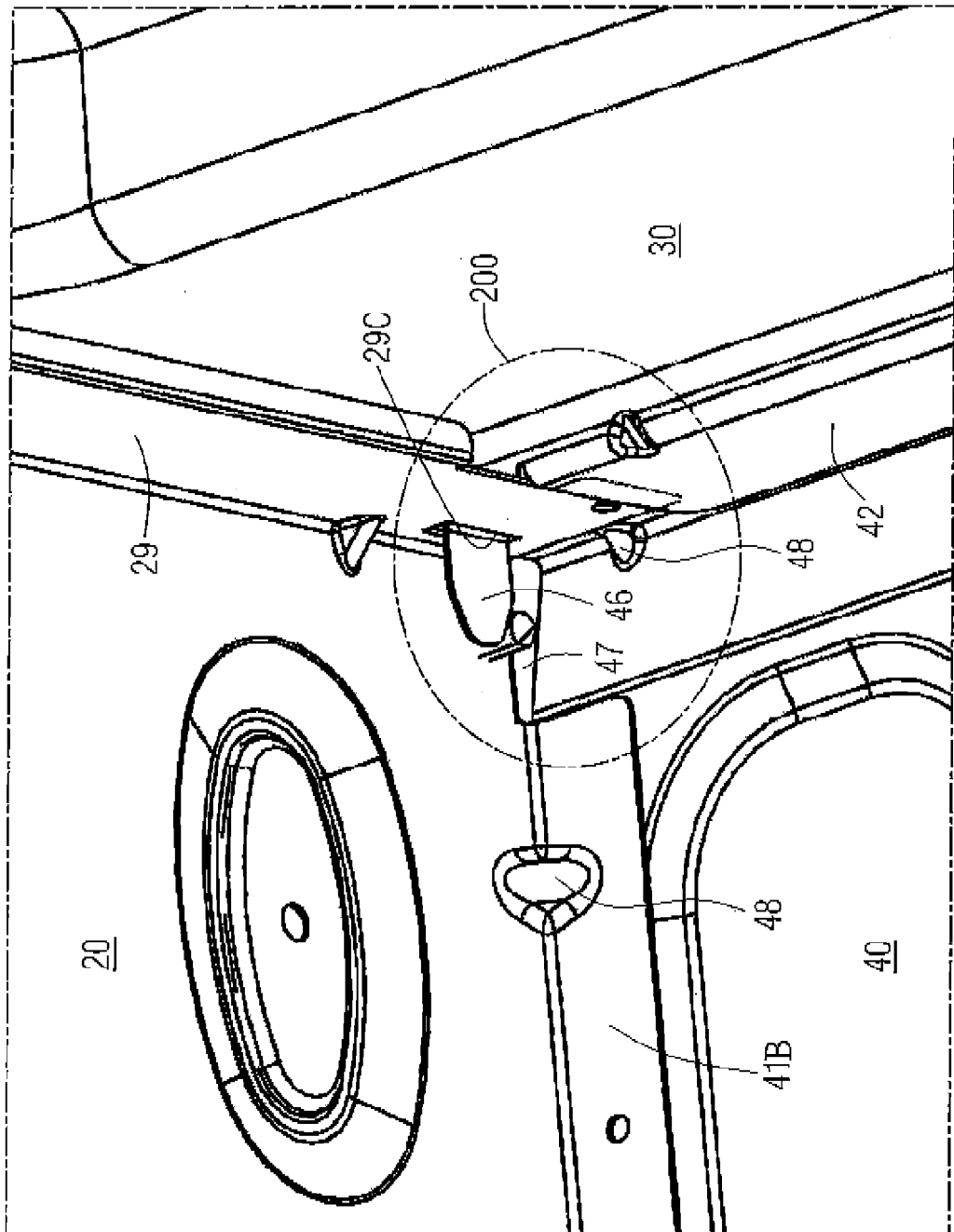


FIG 2

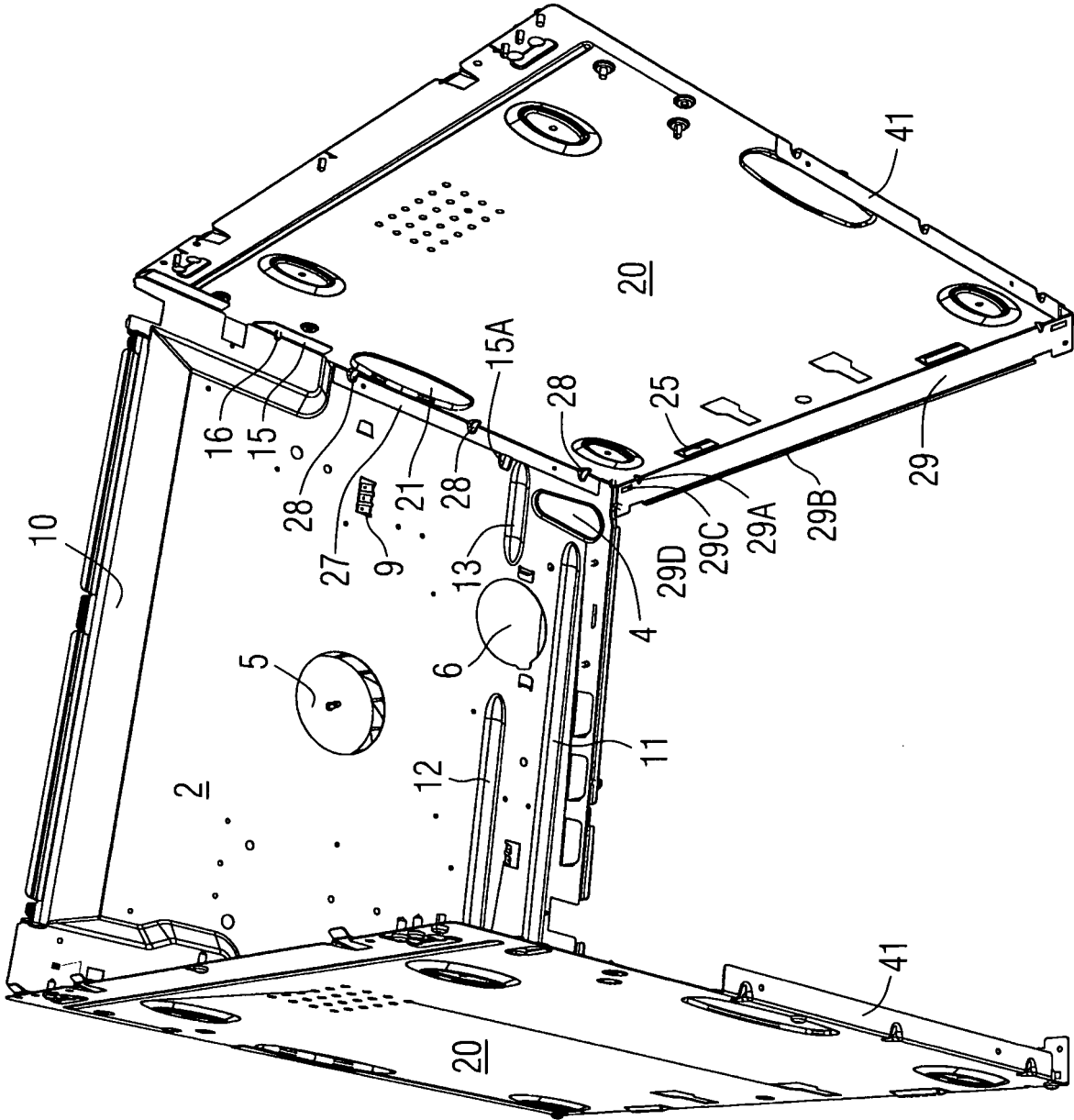


FIG 3

FIG 4

