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

(11) **EP 3 109 558 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.12.2016 Bulletin 2016/52

(51) Int Cl.:
F24C 15/32 *(2006.01)* ***F24C 15/36*** *(2006.01)*

(21) Application number: **16175624.2**

(22) Date of filing: **22.06.2016**

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

(30) Priority: **24.06.2015 EP 15173600**

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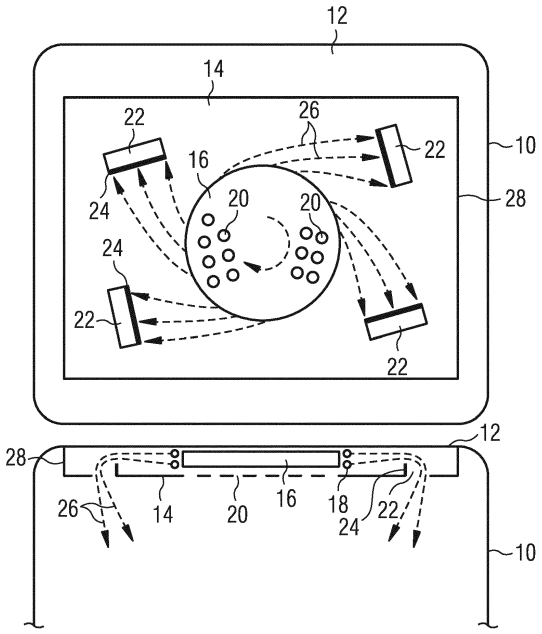
(54) CONVECTION HEATING DEVICE FOR A COOKING OVEN

(57) The present invention relates to a convection heating device for an oven cavity (10) of a cooking oven, wherein said convection heating device is arrangeable or arranged at a rear wall (12) of the oven cavity (10). The convection heating device comprises a radial fan (16), at least one heating element (18) and a fan cover (14), wherein the radial fan (16) and the heating element (18) are arrangeable or arranged between the fan cover (14) and the rear wall (12) of the oven cavity (10). At least one main plane of the fan cover (14) extends parallel to the rear wall (12) in the mounted state of said fan cover (14). The fan cover (14) comprises an inlet section (20) arranged in a central portion of said fan cover (14). The inlet section (20) includes a plurality of holes and/or slots. The fan cover (14) comprises an outlet section (22) arranged in an outer portion of said fan cover (14). The outlet section (22) includes a number of cut-outs. The inlet section (20) and outlet section (22) are arranged in the main plane of the fan cover (14). The fan cover (14) comprises a side wall (28) enclosing a border of said fan cover (14) and extending rearwards from the main plane of said fan cover (14). The cut-outs of the outlet section (22) have longitudinal shapes. The longitudinal axes of the cut-outs of the outlet section (22) are inclined with respect to reference axes perpendicular to radial directions originating from the centre of the fan cover (14), so that the longitudinal axes of the cut-outs are arranged perpendicular to the directions of airflows arriving at said cut-outs. At least one cut-out of the outlet section (22) comprises a deflecting plate (24) extending rearwards from that longitudinal side of said cut-out, which is the closest longitudinal side to the centre of the fan cover (14).

FIG 1



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Description

[0001] The present invention relates to a convection heating device for an oven cavity of a cooking oven. Further, the present invention relates to a fan cover for a convection heating device in an oven cavity of a cooking oven. Moreover, the present invention relates to a cooking oven with a convection heating device.

[0002] In the convection heating mode, forced convection plays a significant part in the cooking process. A radial fan driven by a motor rotates and generates an air flow taken from the oven cavity through an inlet of a fan cover arranged in front of the rear wall of the oven cavity. Said fan cover is a separating wall between a convection heating device and the proper oven cavity. Thus, the convection heating device forms the rear portion of the oven cavity. Usually, the radial fan is arranged at the centre of the rear wall of the oven cavity. Then, the air flow is heated up by a heating element arranged between the fan cover and the rear wall of the oven cavity. At last, the air flow enters the proper oven cavity again through opening in an outer portion of the fan cover or through a gap between the border of the fan cover and the rear wall of the oven cavity. The structure of the fan cover determines the geometric distribution of the air flow into the proper oven cavity.

[0003] FIG 5 illustrates a schematic front view of the convection heating device in the oven cavity of the cooking oven according to the prior art. Said convection heating device is arranged in a rear portion of the oven cavity 10 and directly in front of the rear wall 12 of said oven cavity 10. The convection heating device comprises the fan cover 14, the radial fan 16 and the heating element 18. The fan cover 14 is substantially formed as a sheet and arranged parallel to the rear wall 12 of the oven cavity 10. The radial fan 16 is arranged between the fan cover 14 and the rear wall 12. Further, the radial fan 16 is arranged in the central portion of the rear wall 12. The rotation axis of the radial fan 16 extends perpendicular to the planes of the fan cover 14 and the rear wall 12. The heating element 18 encloses the radial fan 16. The fan cover 14 comprises the inlet section 20 and the outlet section 22. The inlet section 20 is arranged in the central portion of the fan cover 14 and in front of the radial fan 16. The outlet section 22 is formed between the border of the fan cover 16 and the rear wall 12 of the oven cavity 10.

[0004] The radial fan 16 sucks the airflow 26 from the centre of the oven cavity 10 through the inlet section 20. The airflow 26 to the radial fan 16 streams parallel to the rotation axis of the radial fan 16. From the radial fan 16 the airflow 26 streams radially to the rotation axis of the radial fan 16 and then through the outlet section 22 into the oven cavity 10.

[0005] FIG 6 illustrates a schematic top view of the convection heating device in the oven cavity 10 of the cooking oven according to the prior art. The radial fan 16 sucks the airflow 26 from the centre of the oven cavity 10 through the inlet section 20, wherein said airflow 26 streams parallel to the rotation axis of the radial fan 16. Afterwards the air flow 26 from the radial fan 16 radially to the rotation axis of the radial fan 16 and between the fan cover 14 and the rear wall 12 of the oven cavity 10 and then through the outlet section 22 into the oven cavity 10. Thereby a substantial part of the air flow 26 streams along the side walls of the oven cavity 10 and towards to an oven door and is then redirected to the central portion of the oven cavity 10. The fan cover 14 avoids that the air flow 26 is directly blown from the heating element to the food stuff in the centre of the oven cavity 10.

[0006] However, the side walls of the oven cavity 10 are heated up strongly, since a substantial part of the air flow 26 streams along said side walls. The side walls form a large thermal mass, so that the energy losses to the ambient increase and therefore energy consumption increases. It would be advantageous, if the heating-up of the side walls of the oven cavity 10 could be reduced.

[0007] It is an object of the present invention to provide a convection heating device for an oven cavity of a cooking oven, wherein said fan cover avoids a strong heating-up of the said walls of the oven cavity.

[0008] The object is achieved by the convection heating device according to claim 1.

[0009] According to the present invention a convection heating device for an oven cavity of a cooking oven is provided, wherein said convection heating device is arrangeable or arranged at a rear wall of the oven cavity, and wherein:

- the convection heating device comprises a radial fan, at least one heating element and a fan cover,
- the radial fan and the heating element are arrangeable or arranged between the fan cover and the rear wall of the oven cavity,
- at least one main plane of the fan cover extends parallel to the rear wall in the mounted state of said fan cover,
- the fan cover comprises an inlet section arranged in a central portion of said fan cover,
- the inlet section includes a plurality of holes and/or slots,
- the fan cover comprises an outlet section arranged in an outer portion of said fan cover,
- the outlet section includes a number of cut-outs,
- the inlet section and outlet section are arranged in the main plane of the fan cover,
- the fan cover comprises a side wall enclosing a border of said fan cover and extending rearwards from the main plane of said fan cover,
- the cut-outs of the outlet section have longitudinal shapes,
- the longitudinal axes of the cut-outs of the outlet section are inclined with respect to corresponding reference axes perpendicular to radial directions originating from the centre of the fan cover, so that the longitudinal axes of the cut-outs are arranged per-

pendicular to the directions of air flows arriving at said cut-outs, and

- at least one cut-out of the outlet section comprises a deflecting plate extending rearwards from that longitudinal side of said cut-out, which is the closest longitudinal side to the centre of the fan cover.

[0010] The core of the present invention is the orientation of the cut-outs of the outlet section with respect to the directions of air flows from the radial fan on the one hand and the deflecting plate extending rearwards on the other hand. The air flows from the radial fan have radial components, but also tangential components. The orientation of the cut-out of the outlet section allows that a maximum part of the air flow reaches perpendicularly the longitudinal side of said cut-out. The deflecting plate extending rearwards is preferably placed upstream respect to the incoming flow, and generates favoured turbulences, preferably which guide the air flow into said cut out so air flow emerge perpendicular to the fan cover. The airflow from the convection heating device into the oven cavity removes away from the side walls of the oven cavity on the one hand and passes by the food stuff arranged in the centre of said oven cavity on the other hand. The heating-up of the side walls of the oven cavity is reduced and the heat distribution inside the oven cavity is substantially even. The inventive convection heating device avoids energy losses in the environment of the side walls of the oven cavity.

[0011] For example, the angles between the longitudinal axes of the cut-outs of the outlet section and the corresponding reference axes are between 30° and 60°, in particular between 40° and 50°. The angles are adapted to the direction of the airflow from the radial fan. Said airflow from the radial fan has a radial and a tangential component.

[0012] Preferably, the deflecting plate has the same size as the corresponding cut-out.

[0013] In particular, the deflecting plate extends perpendicular to the main plane of the fan cover.

[0014] According to one embodiment of the present invention, at least one longitudinal side of the cut-outs of the outlet section is linear.

[0015] In this case, at least one deflecting plate may be plane.

[0016] According to another embodiment of the present invention, at least one longitudinal side of the cut-outs of the outlet section is curved.

[0017] Further, the at least one curved longitudinal side of the cut-out of the outlet section may be concave to the centre of the fan cover.

[0018] In the latter case, also at least one deflecting plate may be curved.

[0019] In particular, the curved deflecting plate has the same curvature as the corresponding curved longitudinal side of the cut-out.

[0020] Moreover, the size of the inlet section of the fan cover may be adapted to the size of the radial fan. This optimizes the air flow from the oven cavity into the convection heating device.

[0021] Further, the present invention relates to a fan cover for a convection heating device in an oven cavity of a cooking oven, wherein:

- the fan cover is arrangeable or arranged in front of a radial fan attached at a rear wall of the oven cavity,
- at least one main plane of the fan cover extends parallel to the rear wall in the mounted state of said fan cover,
- the fan cover comprises an inlet section arranged in a central portion of said fan cover,
- the inlet section includes a plurality of holes and/or slots,
- the fan cover comprises an outlet section arranged in an outer portion of said fan cover,
- the outlet section includes a number of cut-outs,
- the inlet section and outlet section are arranged in the main plane of the fan cover,
- the fan cover comprises a side wall enclosing a border of said fan cover and extending rearwards from the main plane of said fan cover,
- the cut-outs of the outlet section have longitudinal shapes,
- the longitudinal axes of the cut-outs of the outlet section are inclined with respect to corresponding reference axes perpendicular to radial directions originating from the centre of the fan cover, so that the longitudinal axes of the cut-outs are arranged perpendicular to the directions of airflows arriving at said cut-outs, and
- at least one cut-out of the outlet section comprises a deflecting plate extending rearwards from that longitudinal side of said cut-out, which is the closest longitudinal side to the centre of the fan cover.

[0022] In particular, the fan cover is provided for the convection heating device mentioned above.

[0023] Preferably, the at least one heating element encloses the radial fan.

[0024] For example, the at least one heating element is a ring heating element.

[0025] Moreover, the present invention relates to a cooking oven with a convection heating device, wherein the cooking oven comprises a convection heating device and/or a fan cover mentioned above.

[0026] In particular, the width and/or the height of the fan cover are marginally smaller than the width and the height, respectively, of the rear wall of the oven cavity.

[0027] Preferably, a space between the fan cover, the side wall of said fan cover and the rear wall of the oven cavity is closed, without regard to the inlet section and outlet section.

[0028] Novel and inventive features of the present invention are set forth in the appended claims.

[0029] The present invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates a schematic front view and top view of a convection heating device in an oven cavity of a cooking oven according to a first embodiment of the present invention,

FIG 2 illustrates a schematic front view and top view of the convection heating device in the oven cavity of the cooking oven according to a second embodiment of the present invention,

FIG 3 illustrates a schematic top view of the convection heating device in the oven cavity of the cooking oven according to the first and second embodiment of the present invention,

FIG 4 illustrates a detailed schematic top view of the convection heating device in the oven cavity of the cooking oven according to the first and second embodiment of the present invention,

FIG 5 illustrates a schematic front view of the convection heating device in the oven cavity of the cooking oven according to the prior art, and

FIG 6 illustrates a schematic top view of the convection heating device in the oven cavity of the cooking oven according to the prior art.

[0030] FIG 1 illustrates a schematic front view and top view of a convection heating device in an oven cavity 10 of a cooking oven according to a first embodiment of the present invention. The front view of the convection heating device is shown in the upper picture in FIG 1, while the top view of said convection heating device is shown in the lower picture therein.

[0031] The convection heating device is arranged in a rear portion of the oven cavity 10 and directly in front of the rear wall 12 of said oven cavity 10. The convection heating device comprises a fan cover 14, a radial fan 16 and a heating element 18. The fan cover 14 is substantially formed as a sheet and arranged parallel to the rear wall 12 of the oven cavity 10. The radial fan 16 is arranged between the fan cover 14 and the rear wall 12. The radial fan 16 is arranged in a central portion of the rear wall 12. The rotation axis of the radial fan 16 extends perpendicular to the planes of the fan cover 14 and the rear wall 12. In this example, the heating element 18 encloses the radial fan 16.

[0032] The fan cover 14 comprises an inlet section 20 and an outlet section 22. The inlet section 20 is arranged in a central portion of the fan cover 14. The inlet section 20 includes a plurality of holes. Said plurality of holes is substantially arranged in front of the radial fan 16. The outlet section 22 includes a number of cut-outs arranged in an outer portion of the fan cover 16. In this example, the outlet section 22 of the fan cover 14 includes four cut-outs. In this embodiment, each cut-out has a rectangular shape and hence four edges. The longitudinal sides of the rectangular cut-outs are arranged substantially perpendicular to the direction of the airflow from the radial fan 16.

[0033] A side wall 28 encloses the border of said fan cover 14. The side wall 28 extends perpendicular to the fan cover 14. In this example, the fan cover 14 and the side wall 28 are formed as a single-piece part. The side wall 28 extends rearwards from the border of the fan cover 14 to the rear wall 12 of the oven cavity 10. The rear wall 12, the fan cover 14 and the side wall 28 form a space. Without regard to the inlet section 20 and outlet section 22, said space is a closed space.

[0034] Further, each cut-out includes a deflecting plate 24 at one edge. The deflecting plate 24 is arranged at that edge, which is the closest to the radial fan 16 and to the centre of the fan cover 14. The deflecting plates 24 are bended rearward. The planes of the deflecting plates 24 extend substantially perpendicular to the planes of the rear wall 12 and fan cover 14. In this example, the area of each deflecting plate 24 is the same as the corresponding cut-out. Thus, the deflecting plate 24 may be obtained by a U-shaped cut in the fan cover 14, wherein the resulting flap is subsequently bended rearwards.

[0035] The deflecting plates 24 generate favoured turbulences. Said turbulence contribute that the airflow from the convection heating device into the oven cavity, preferably emerging perpendicularly to the fan cover 14, and therefore removes away from the side walls of the oven cavity on the one hand and passes by the food stuff arranged in the centre of said oven cavity on the other hand.

[0036] The radial fan 16 sucks the airflow 26 from the centre of the oven cavity 10 through the inlet section 20. The airflow 26 to the radial fan 16 streams parallel to the rotation axis of the radial fan 16. In contrast, the airflow 26 from the radial fan 16 streams radial to the rotation axis of the radial fan 16. However, the airflow 26 from the radial fan 16 has also a component tangential to the rotation axis of the radial fan 16. Initially, the radial fan 16 blows the airflow 26 between the rear wall 12 and the fan cover 14 and parallel to planes of the rear wall 12 and fan cover 14. Then, the airflow 26 from the radial fan 16 is deflected by the deflecting plates 24, streams through the cut-outs of the outlet section 22 and substantially forwards into a central portion of the oven cavity 10.

[0037] The airflow 26 from the radial fan 16 has also a component tangential to the rotation axis of the radial fan 16. The orientation of the rectangular cut-outs are arranged substantially perpendicular to the direction of the airflow 26 from the radial fan 16.

[0038] FIG 2 illustrates a schematic front view and top view of the convection heating device in the oven cavity 10 of the cooking oven according to a second embodiment of the present invention. The front view of the convection heating device is shown in the upper picture in FIG 2, while the top view of said convection heating device is shown in the lower picture therein.

[0039] The convection heating device according to the second embodiment has substantially the same structure

as the convection heating device of the first embodiment. The first and second embodiments differ in the shapes of the cut-outs of the outlet section 22. In the second embodiment the longitudinal sides of the cut-outs are curved. The longitudinal sides of the cut-outs are concave in relation to the incident air flow 26. The directions of the incident air flow 26 are perpendicular to the corresponding sections of the longitudinal side. The deflecting plates 24 are similarly curved as the corresponding longitudinal sides.

[0040] The convection heating devices according to the first and second embodiments may be combined. The fan cover 14 may include one or more cut-outs with linear longitudinal sides as well as one or more cut-outs with curved longitudinal sides.

[0041] FIG 3 illustrates a schematic top view of the convection heating device in the oven cavity 10 of the cooking oven according to the first and second embodiment of the present invention. FIG 3 clarifies the distribution of the airflow 26.

[0042] The airflow 26 is sucked by the radial fan 16 from the centre of the oven cavity 10 through the inlet section 20, wherein the airflow 26 to the radial fan 16 streams substantially parallel to the rotation axis of the radial fan 16. Then, the airflow 26 leaves the radial fan 16 radial to the rotation axis of said radial fan 16, wherein the airflow 26 is blown by the radial fan 16 between the rear wall 12 and the fan cover 14 and parallel to planes of said rear wall 12 and fan cover 14. Afterwards, the airflow 26 from the radial fan 16 is deflected by the deflecting plates 24, streams through the cut-outs of the outlet section 22 and substantially forwards into the oven cavity 10. Thereby, the distance between the airflow 26 and the side wall of the oven cavity 10 increases. Thus, the hot airflow 26 does not directly impact onto the side walls of the oven cavity 10. Otherwise, the hot airflow 26 does not directly impact onto food stuff in the centre of the oven cavity 10. These properties effect reduced heating-up of the side walls of the oven cavity 10 as well as a substantially even heat distribution inside said oven cavity 10. The inventive fan cover 14 avoids energy losses in the environment of the side walls of the oven cavity 10.

[0043] FIG 4 illustrates a detailed schematic top view of the convection heating device in the oven cavity 10 of the cooking oven according to the first and second embodiment of the present invention. FIG 4 shows the environment around a cut-out of the outlet section 22.

[0044] Turbulences 30 are formed downstream the deflecting plate 24. Said turbulences 30 allow the deflection of the air flow 26. Without the deflecting plate 24, the air flow 26 would stream lineally through the cut-out into the oven cavity 10 and then towards to the side wall of said oven cavity.

[0045] FIG 5 illustrates a schematic front view of the convection heating device in the oven cavity of the cooking oven according to the prior art.

[0046] The convection heating device of the prior art is arranged in a rear portion of the oven cavity 10 and directly in front of the rear wall 12 of said oven cavity 10. The convection heating device comprises the fan cover 14, the radial fan 16 and the heating element 18. The fan cover 14 is substantially formed as a sheet and arranged parallel to the rear wall 12 of the oven cavity 10. The radial fan 16 is arranged between the fan cover 14 and the rear wall 12. The radial fan 16 is arranged in a central portion of the rear wall 12. The rotation axis of the radial fan 16 extends perpendicular to the planes of the fan cover 14 and the rear wall 12. The heating element 18 encloses the radial fan 16.

[0047] The fan cover 14 comprises the inlet section 20 and the outlet section 22. The inlet section 20 is arranged in a central portion of the fan cover 14 and in front of the radial fan 16. The outlet section 22 is formed between the border of the fan cover 16 and the rear wall 12 of the oven cavity 10.

[0048] The radial fan 16 sucks the airflow 26 from the centre of the oven cavity 10 through the inlet section 20. The airflow 26 to the radial fan 16 streams parallel to the rotation axis of the radial fan 16. From the radial fan 16 the airflow 26 streams radially to the rotation axis of the radial fan 16 and then through the outlet section 22 into the oven cavity 10.

[0049] FIG 6 illustrates a schematic top view of the convection heating device in the oven cavity 10 of the cooking oven according to the prior art. The radial fan 16 sucks the airflow 26 from the centre of the oven cavity 10 through the inlet section 20, wherein said airflow 26 streams parallel to the rotation axis of the radial fan 16. Afterwards the air flow 26 from the radial fan 16 radially to the rotation axis of the radial fan 16 and between the fan cover 14 and the rear wall 12 of the oven cavity 10 and then through the outlet section 22 into the oven cavity 10. Thereby a substantial part of the air flow 26 streams along a side wall of the oven cavity 10, so that the side walls of the oven cavity 10 are heated up strongly. The side walls form a large thermal mass resulting in large energy consumption.

[0050] The large energy consumption on grounds of the heating-up of the side walls of the oven cavity 10 is overcome by the fan cover 14 according to the present invention. Additionally, the fan cover 14 of the present invention allows a substantially even heat distribution inside the oven cavity 10.

List of reference numerals

[0051]

10	oven cavity
12	rear wall
14	fan cover
16	radial fan
18	heating element
20	inlet section
22	outlet section

24 deflecting plate
26 airflow
28 side wall
30 turbulences

Claims

1. A convection heating device for an oven cavity (10) of a cooking oven, wherein said convection heating device is arrangeable or arranged at a rear wall (12) of the oven cavity (10), and wherein:

- the convection heating device comprises a radial fan (16), at least one heating element (18) and a fan cover (14),
- the radial fan (16) and the heating element (18) are arrangeable or arranged between the fan cover (14) and the rear wall (12) of the oven cavity (10),
- at least one main plane of the fan cover (14) extends parallel to the rear wall (12) in the mounted state of said fan cover (14),
- the fan cover (14) comprises an inlet section (20) arranged in a central portion of said fan cover (14),
- the inlet section (20) includes a plurality of holes and/or slots,
- the fan cover (14) comprises an outlet section (22) arranged in an outer portion of said fan cover (14),
- the outlet section (22) includes a number of cut-outs,
- the inlet section (20) and outlet section (22) are arranged in the main plane of the fan cover (14),
- the fan cover (14) comprises a side wall (28) enclosing a border of said fan cover (14) and extending rearwards from the main plane of said fan cover (14),
- the cut-outs of the outlet section (22) have longitudinal shapes,
- the longitudinal axes of the cut-outs of the outlet section (22) are inclined with respect to corresponding reference axes perpendicular to radial directions originating from the centre of the fan cover (14), so that the longitudinal axes of the cut-outs are arranged perpendicular to the directions of air flows arriving at said cut-outs, and
- at least one cut-out of the outlet section (22) comprises a deflecting plate (24) extending rearwards from that longitudinal side of said cut-out, which is the closest longitudinal side to the centre of the fan cover (14), in particular wherein said deflecting plate (24) is placed upstream to the flow direction.

2. The convection heating device according to claim 1, **characterised in that**
the angles between the longitudinal axes of the cut-outs of the outlet section (22) and the corresponding reference axes are between 30° and 60°, in particular between 40° and 50°.

3. The convection heating device according to claim 1 or 2, **characterised in that**
the deflecting plate (24) has the same size as the corresponding cut-out.

4. The convection heating device according to any one of the preceding claims,
characterised in that
the deflecting plate (24) extends perpendicular to the main plane of the fan cover (14).

5. The convection heating device according to any one of the preceding claims,
characterised in that
at least one longitudinal side of the cut-outs of the outlet section (22) is linear, wherein at least one deflecting plate (24) is plane.

6. The convection heating device according to any one of the preceding claims,
characterised in that
at least one longitudinal side of the cut-outs of the outlet section (22) is curved.

7. The convection heating device according to claim 6,
characterised in that
the at least one curved longitudinal side of the cut-out of the outlet section (22) is concave to the centre the fan cover (14).

8. The convection heating device according to claim 6 or 7,
characterised in that
at least one deflecting plate (24) is curved, wherein preferably the curved deflecting plate (24) has the same curvature as the corresponding curved longitudinal side of the cut-out.

9. The convection heating device according to any one of the preceding claims,
characterised in that
the size of the inlet section (20) of the fan cover (14) is adapted to the size of the radial fan (16).

10. The convection heating device according to any one of the preceding claims,
characterised in that
the at least one heating element (18) encloses the radial fan (16), wherein preferably the at least one heating element is a ring heating element (18).

11. A fan cover (14) for a convection heating device in an oven cavity (10) of a cooking oven, wherein:

- the fan cover (14) is arrangeable or arranged in front of a radial fan (16) attached at a rear wall (12) of the oven cavity (10),
- at least one main plane of the fan cover (14) extends parallel to the rear wall (12) in the mounted state of said fan cover (14),
- the fan cover (14) comprises an inlet section (20) arranged in a central portion of said fan cover (14),
- the inlet section (20) includes a plurality of holes and/or slots,
- the fan cover (14) comprises an outlet section (22) arranged in an outer portion of said fan cover (14),
- the outlet section (22) includes a number of cut-outs,
- the inlet section (20) and outlet section (22) are arranged in the main plane of the fan cover (14),
- the fan cover (14) comprises a side wall (28) enclosing a border of said fan cover (14) and extending rearwards from the main plane of said fan cover (14),
- the cut-outs of the outlet section (22) have longitudinal shapes,
- the longitudinal axes of the cut-outs of the outlet section (22) are inclined with respect to corresponding reference axes perpendicular to radial directions originating from the centre of the fan cover (14), so that the longitudinal axes of the cut-outs are arranged perpendicular to the directions of airflows arriving at said cut-outs, and
- at least one cut-out of the outlet section (22) comprises a deflecting plate (24) extending rearwards from that longitudinal side of said cut-out, which is the closest longitudinal side to the centre of the fan cover (14).

12. The fan cover (14) according to claim 11,

characterised in that
the fan cover (14) is provided for the convection heating device according to any one of the claims 1 to 10.

13. A cooking oven comprising a convection heating device,
characterised in that
the cooking oven comprises a convection heating device according to any one of the claims 1 to 10 and/or a fan cover (14) according to claim 11 or 12.

14. A cooking oven according to claim 13,
characterised in that
the width and/or the height of the fan cover (14) are marginally smaller than the width and the height, respectively, of the rear wall (12) of the oven cavity (10).

15. A cooking oven according to claim 13 or 14,

characterised in that
a space between the fan cover (14), the side wall (28) of said fan cover (14) and the rear wall (12) of the oven cavity (10) is closed, without regard to the inlet section (20) and outlet section (22).

FIG 1

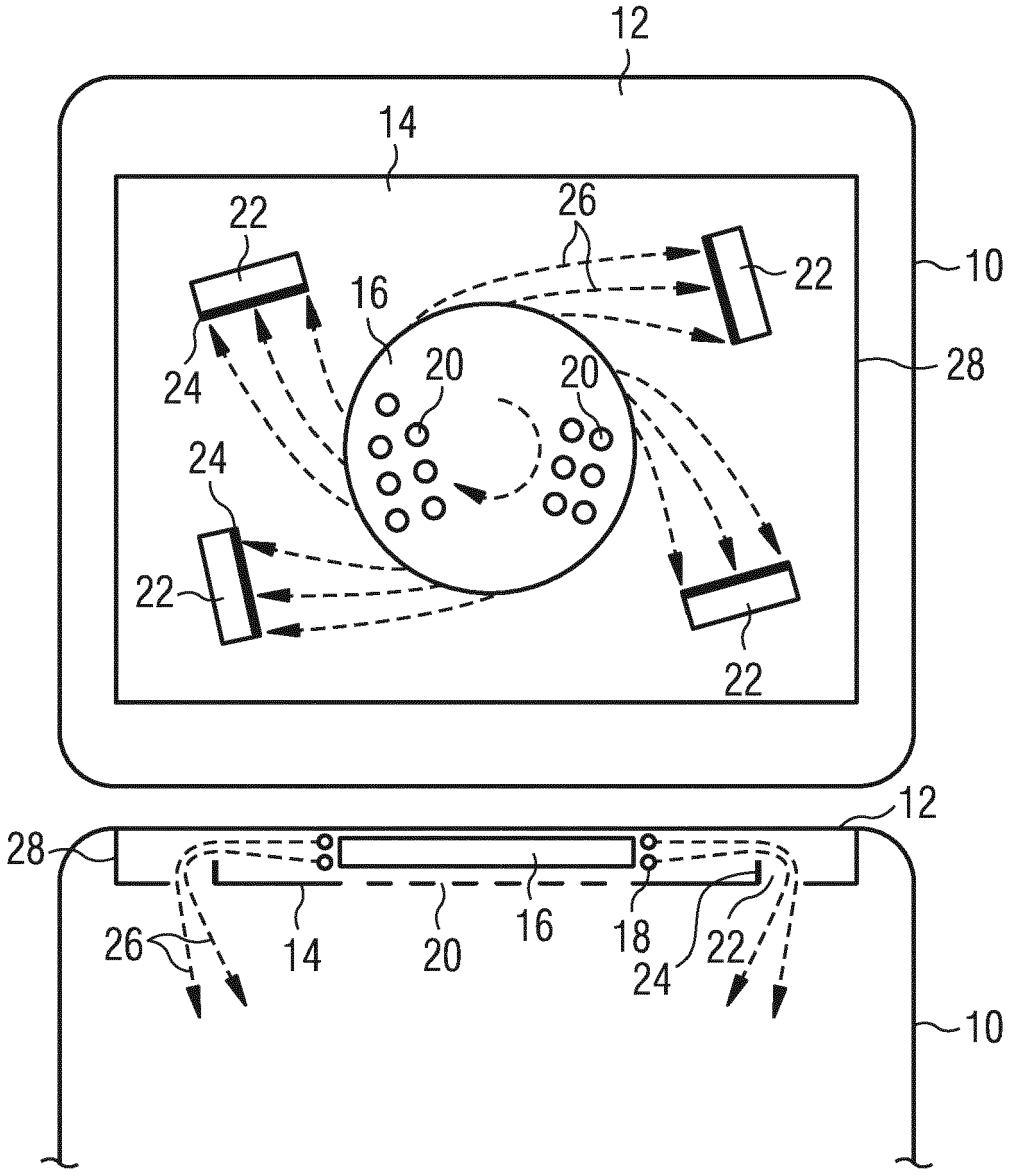


FIG 2

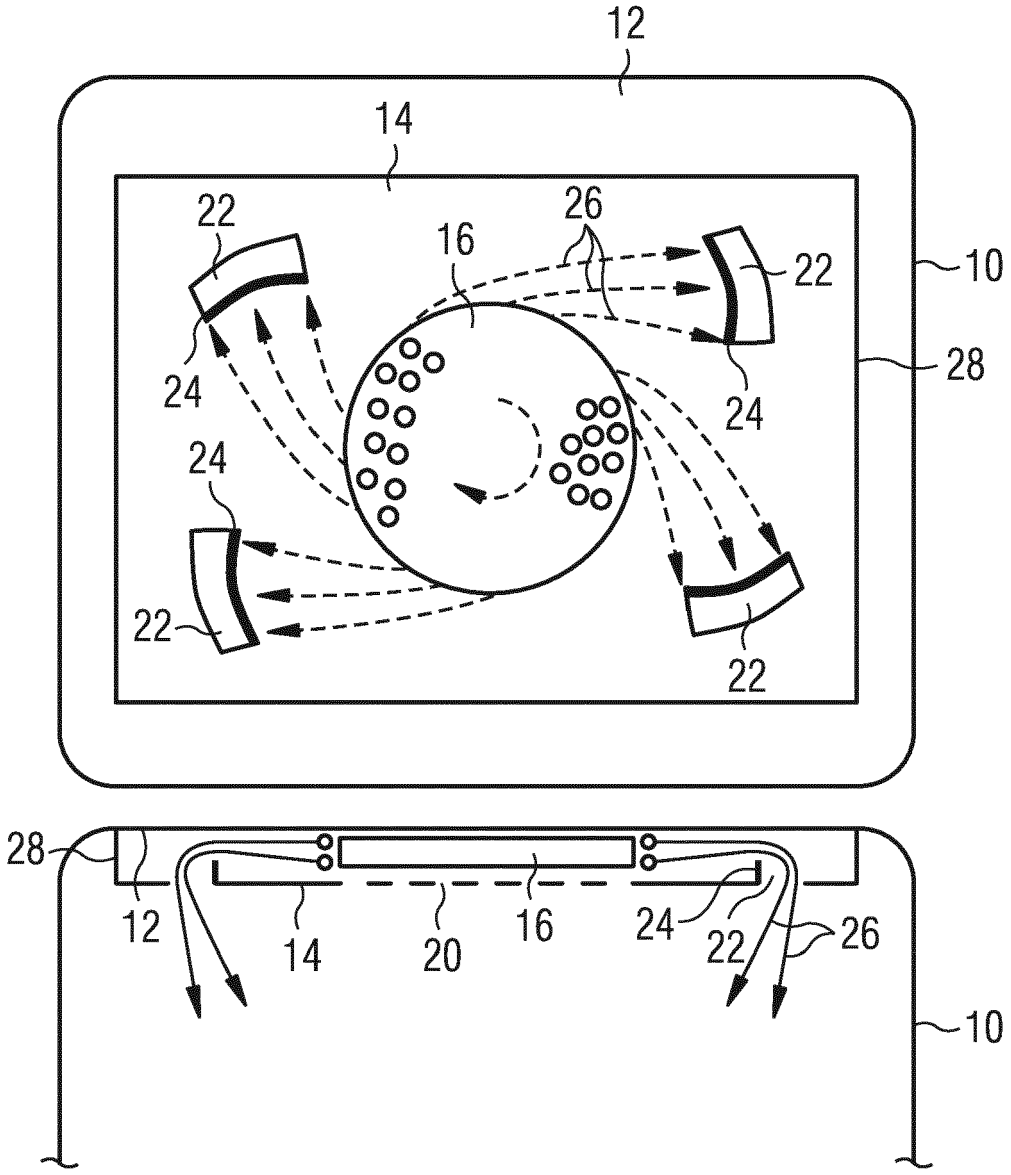


FIG 3

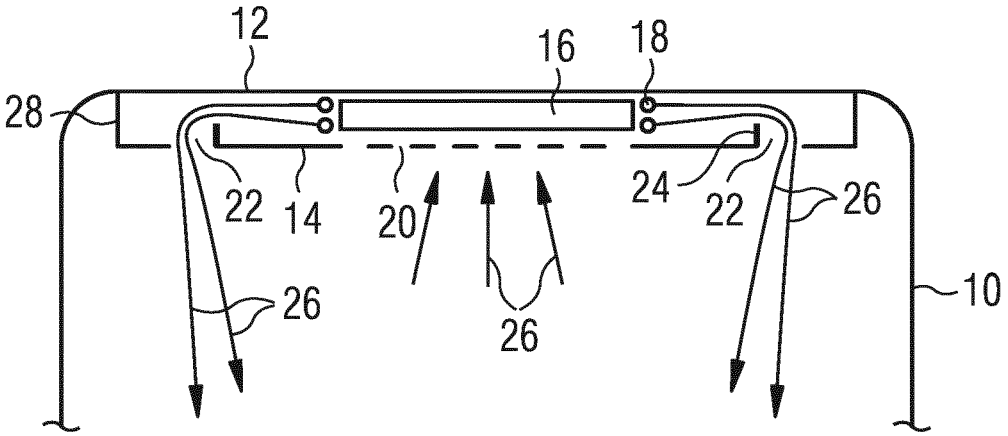


FIG 4

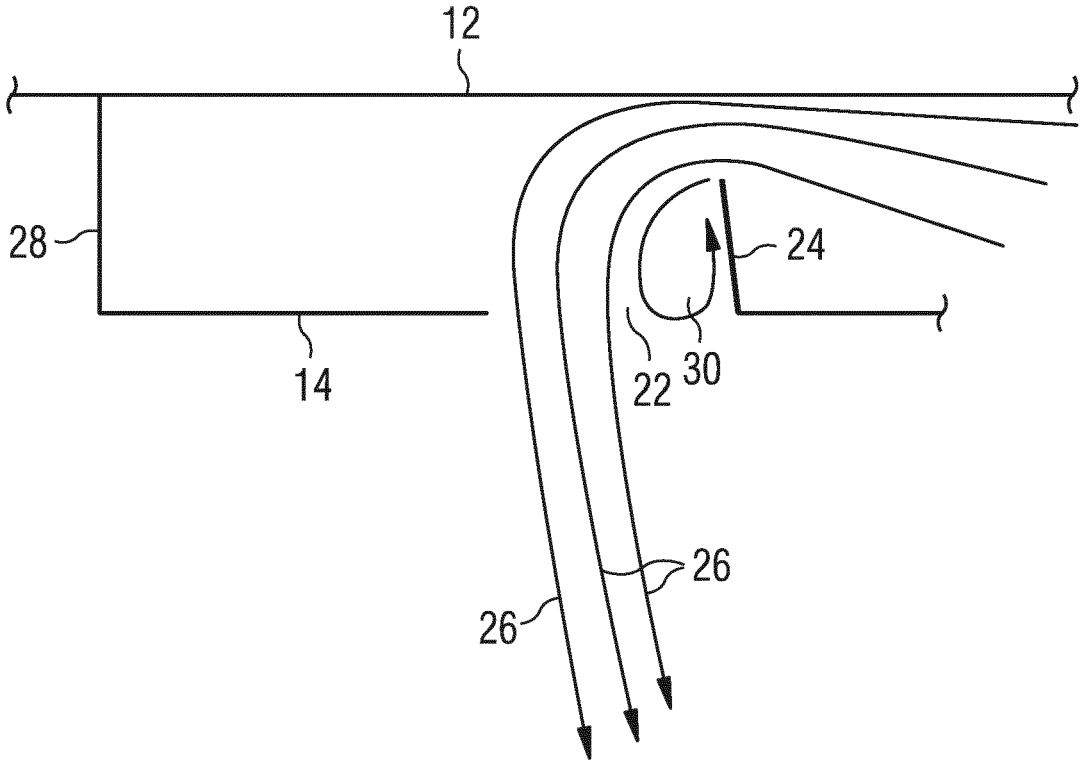


FIG 5

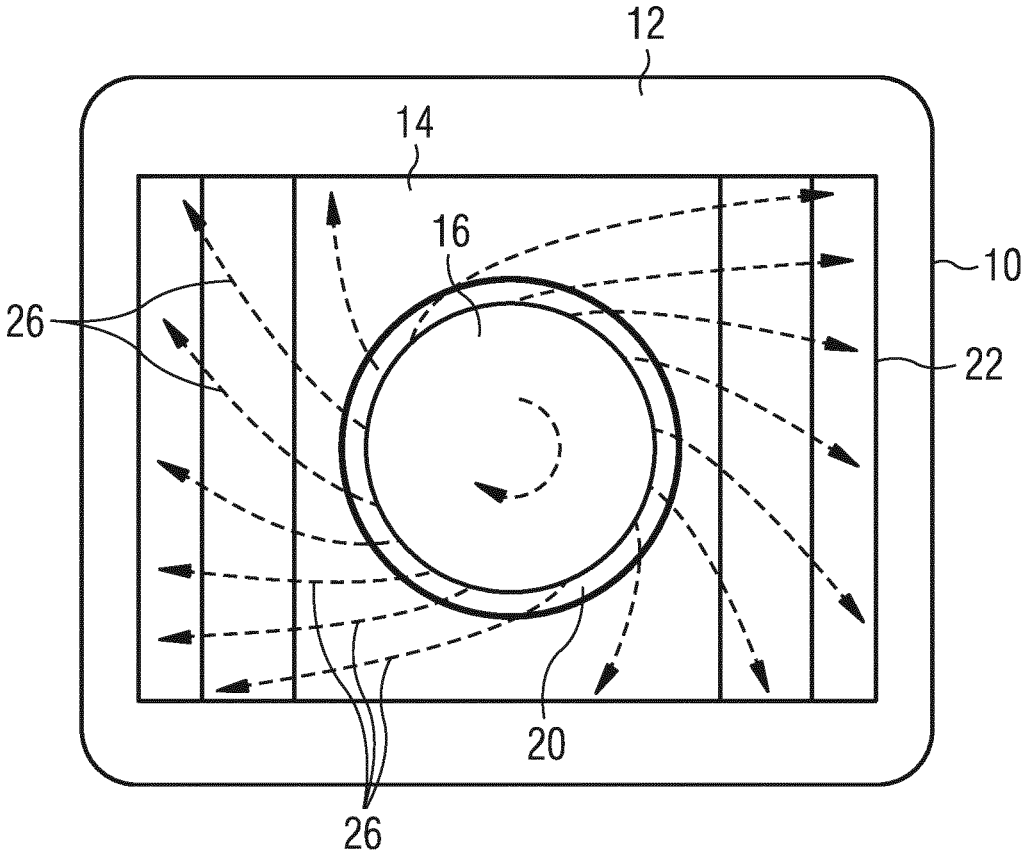
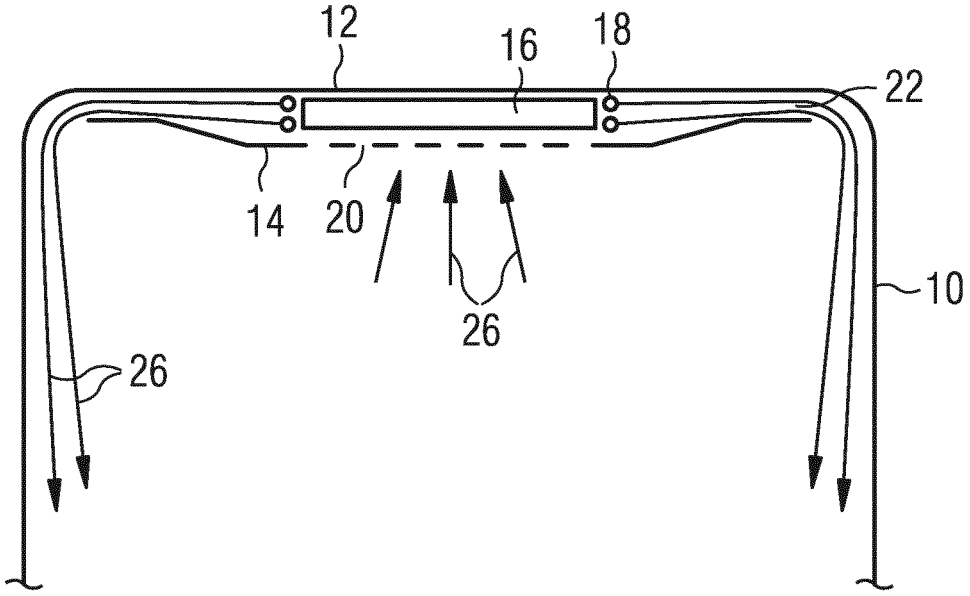


FIG 6



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EUROPEAN SEARCH REPORT

Application Number
EP 16 17 5624

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	7 September 2016	Jalal, Rashwan

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