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(54) **A cooking hob and a design frame for a cooking hob**

(57) The present invention relates to a cooking hob with a design frame (12) and at least one fastening element (20). The fastening element (20) is detachably or permanently attached or attachable at an outer portion of the cooking hob. The fastening element (20) is provided to attach the cooking hob at an inner side wall of a cutout (16) in a worktop (18) enclosing circumferentially said cooking hob. The design frame (12) encloses a top sheet (10) of the cooking hob in order to cover a gap between the inner side wall of a cutout (16) and the top sheet (10) of the cooking hob. The design frame (12) is made of a flexible material, so that the top sheet (10) and the worktop (18) can be arranged at different levels, wherein the top sides of the design frame (12), the top sheet (10) and the worktop (18) form substantially a continuous surface. Further, the present invention relates to an according design frame (12) for the cooking hob.

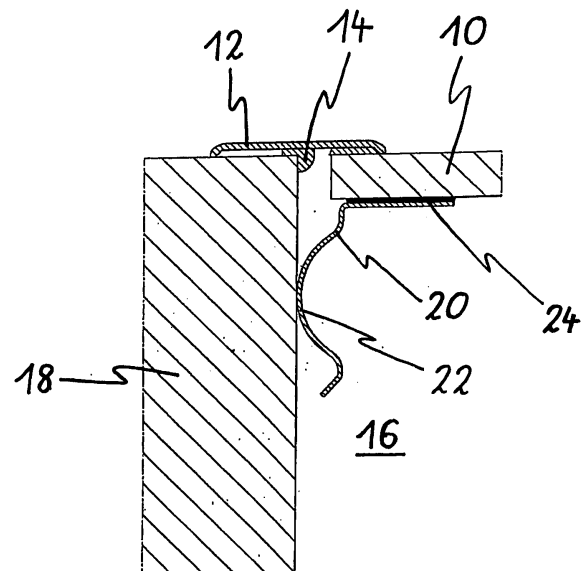


FIG 1

Description

[0001] The present invention relates to a cooking hob with a design frame according to the preamble of claim 1. Further, the present invention relates to a design frame according to the preamble of claim 7.

[0002] An installation cooking hob is arranged within a cutout of a worktop, wherein said worktop is arranged on a cabinet of a kitchen. The cooking hob is marginally smaller than the cutout of the worktop, so that there is a gap between the cooking hob and the cutout of the worktop. Said gap is covered by a frame, which may have additionally supporting and designing functions. The frame extends along the circumference of the cooking hob. Normally, the cooking hob is arranged at the same level as the worktop.

[0003] However, in some situations the cooking hob should be arranged at a level above or below the level of the worktop. These constellations require a frame around the cooking hob, which is adapted to the difference between the levels of the cooking hob and the worktop. Further, the frame has to be adapted to other geometric relations of the cooking hob and the cutout of the worktop. The adaptation of the frame requires a special construction for each individual cooking hob. This increases the complexity and costs of the installed cooking hob.

[0004] It is an object of the present invention to provide a cooking hob with a frame, which is installable at a level, which differs from the level of the worktop.

[0005] The object of the present invention is achieved by the cooking hob with the frame according to claim 1.

[0006] According to the present invention the design frame is made of a flexible material, so that the top sheet and the worktop can be arranged at different levels, wherein the top sides of the design frame, the top sheet and the worktop form substantially a continuous surface.

[0007] The main idea of the present invention is the use of the flexible design frame enclosing the top sheet. The design frame allows an installation of the cooking hob at different levels in relation to the level of the worktop.

[0008] According to the preferred embodiment of the present invention the design frame is detachably or permanently attached at the top sheet of the cooking hob. For example, the design frame is attached at the top sheet by an adhesive bond, by a snap-on connection and/or by a screw joint.

[0009] The design frame may comprise two or more frame elements. In this case the frame element encloses at least one further frame element. The frame elements are made of different materials. The frame elements may be made of different materials in order to obtain the designated properties at each position of the design frame.

[0010] Alternatively, the design frame is a one-piece part.

[0011] Preferably, the design frame comprises at least one sealing strip arranged at a bottom side of the design

frame. Thus, the design frame has also a sealing function. In this case, the sealing strip is provided to be pressed between the design frame and a top side of the worktop.

[0012] For example, the top sheet of the cooking hob may be a glass-ceramic panel. Thus, the glass-ceramic panel may be arranged at different levels.

[0013] Further, an upper portion of the fastening element is glued with the top sheet of the cooking hob. This allows a safe bonding with low costs.

[0014] In the preferred embodiment of the present invention the fastening element comprises a spring element in order to clamp the cooking hob within the cutout of the worktop. Since the fastening elements have the supporting functions, the design frame need not have any supporting functions.

[0015] The spring element has a U-shaped form and/or is formed as a leaf-spring.

[0016] The object of the present invention is further achieved by the design frame according to claim 7.

[0017] According to the present invention the design frame is made of a flexible material, so that the top sheet and the worktop can be arranged at different levels, wherein the top sides of the design frame, the top sheet and the worktop form substantially a continuous surface.

[0018] The flexible design frame enclosing the top sheet allows an installation of the cooking hob at different levels in relation to the level of the worktop.

[0019] The design frame may be detachably or permanently attachable at the top sheet. Preferably, the design frame is attachable at the top sheet by an adhesive bond, by a snap-on connection and/or by a screw joint.

[0020] In a special embodiment, the design frame may comprise two or more frame elements. In this case the frame element encloses at least one further frame element. The frame elements are made of different materials. The frame elements may be made of different materials in order to obtain the designated properties at each position of the design frame.

[0021] Alternatively, the design frame is a one-piece part.

[0022] Further, the design frame comprises at least one sealing strip arranged at a bottom side of the design frame. Thus, the design frame has also a sealing function. In this case, the sealing strip is provided to be pressed between the design frame and a top side of the worktop.

[0023] At last, the design frame is provided for and/or associated with the cooking hob as described above.

[0024] Novel and inventive features of the present invention are set forth in the appended claims.

[0025] The invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates a partial sectional side view of an outer portion of a cooking hob with a design frame and a fastening element installed within a cutout of a worktop according to a preferred embodiment of the present invention, wherein the cooking hob is arranged at the same level as

the worktop,

FIG 2 illustrates a partial sectional side view of the outer portion of the cooking hob with the design frame and the fastening element installed within the cutout of the worktop according to the preferred embodiment of the present invention, wherein the cooking hob is arranged at a level higher than the level of the worktop, and

FIG 3 illustrates a partial sectional side view of the outer portion of the cooking hob with the design frame and the fastening element installed within the cutout of the worktop according to the preferred embodiment of the present invention, wherein the cooking hob is arranged at a level lower than the level of the worktop.

[0026] FIG 1 illustrates a partial sectional side view of an outer portion of a cooking hob with a design frame 12 and a fastening element 20 installed within a cutout 16 of a worktop 18 according to a preferred embodiment of the present invention. In this case the cooking hob is arranged at the same level as the worktop 18.

[0027] The cooking hob includes a top sheet 10 and a casing, wherein the casing is not shown. The top sheet 10 forms the upper part of the cooking hob. Preferably, the top sheet 10 is a glass-ceramic panel. The casing forms the lower part of the cooking hob. The casing is attached at the bottom side of the top sheet 10. Usually, the casing has an open top side covered by the top sheet 10. The top sheet 10 is broader than the casing. Inside of the casing there are heating elements and electric and electronic circuitries.

[0028] The top sheet 10 of the cooking hob is attached with a plurality of fastening elements 20 in the cutout 16 of the worktop 18. FIG 1 shows one of said fastening elements 20. At the outer portion of the top sheet 10 the fastening elements 20 are attached. The fastening elements 20 may be detachably or permanently attached at the outer portion of the cooking top 10.

[0029] In this embodiment the fastening element 20 includes a spring element 22 and an upper portion 24. The spring element 22 forms the outer portion of the fastening element 20. In this example, the spring element 22 is formed as a leaf-spring and has a U-shaped form. The spring element 24 and the upper portion 24 of the fastening element 20 are a one-piece part. The spring element 22 allows that the top sheet 10 can be clamped into the cutout 16. The spring element 22 bears against the inner side wall of the cutout 16 of the worktop 18.

[0030] The upper portion 24 of the fastening element 20 is glued at the bottom side of the top sheet 10. Thus, the fastening element 20 is permanently connected to the top sheet 10.

[0031] The top sheet 10 of the cooking hob according to the present invention is marginally smaller than the cutout 16 of the worktop 18. Thus, the top sheet 10 of

the cooking hob is not in a direct contact with the inner side wall of the cutout 16.

[0032] The circumferential side of the top sheet 10 is enclosed by a design frame 12. The design frame 12 is provided for covering the gap between the top sheet 10 and the inner side wall of the cutout 16. The design frame 12 is detachably or permanently attached or attachable at the top sheet 10. The design frame 12 may be attached at the top sheet 10 by an adhesive bond, a screw joint and/or a snap-on connection. Several different design frames 12 may be provided for the top sheet 10 in order to allow an election between different designs.

[0033] On the bottom side of the design frame 12 there is sealing strip 14. The sealing strip 14 is provided to be pressed between the design frame 12 and the worktop 18. The design frame 12 has covering as well as sealing functions. The top sheet 10 is supported by the fastening elements 20. Thus, it is not necessary that the design frame 12 has any supporting functions.

[0034] The design frame 12 is made of a flexible material and bendable. Thus, the design frame 12 is able to countervail differences in the levels of the cooking hob and the worktop. In FIG 1 the top sides of the worktop 18 and the top sheet 10 are exact at the same level.

[0035] FIG 2 illustrates a partial sectional side view of the outer portion of the cooking hob with the design frame 12 and the fastening element 20 installed within the cutout 16 of the worktop 18 according to the preferred embodiment of the present invention. FIG 2 shows the cooking hob with the same elements as in FIG 1, which is installed in the cutout 16 of the worktop 18.

[0036] However, the cooking hob in FIG 2 is arranged at a level, which is higher than the level of the worktop 18. Thus, the top side of the worktop 18 is lower than the top side of the top sheet 10. The design frame 12 is made of the flexible material, so that the gap between the inner side wall of the cutout 16 and the top sheet 10 is completely covered. The top sides of the worktop 18, the design frame 12 and the top sheet 10 form a continuous surface. The sealing strip 14 is pressed against the worktop 18. FIG 2 shows that the higher level of the top sheet 10 can be adapted to the lower level of the worktop by simple means.

[0037] FIG 3 illustrates a partial sectional side view of the outer portion of the cooking hob with the design frame 12 and the fastening element 20 installed within the cutout 16 of the worktop 18 according to the preferred embodiment of the present invention, wherein the cooking hob is arranged at a level lower than the level of the worktop 18.

[0038] In FIG 3 the cooking hob is arranged at a level, which is lower than the level of the worktop 18. Thus, the top side of the worktop 18 is higher than the top side of the top sheet 10. Since the design frame 12 is made of the flexible material, the gap between the inner side wall of the cutout 16 and the top sheet 10 is completely covered. Also in this case, the top sides of the worktop 18, the design frame 12 and the top sheet 10 form a contin-

uous surface. FIG 3 shows that the lower level of the top sheet 10 can be adapted to the higher level of the worktop by simple means.

[0039] In the preferred embodiment of the present invention as illustrated in FIG 1 to FIG 3 the design frame 12 is formed as a one-piece part.

[0040] In an alternative embodiment of the present invention the design frame 12 can consist of two or more frame elements. In this case not all frame elements must be made of a flexible material. For example, an outer frame element may enclose one or more inner frame elements.

[0041] Further, several design frames 12 with different designs may be provided, so that the overall design of the cooking hob and/or the top sheet 10 can easily be varied. Additionally, the design element 12 may have a sealing function.

[0042] Although illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to those precise embodiments, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention. 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

[0043]

10	top sheet
12	design frame
14	sealing strip
16	cutout
18	worktop
20	fastening element
22	spring element
24	upper portion of the fastening element

Claims

1. A cooking hob with a design frame (12) and at least one fastening element (20), wherein
 - the fastening element (20) is detachably or permanently attached or attachable at an outer portion of the cooking hob,
 - the fastening element (20) is provided to attach the cooking hob at an inner side wall of a cutout (16) in a worktop (18) enclosing circumferentially said cooking hob, and
 - the design frame (12) encloses a top sheet (10) of the cooking hob in order to cover a gap between the inner side wall of the cutout (16) and the top sheet (10) of the cooking hob,

characterized in, that

the design frame (12) is made of a flexible material, so that the top sheet (10) and the worktop (18) can be arranged at different levels, wherein the top sides of the design frame (12), the top sheet (10) and the worktop (18) form substantially a continuous surface.

2. The cooking hob according to claim 1, **characterized in, that** the design frame (12) is detachably or permanently attached at the top sheet (10) of the cooking hob and/or the design frame (12) is attached at the top sheet (10) by an adhesive bond and/or the design frame (12) is attached at the top sheet (10) by a snap-on connection and/or that the design frame (12) is attached at the top sheet (10) by a screw joint.
3. The cooking hob according to any one of the preceding claims, **characterized in, that** the design frame (12) comprises frame elements, wherein in particular at least one frame element encloses at least one further frame element and/or the frame elements are made of different materials.
4. The cooking hob according to any one of the preceding claims, **characterized in, that** the design frame (12) comprises at least one sealing strip (14) arranged at a bottom side of the design frame (12), wherein in particular the sealing strip (14) is provided to be pressed between the design frame (12) and a top side of the worktop (18).
5. The cooking hob according to any one of the preceding claims, **characterized in, that** the top sheet (12) of the cooking hob (10) is a glass-ceramic panel and/or an upper portion (24) of the fastening element (20) is glued with the top sheet (10) of the cooking hob.
6. The cooking hob according to any one of the preceding claims, **characterized in, that** the fastening element (22) comprises a spring element (22) in order to clamp the cooking hob within the cutout (16) of the worktop (18), wherein in particular the spring element (22) has a U-shaped form and/or the spring element (22) is a leaf-spring.
7. A design frame for a cooking hob attached or attachable within a cutout (16) of a worktop (18) at an inner side wall of said cutout (16) by at least one fastening

element (22), wherein the design frame (12) is provided to enclose a top sheet (10) of the cooking hob in order to cover a gap between the inner side wall and the top sheet (10) of the cooking hob,

characterized in, that

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the design frame (12) is made of a flexible material, so that the top sheet (10) and the worktop (18) can be arranged at different levels, wherein the top sides of the design frame (12), the top sheet (10) and the worktop (18) form substantially a continuous surface.

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8. The design frame according to claim 7,

characterized in, that

the design frame (12) is detachably or permanently attachable at the top sheet (10) and/or

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that the design frame (12) is attachable at the top sheet (10) by an adhesive bond and/or

that the design frame (12) is attachable at the top sheet (10) by a snap-on connection and/or

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that the design frame (12) is attachable at the top sheet (10) by a screw joint.

9. The design frame according to any one of the claims 7 to 8,

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characterized in, that

the design frame (12) comprises frame elements, wherein in particular at least one frame element encloses at least one further frame element and/or

the frame elements are made of different materials.

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10. The design frame according to any one of the claims 7 to 9,

characterized in, that

the design frame (12) comprises at least one sealing strip (14) arranged at a bottom side of the design frame (12),

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wherein in particular the sealing strip (14) is provided to be pressed between the design frame (12) and a top side of the worktop (18).

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11. The design frame according to any one of the claims 7 to 10,

characterized in, that

the design frame (12) is provided for and/or associated with the cooking hob according to any one of the claims 1 to 6.

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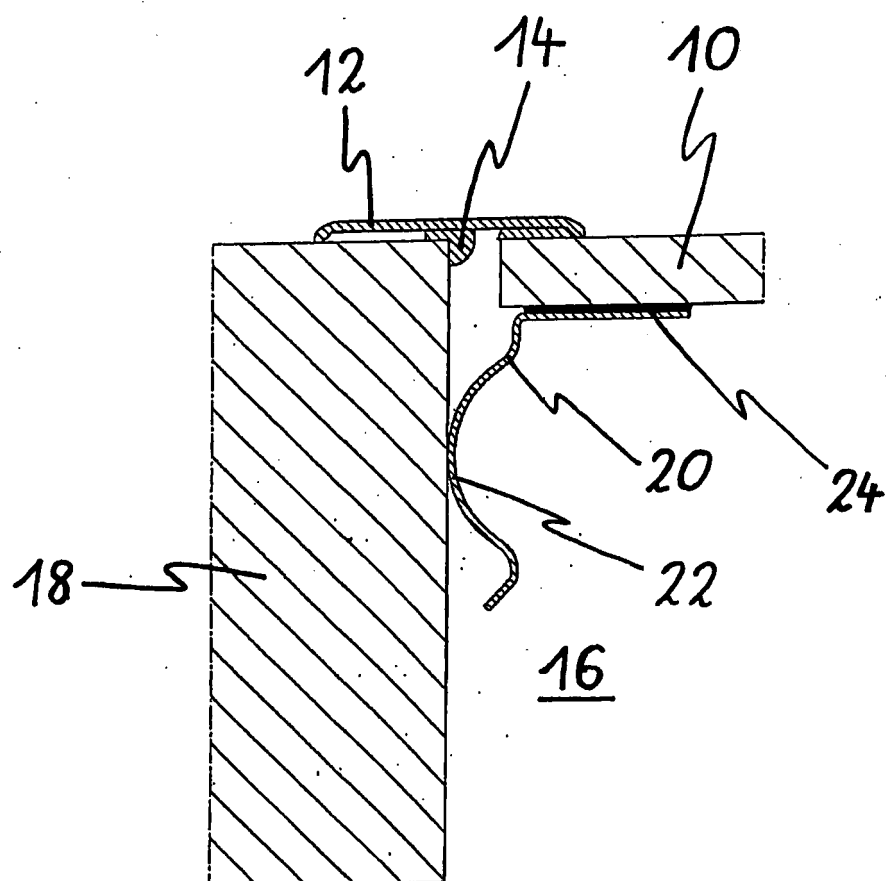


FIG 1

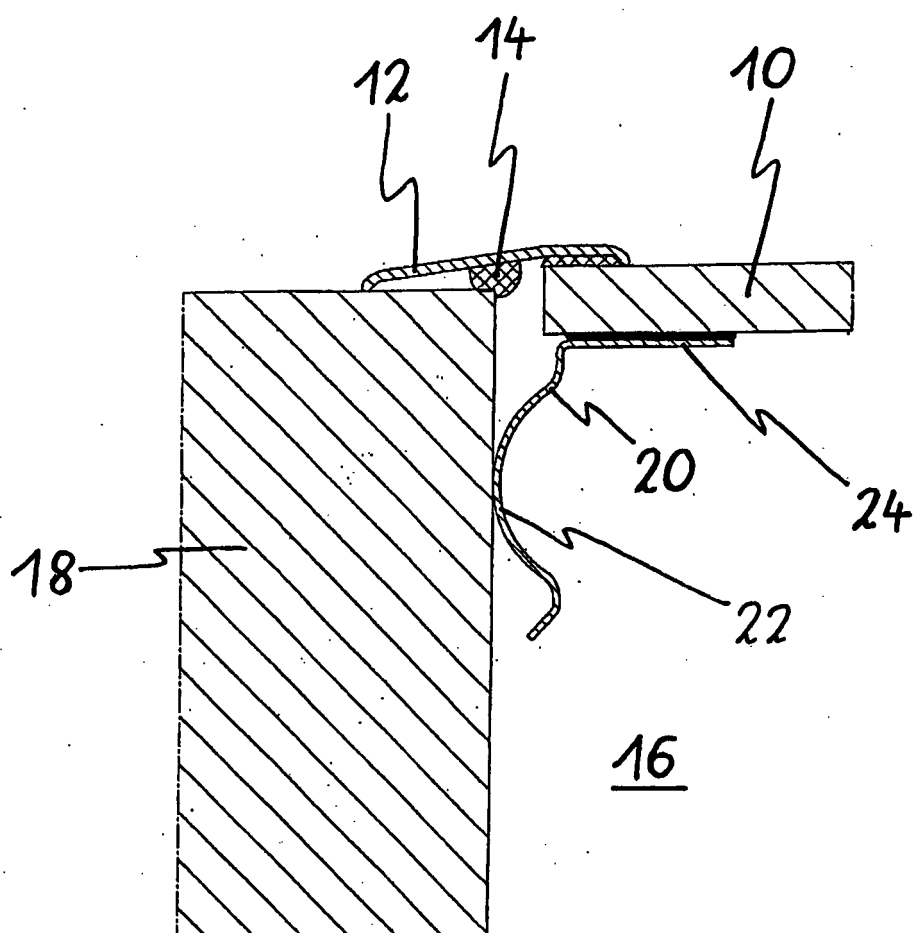


FIG 2

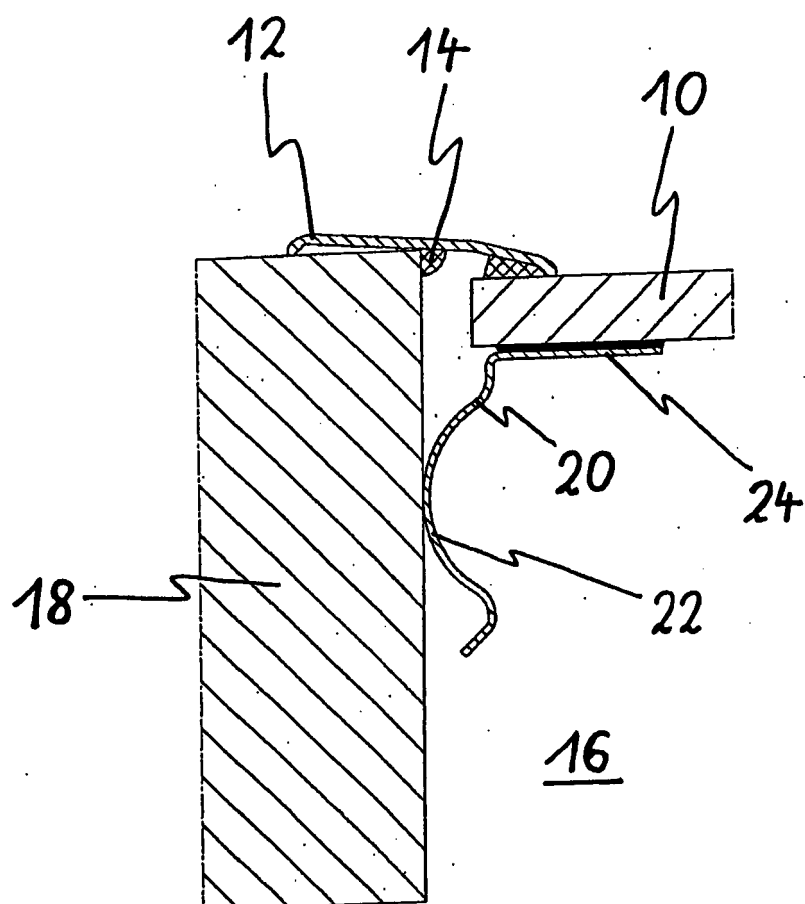


FIG 3



EUROPEAN SEARCH REPORT

Application Number
EP 08 00 7560

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F24C
Place of search		Date of completion of the search	Examiner
The Hague		8 January 2009	Verdoodt, Luk
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 08 00 7560

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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