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(54) **A cooking hob and a distance element for a cooking hob**

(57) The present invention relates to a cooking hob (10) with at least one fastening element (22). The fastening element (22) is detachably or permanently attached or attachable at an outer portion of the cooking hob (10). The fastening element (22) comprises at least one spring element (24) acting outwardly into a substantially horizontal direction in order to clamp the cooking hob (10) within a cutout (18) enclosing circumferentially said cooking hob (10). At least one distance element (30) is detachably or permanently attachable at an inner side wall of the cutout (18), so that the spring element (24) bears against the distance element (30) in a mounted state of the cooking hob (20). Further, the present invention relates to an according distance element for the cooking hob (10).

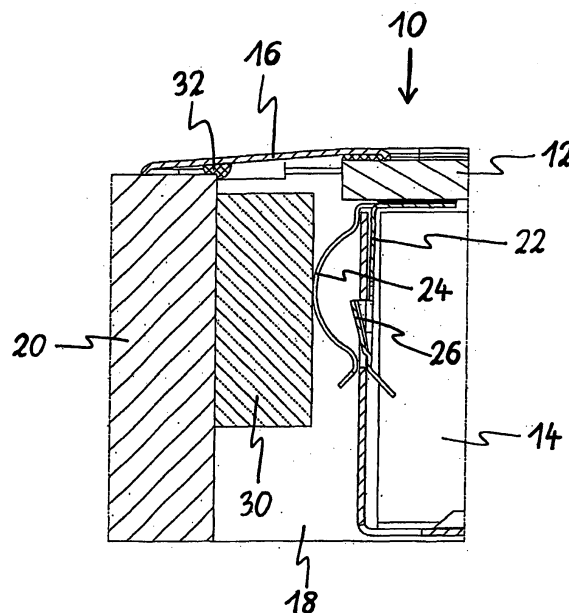


FIG 2

Description

[0001] The present invention relates to a cooking hob with at least one fastening element according to the preamble of claim 1. Further, the present invention relates to a distance element according to the preamble of claim 7.

[0002] An installation cooking hob is arranged within a cutout of a worktop. Typically, said worktop is arranged on a cabinet of a kitchen. Before such a cooking hob can be installed, the worktop has to be cut. Thereby the size of the cutout is adapted to the size of the cooking hob. Usually, the size of the cutout is marginally bigger than the contour of a lower part of the cooking hob.

[0003] However, different cooking hobs may have different sizes. When an old cooking hob has to be replaced by a new cooking hob of another type, then the cutout is possibly not matched with said new cooking hob. If the cutout is too small, then said cutout can be made bigger by sawing without any problems. But if the cutout is too big, then the cooking hob cannot be installed within said cutout.

[0004] It is an object of the present invention to provide a cooking hob, which is installable in a cutout bigger than said cooking hob. It is a further object of the present invention to provide a device, which allows the installation of the cooking hob in the cutout bigger than said cooking hob.

[0005] In the case of the cooking hob the object of the present invention is achieved by the cooking hob according to claim 1.

[0006] According to the present invention at least one distance element is detachably or permanently attachable at an inner side wall of the cutout, so that the spring element bears against the distance element in a mounted state of the cooking hob.

[0007] The main idea of the present invention is the use of the distance elements in order to overcome the distance between the cooking hob and the inner side wall of the cutout. Said distance elements are arranged at one or more inner side walls of the cutout. The distance element itself is very simple construction. However, the arrangement of the distance elements at the inner side wall of the cutout allows the installation of the cooking hob with a size substantially smaller than the size of the cutout. The distance element is associated with at least one fastening element on a side wall of the cooking top. At its position the distance element makes the cross section of the cutout smaller.

[0008] For example, the distance element is composed of a variable number of partial elements, so that the distance element is adapted or adaptable to the gap between the spring element and the inner side wall of the cutout. An appropriate number of partial elements can be composed in order to obtain an adapted distance element.

[0009] Alternatively an ensemble of distance elements with equal as well as different sizes is provided. Thus, a

suitable set of distance elements can be selected in order to adapt the cutout to the cooking hob.

[0010] Further, the distance element and/or the partial elements, respectively, are formed at least partially as massive elements. The massive elements can be produced with low costs.

[0011] For example, the distance element and/or the partial elements, respectively, are attached or attachable at the inner side wall of the cutout by an adhesive bond.

[0012] Alternatively or additionally, the distance element and/or the partial elements, respectively, are attached or attachable at the inner side wall of the cutout by a screw joint.

[0013] The distance element and/or the partial elements, respectively, are made of metal, plastics, wood or a combination of them.

[0014] In order to cover the gap between the cooking hob and the inner side walls of the cutout, the cooking hob may comprise a design frame enclosing circumferentially a top sheet of said cooking hob.

[0015] Further, the design frame as well as an outer portion of the top sheet may be provided for covering the gap between the cooking hob and the inner side walls of the cutout.

[0016] The design frame is detachably or permanently attached or attachable at the top sheet. Preferably, the design frame is attached at the top sheet by an adhesive bond, a screw joint and/or a snap-on connection. Several design frames may be provided for the cooking hob in order to allow an election between different designs.

[0017] In the preferred embodiment of the present invention the design frame comprises at least one sealing strip arranged at a bottom side of the design frame. For example, the sealing strip is provided to be pressed between the design frame and a top side of the worktop. Thus, the design frame has covering as well as sealing functions.

[0018] Preferably, the spring element has a U-shaped form and/or is formed as a leaf-spring. This is a simple and effective construction.

[0019] For example, the top sheet of the cooking hob is a glass-ceramic panel.

[0020] In a special embodiment, the fastening element is additionally provided for joining the top sheet and a casing of the cooking hob. Such a fastening element with a double function reduces the number of the parts of the cooking hob.

[0021] For example, an upper portion of the fastening element may be glued with the top sheet of the cooking hob. Further, the fastening element may be connected to the casing of the cooking hob by a latch element. Preferably, the latch element is a part of the fastening element. This allows a simple production of the fastening element.

[0022] In the case of the device the object of the present invention is achieved by the distance element according to claim 7.

[0023] According to present invention the distance el-

ement is detachably or permanently attachable at an inner side wall of the cutout, so that the spring element bears against the distance element in a mounted state of the cooking hob.

[0024] The main idea of the present invention is the distance elements for bridging the gap between the cooking hob and the inner side wall of the cutout. Said distance elements may be arranged at one or more inner side walls of the cutout. The distance element of the present invention itself is very simple construction. However, the arrangement of said distance element at the inner side of the cutout allows the installation of the cooking hob with a size substantially smaller than the size of the cutout. The distance element is associated with at least one fastening element at an outer portion of the cooking top. At its position the distance element makes the cross section of the cutout smaller.

[0025] For example, the distance element is composed of a variable number of partial elements, so that the distance element is adapted or adaptable to the gap between the spring element and the inner side wall of the cutout. An appropriate number of partial elements can be composed in order to obtain a distance element, which is adapted to the gap.

[0026] In alternative embodiment of the present invention a set of distance elements is provided, wherein said distance elements have partially different sizes. Thus, a suitable set of distance elements can be selected in order to adapt the cutout to the cooking hob.

[0027] Further, the distance element and/or the partial elements, respectively, may be formed at least partially as massive elements. The massive elements can be produced with low costs.

[0028] The distance element and/or the partial elements, respectively, may be attached or attachable at the inner side walls of the cutout by an adhesive bond.

[0029] Alternatively or additionally, the distance element and/or the partial elements, respectively, are attached or attachable at the inner side walls of the cutout by one or more screw joints.

[0030] For example, the distance element and/or the partial elements, respectively, may be made of metal, plastics, wood or a combination of them.

[0031] In particular, the partial elements are joint or joinable together by a snap-on mechanism. This allows a simple and fast installation of the cooking hob.

[0032] At last the distance element and/or the partial elements, respectively, are provided for and/or associated with the cooking hob as described above.

[0033] The novel and inventive features believed to be the characteristic of the present invention are set forth in the appended claims.

[0034] The invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates a sectional side view of an outer portion of a cooking hob with a fastening element installed within a cutout of a worktop according

to a preferred embodiment of the present invention,

FIG 2 illustrates a sectional side view of an outer portion of a cooking hob with a fastening element and a distance element installed within a cutout of a worktop according to a preferred embodiment of the present invention, and

FIG 3 illustrates a schematic diagram of a top view of the cooking hob according to the preferred embodiment of the present invention.

[0035] FIG 1 illustrates a sectional side view of an outer portion of a cooking hob 10 with a fastening element 22 installed within a cutout 18 of a worktop 20 according to a preferred embodiment of the present invention. The cooking hob 10 is attached with a plurality of fastening elements 22 in the cutout 18 of the worktop 20. In FIG 1 only one fastening element 22 is shown.

[0036] The cooking hob 10 of the present invention is substantially smaller than the cutout 18 of the worktop 20. Thus, the fastening elements 22 on at least one side of the cooking hob 10 are not in a direct contact with the inner side wall of the cutout 18. FIG 1 shows such a position of the cooking hob 10, where the fastening element 22 is in a direct contact with the inner side wall of the cutout 18.

[0037] The cooking hob 10 includes a top sheet 12 and a casing 14. The top sheet 12 forms the upper part of the cooking hob 10. For example, the top sheet 12 is a glass-ceramic panel. The casing 14 forms the lower part of the cooking hob 10. For example, the casing 14 is made of steel panel. Usually, the casing 14 has an open top side covered by the top sheet 12. Inside of the casing 14 there are heating elements and electric and electronic circuitries.

[0038] The circumferential side of the top sheet 12 is enclosed by a design frame 16. The design frame 16 is provided for covering the gap between the cooking hob 10 and the inner side wall of the cutout 18. The design frame 16 is detachably or permanently attached or attachable at the top sheet 12. The design frame 16 may be attached at the top sheet 12 by an adhesive bond, a screw joint and/or a snap-on connection. Several different design frames 16 may be provided for the cooking hob 10 in order to allow an election between different designs.

[0039] On the bottom side of the design frame 16 there is sealing strip 32. The sealing strip 32 is provided to be pressed between the design frame 16 and a top side of the worktop 20. The design frame 16 has covering as well as sealing functions. Since the cooking hob 10 is supported by the fastening elements 22, it is not necessary that the design frame 16 has any supporting functions.

[0040] The cooking hob 10 is arranged within the cutout 18 of the worktop 20. At the outer portion of the cook-

ing top 10 the fastening elements 22 are attached. The fastening element 22 may be detachably or permanently attached at the outer portion of the cooking top 10.

[0041] The fastening element 22 comprises a spring element 24. The spring element 24 forms an outer portion of the fastening element 22. In this example, the spring element 24 has a U-shaped form and is formed as a leaf-spring. The fastening element 22 and the spring element 24 are a one-piece part. The spring element 24 allows that the cooking hob 10 can be clamped into the cutout 18. The spring element 24 bears against the inner side wall of the cutout 18 of the worktop 20.

[0042] In this example, the fastening element 22 is additionally provided for joining the top sheet 12 and the casing 14 of the cooking hob 10. An upper portion 28 of the fastening element 22 is glued at the bottom side of the top sheet 12. A latch element 26 is engaged in the casing 14 of the cooking hob 10. Thus, the fastening element 22 is permanently connected to the top sheet 12 and detachably connected to the casing 14.

[0043] FIG 2 illustrates a schematic diagram of a sectional side view of the outer portion of the cooking hob 10 with the fastening element 22 and a distance element 30 installed within the cutout 18 of the worktop 20 according to the preferred embodiment of the present invention. The cooking hob 10 in FIG 2 is identical with the cooking hob 10 in FIG 1. The cooking hob 10 comprises also the top sheet 12, the casing 14, the fastening element 22 with the spring element 24 and the design frame 16 with the sealing strip 32.

[0044] Unlike FIG 1 the distance element 30 is attached at the inner side wall of the cutout 18 in FIG 2. The distance element 30 is arranged between the spring element 24 and the inner side wall of the cutout 18. Thus, the spring element 24 bears against the distance element 30. The distance element 30 allows that the cooking hob 10 can be clamped into the cutout 18, wherein the cross section of the cooking hob 10 is substantially smaller than the cross section of the cutout 18.

[0045] The distance element 30 is attached at the inner side wall of the cutout 18 by an adhesive bond and/or a screw joint. In this example, the distance element 30 is a one-piece part. Alternatively, the distance element 30 may be composed of several partial elements. In the latter case the distance element 30 is adapted by a combination of several partial elements. Said partial element may have equal and/or different sizes.

[0046] FIG 3 illustrates a schematic diagram of a top view of the cooking hob 10 according to the preferred embodiment of the present invention. The design frame 16 encloses the circumferential side of the top sheet 12 of the cooking hob 10. The design frame 16 is directly fixed at the top sheet 12.

[0047] In particular, the design frame 16 is provided for covering the outer portions of the cutout. Since only the fastening elements 22 and the distance elements 30 support the cooking hob 10 within the cutout 18, the design frame 16 need not have any supporting purposes.

[0048] Further, several design frames 16 with different designs may be provided, so that the overall design of the cooking hob 10 can easily be varied. Additionally, the design element 16 may have a sealing function.

[0049] The distance element 30 according to the present invention allows a simple and fast installation of the cooking hob 10 within the cutout 18 of the worktop 20, wherein the size of the cooking hob 10 is substantially smaller than the size of the cutout 18.

[0050] In an alternative embodiment the design frame 16 is an integral part of the top sheet 12. In this case, the top sheet 12 and the design frame 16 may form a one-piece part, which covers completely the cutout 18 of the worktop 20. The circumference of the casing 14 may be substantially smaller than the circumference of the top sheet 12 with the integrated design frame 16.

[0051] Although illustrative embodiments of the present invention have been described herein with reference to the accompanying drawing, 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

[0052]

10 cooking hob

12 top sheet

14 casing

16 design frame

18 cutout

20 worktop

22 fastening element

24 spring element

26 latch element

28 upper portion of the fastening element

30 distance element

32 sealing strip

Claims

1. A cooking hob (10) with at least one fastening element (22), wherein

- the fastening element (22) is detachably or permanently attached or attachable at an outer portion of the cooking hob (10), and
 - the fastening element (22) comprises at least one spring element (24) acting outwardly into a substantially horizontal direction in order to clamp the cooking hob (10) within a cutout (18) of a worktop (20) enclosing circumferentially said cooking hob (10),

characterized by

at least one distance element (30) detachably or permanently attachable at an inner side wall of the cutout (18), so that the spring element (24) bears against the distance element (30) in a mounted state of the cooking hob (20).

2. The cooking hob according to claim 1, **characterized in, that**

the distance element (30) is composed of a variable number of partial elements, so that the distance element (30) is adapted or adaptable to the gap between the spring element (24) and the inner side wall of the cutout (18)

and/or

that the distance element (30) and/or the partial elements, respectively, are formed at least partially as massive elements

and/or

that the distance element (30) and/or the partial elements, respectively, are attached or attachable at the inner side wall of the cutout (18) by an adhesive bond and/or by at least one screw joint

and/or

that the distance element (30) and/or the partial elements, respectively, are made of metal, plastics, wood or a combination of them.

3. The cooking hob according to any one of the preceding claims,

characterized in, that

the cooking hob (10) comprises a design frame (16) enclosing circumferentially a top sheet (12) of said cooking hob (10)

and/or

that the design frame (16) and/or an outer portion of the top sheet (12) are provided for covering a gap between the cooking hob (10) and the inner side wall of the cutout (18)

and/or

that the design frame (16) is detachably or permanently attached or attachable at the top sheet (12), in particular by an adhesive bond, a screw joint

and/or a snap-on connection.

4. The cooking hob according to claim 3, **characterized in, that**

the design frame (16) comprises at least one sealing strip (32) arranged at a bottom side of the design frame (16), wherein the sealing strip (32) is in particular provided to be pressed between the design frame (16) and a top side of the worktop (20).

5. The cooking hob according to any one of the preceding claims,

characterized in, that

the spring element (24) has a U-shaped form and/or that the spring element (24) is a leaf-spring and/or the top sheet (12) of the cooking hob (10) is a glass-ceramic panel.

6. The cooking hob according to any one of the claims 1 to 5,

characterized in, that

the fastening element (22) is additionally provided for joining the top sheet (12) and a casing (14) of the cooking hob (10)

and/or

that an upper portion (28) of the fastening element (22) is glued with the top sheet (12) of the cooking hob (10)

and/or

that the fastening element (22) is connected to the casing (14) of the cooking hob (10) by a latch element (26), the latch element (26) in particular being a part of the fastening element (22).

7. A distance element (30) provided for or associated with a cooking hob (10), wherein

- the cooking hob (10) comprises at least one fastening element (22),

- the fastening element (22) is detachably or permanently attached or attachable at an outer portion of the cooking hob (10), and

- the fastening element (22) comprises at least one spring element (24) acting outwardly into a substantially horizontal direction in order to clamp the cooking hob (10) within a cutout (18) of a worktop (20) enclosing circumferentially said cooking hob (10),

characterized in that,

the distance element (30) is detachably or permanently attachable at an inner side wall of the cutout (18), so that the spring element (24) bears against the distance element (30) in a mounted state of the cooking hob (20).

8. The distance element according to claim 7, **characterized in, that**

the distance element (30) is composed of a variable number of partial elements, so that the distance element (30) is adapted or adaptable to the gap between the spring element (24) and the inner side wall of the cutout (18).

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9. The distance element according to claim 7 or 8, **characterized in, that**

the distance element (30) and/or the partial elements, respectively, are formed at least partially as massive elements

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and/or

that the distance element (30) and/or the partial elements, respectively, are attached or attachable at the inner side wall of the cutout (18) by an adhesive bond and/or by at least one screw joint

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and/or

that the distance element (30) and/or the partial elements, respectively, are made of metal, plastics, wood or a combination of them

20

and/or.

that the partial elements are joint or joinable together by a snap-on mechanism.

10. The distance element according to any one of the claims 7 to 9,

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characterized in, that

the distance element (30) is provided for and/or associated with the cooking hob according to any one of the claims 1 to 6.

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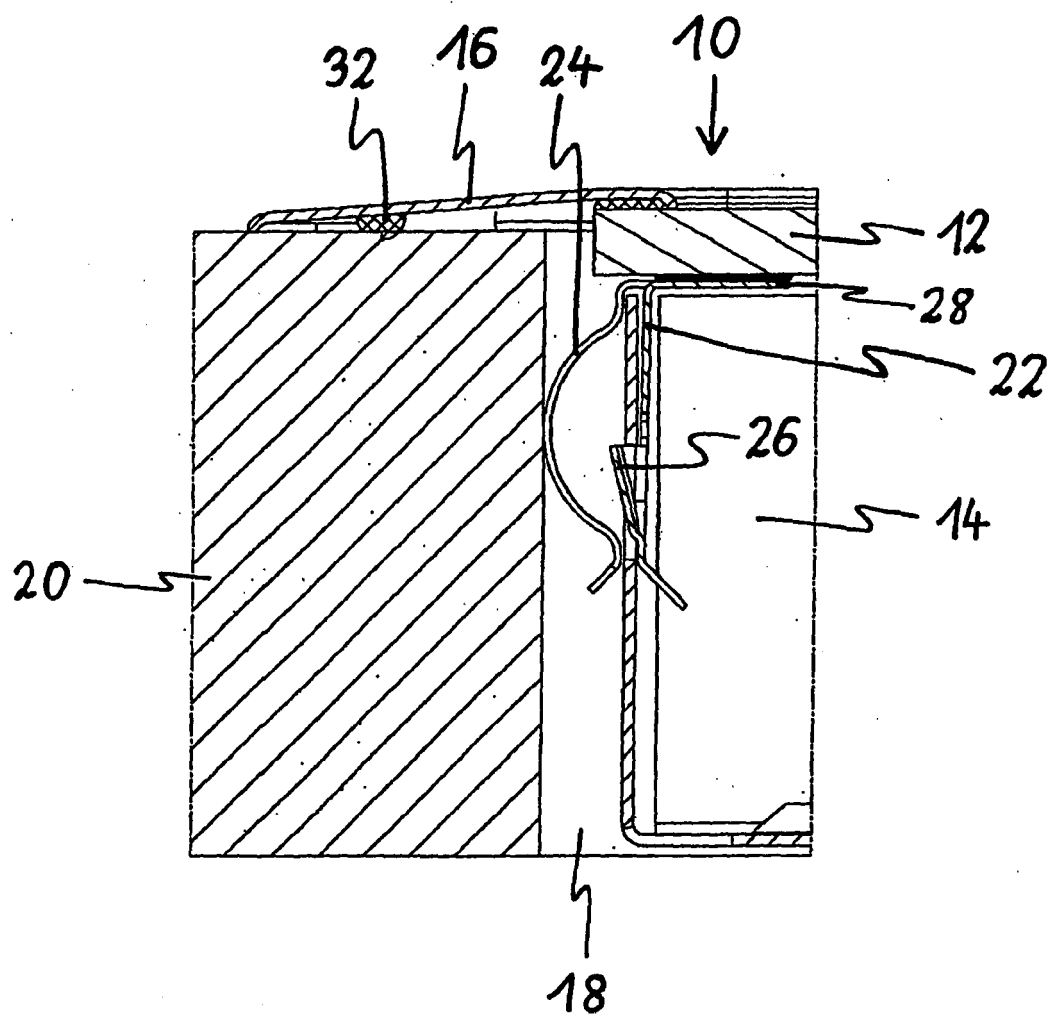


FIG 1

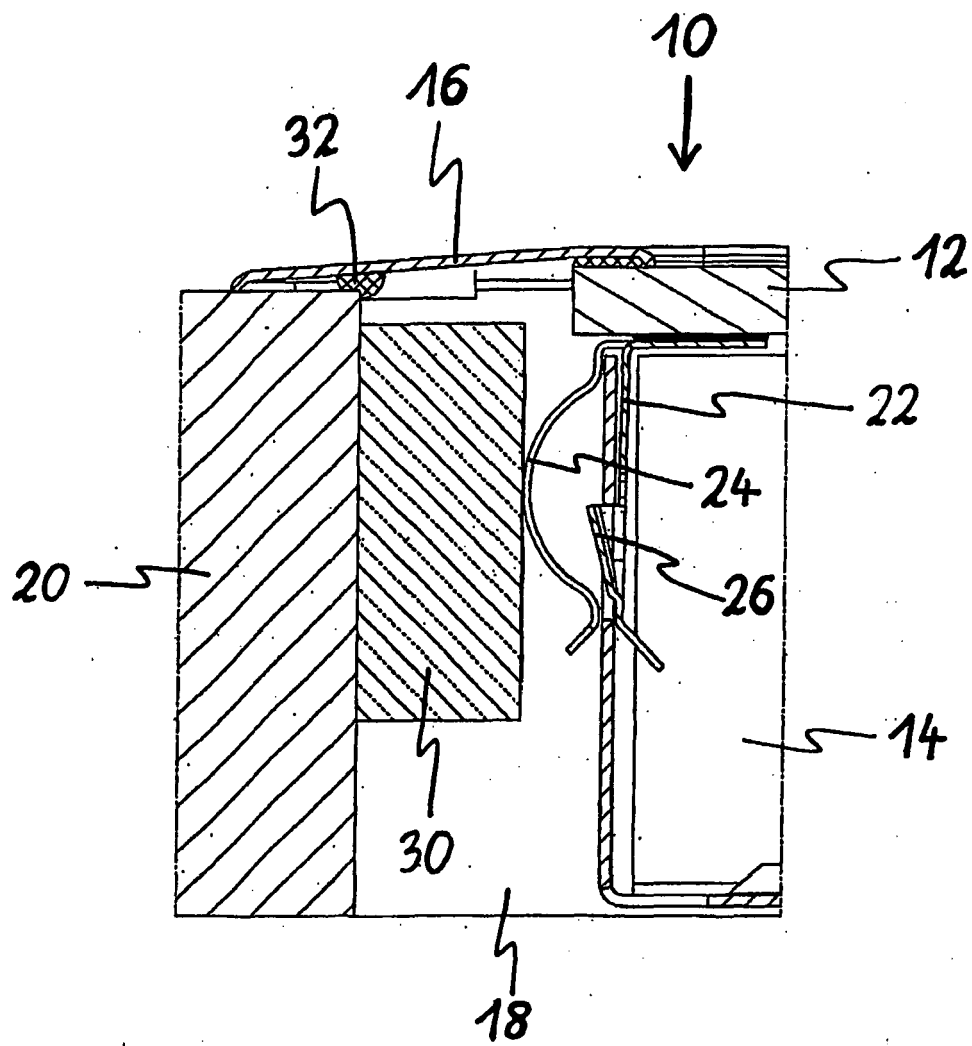


FIG 2

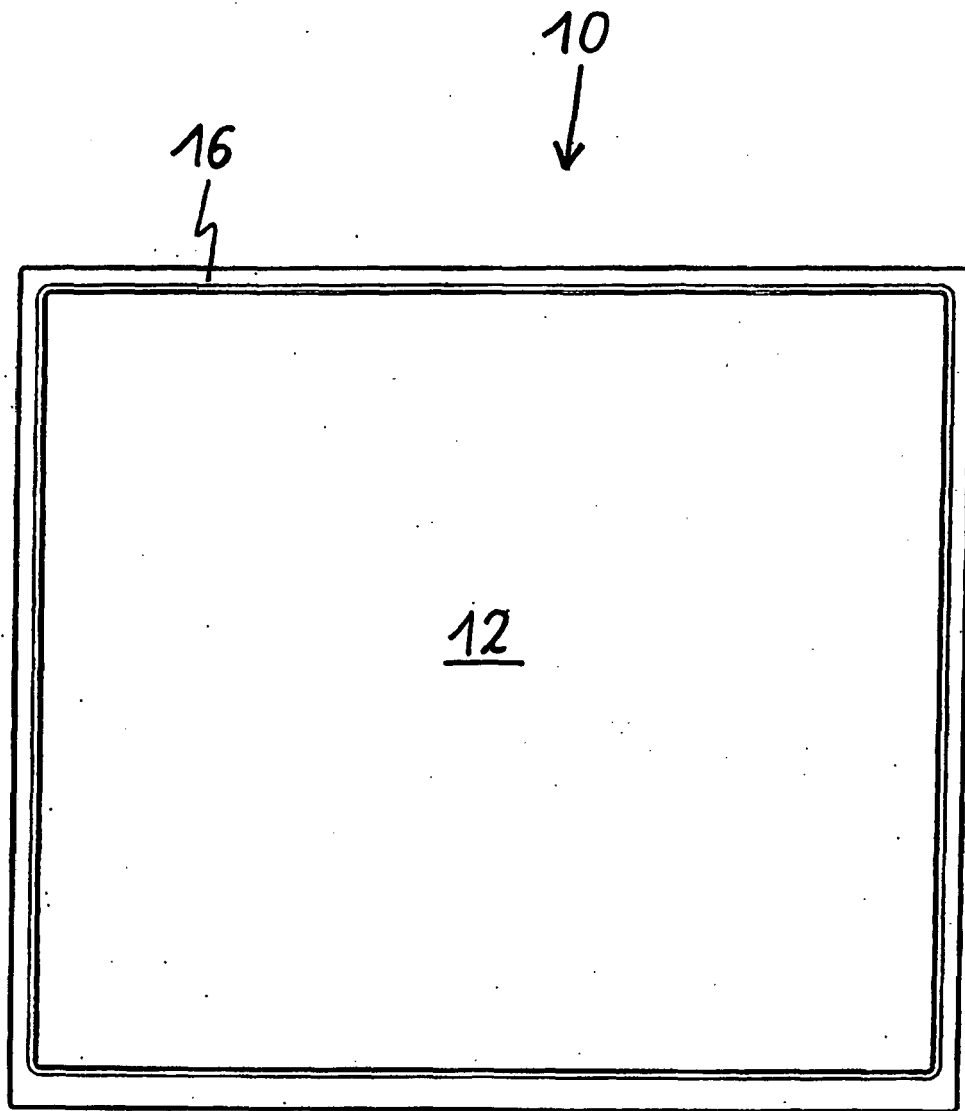


FIG 3



EUROPEAN SEARCH REPORT

Application Number
EP 08 00 7558

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 January 2009	Examiner Rodriguez, Alexander
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 7558

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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