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

(11) EP 2 116 775 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
17.10.2012 Bulletin 2012/42

(51) Int Cl.:
F24C 15/10 *(2006.01)*

(21) Application number: **08007558.3**

(22) Date of filing: **18.04.2008**

(54) **A cooking hob**

Kochfeld

Plaque de cuisson

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

(43) Date of publication of application:
11.11.2009 Bulletin 2009/46

(73) Proprietor: **Electrolux Home Products Corporation N.V.**
1130 Brussel (BE)

(72) Inventors:
- **Leikam, Jürgen**
  91161 Hilpoltstein (DE)
- **Leyh, Björn**
  74572 Blaufelden (DE)
- **Buck, Bernd**
  91635 Windelsbach (DE)
- **Neukamm, Alwin**
  91452 Wilhermsdorf (DE)

(74) Representative: **Baumgartl, Gerhard Willi et al**
Electrolux Dienstleistungs GmbH
Group Intellectual Property
90327 Nürnberg (DE)

(56) References cited:
DE-A1- 4 329 222
DE-A1- 4 329 956
DE-A1- 19 835 140
DE-A1-102008 017 776
DE-U1- 9 416 466

EP 2 116 775 B1

Description

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

[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] DE 43 29 222 A1 discloses a fastening arrangement for a cooking hob within a cutout of a worktop. The fastening arrangement comprises a screw, a spring element and a distance element. The fastening arrangement can be adapted to the width of a gap between the cooking hob and the cutout.

[0005] DE 198 35 140 A1 discloses a cooking hob with a fastening device. The fastening device comprises a spring element and a snap-in element.

[0006] It is an object of the present invention to provide a cooking hob, which is installable in a cutout bigger than said cooking hob, wherein said cutout may have arbitrary dimensions.

[0007] The object of the present invention is achieved by the cooking hob according to claim 1.

[0008] According to the present invention 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, wherein the partial elements are formed as massive elements and are attached or attachable at the inner side wall of the cutout by an adhesive bond and/or by at least one screw joint.

[0009] 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. Since 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. Since the partial elements are formed as massive elements, the partial elements can be produced with low costs. 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 and/or by a screw joint.

[0010] 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.

[0011] The distance element and/or the partial elements, respectively, are made of metal, plastics, wood or a combination of them.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] Preferably, the spring element has a U-shaped form and/or is formed as a leaf-spring. This is a simple and effective construction.

[0017] For example, the top sheet of the cooking hob is a glass-ceramic panel.

[0018] 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.

[0019] 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.

[0020] 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 appro-

priate number of partial elements can be composed in order to obtain a distance element, which is adapted to the gap.

[0021] 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.

[0022] 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.

[0023] At last the distance element and/or the partial elements, respectively, are provided for and/or associated with the cooking hob as described above.

[0024] The novel and inventive features believed to be the characteristic 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 sectional side view of an outer portion of a cooking hob with a fastening element installed within a cutout of a worktop

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.

[0026] 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. 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.

[0027] The cooking hob 10 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.

[0028] 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 be the top sheet 12. Inside of the casing 14 there are heating elements and electric and electronic circuitries.

[0029] 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.

[0030] 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.

[0031] The cooking hob 10 is arranged within the cutout 18 of the worktop 20. At the outer portion of the cooking 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.

[0032] 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.

[0033] 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.

[0034] 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.

[0035] 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.

[0036] 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.

[0037] 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.

[0038] 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.

[0039] 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.

[0040] 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.

[0041] 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.

List of reference numerals

[0042]

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),
- 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), and
- 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),

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), wherein the partial elements are formed as massive elements and 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.

2. The cooking hob according to claim 1,
characterized in, 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. The cooking hob according to any one of the preceding claims,
characterized in, that
the partial elements are joint or joinable together by a snap-on mechanism.

Patentansprüche

1. Kochfeld (10) mit wenigstens einem Befestigungselement (22), wobei

- das Befestigungselement (22) an einem äußeren Abschnitt des Kochfeldes (10) abnehmbar oder permanent befestigt ist oder befestigt werden kann,
- das Befestigungselement (22) wenigstens ein Federelement (24) umfasst, das in einer im wesentlichen horizontalen Richtung auswärts wirksam ist, um das Kochfeld (10) innerhalb eines Ausschnitts (18) einer Arbeitsfläche (20) festzuklemmen, die das Kochfeld (10) außenumfänglich umschließt, und
- wenigstens ein Abstandselement (30) abnehmbar oder permanent an einer inneren Seitenwand des Ausschnitts (18) festgemacht werden kann, so dass das Federelement (24) im montierten Zustand des Kochfeldes (20) gegen das Abstandselement (30) drückt,

dadurch gekennzeichnet, dass
das Abstandselement (30) aus einer variablen Anzahl von Teilelementen zusammengesetzt ist, so dass das Abstandselement (30) an die Lücke zwischen dem Federelement (24) und der inneren Seitenwand des Ausschnitts (18) angepasst ist oder angepasst werden kann, wobei die Teilelemente als massive Elemente ausgeführt und an der inneren Seitenwand des Ausschnitts (18) mittels einer Klebeverbindung und/oder wenigstens einer Schraubverbindung befestigt sind und/oder befestigt werden können.

2. Kochfeld gemäß Anspruch 1,
dadurch gekennzeichnet, dass
das Abstandselement (30) und/oder die Teilelemente aus Metall, Kunststoff, Holz oder aus einer Kombination derselben angefertigt sind.

3. Kochfeld gemäß einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass**
das Kochfeld (10) einen Designrahmen (16) umfasst, der eine Deckplatte (12) des Kochfeldes (10) außenumfänglich umschließt
und/oder
dass der Designrahmen (16) und/oder ein äußerer Abschnitt der Deckplatte (12) dazu vorgesehen sind, eine Lücke zwischen dem Kochfeld (10) und der inneren Seitenwand des Ausschnitts (18) abzudecken
und/oder
dass der Designrahmen (16) abnehmbar oder permanent an der Deckplatte (12) befestigt ist oder befestigt werden kann, insbesondere mittels einer Klebeverbindung, einer Schraubverbindung und/oder einer Einschnappverbindung.

4. Kochfeld gemäß Anspruch 3,
dadurch gekennzeichnet, dass
der Designrahmen (16) wenigstens einen Abdichtstreifen (32) umfasst, der an einer Unterseite des Designrahmens (16) angeordnet ist, wobei der Abdichtstreifen (32) insbesondere dazu vorgesehen ist, zwischen dem Designrahmen (16) und einer Oberseite der Arbeitsfläche (20) eingepresst zu werden.

5. Kochfeld gemäß einem der vorangehenden Ansprüche,
dadurch gekennzeichnet, dass
das Federelement (24) U-förmig ausgeführt ist und/oder dass das Federelement (24) eine Blattfeder und/oder die Deckplatte (12) des Kochfeldes (10) eine Glaskeramikplatte ist.

6. Kochfeld gemäß einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass**
das Befestigungselement (22) zusätzlich dazu vorgesehen ist, die Deckplatte (12) und ein Gehäuse (14) des Kochfeldes (10) zu verbinden
und/oder
dass ein oberer Abschnitt (28) des Befestigungselements (22) an die Deckplatte (12) des Kochfeldes (10) geklebt ist und/oder
dass das Befestigungselement (22) durch ein Klinkenelement (26) am Gehäuse (14) des Kochfeldes (10) verbunden ist, wobei das Klinkenelement (26) insbesondere ein Teil des Befestigungselements (22) ist.

7. Kochfeld gemäß einem der vorangehenden Ansprüche,
dadurch gekennzeichnet, dass
die Teilelemente mittels eines Einschnappmechanismus miteinander verbunden sind oder verbunden werden können.

Revendications

1. Plaque de cuisson (10) avec au moins un élément de fixation (22), où

- l'élément de fixation (22) est ou peut être fixé amoviblement ou en permanence à une portion extérieure de la plaque de cuisson (10),
- l'élément de fixation (22) comprend au moins un élément de ressort (24) agissant vers l'extérieur dans une direction sensiblement horizontale pour serrer la plaque de cuisson (10) dans une découpure (18) d'un plan de travail (20) renfermant circonférentiellement ladite plaque de cuisson (10), et
- au moins un élément d'écartement (30) pouvant être fixé amoviblement ou en permanence à une paroi latérale intérieure de la découpure (18) de sorte que l'élément de ressort (24) porte contre l'élément d'écartement (30) à l'état monté de la plaque de cuisson (20),

caractérisée en ce que l'élément d'écartement (30) est constitué d'un nombre variable d'éléments partiels de sorte que l'élément d'écartement (30) est adapté ou peut être adapté à l'espace entre l'élément de ressort (24) et la paroi latérale intérieure de la découpure (18), où les éléments partiels sont formés comme des éléments massifs et sont ou peuvent être fixés à la paroi latérale intérieure de la découpure (18) par une liaison adhésive et/ou par au moins un joint à vis.

2. Plaque de cuisson selon la revendication 1, **caractérisée en ce que** l'élément d'écartement (30) et/ou les éléments partiels, respectivement, sont réalisés en métal, plastique, bois ou une combinaison de ceux-ci.

3. Plaque de cuisson selon l'une quelconque des revendications précédentes, **caractérisée en ce que**
la plaque de cuisson (10) comprend un châssis design (16) renfermant circonférentiellement une feuille supérieure (12) de ladite plaque de cuisson (10)
et/ou
que le châssis de design (16) et/ou une portion extérieure de la feuille supérieure (12) sont prévus pour couvrir un espace entre la plaque de cuisson (10) et la paroi latérale intérieure de la découpure (18)
et/ou
que le châssis de design (16) est ou peut être fixé amoviblement ou en permanence à la feuille supérieure (12), en particulier par une liaison adhésive, un joint à vis et/ou une connection d'enclenchement.

4. Plaque de cuisson selon la revendication 3, **caractérisée en ce que** le châssis de design (16) comprend au moins une bande d'étanchéité (32) agencée à un côté inférieur du châssis de design (16), où la bande d'étanchéité (32) est en particulier prévue pour être compressée entre le châssis de design (16) et un côté supérieur du plan de travail (20).

5. Plaque de cuisson selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'élément de ressort (24) a une forme en U et/ou **en ce que** l'élément de ressort (24) est un ressort à lames et/ou que la feuille supérieure (12) de la plaque de cuisson (10) est un panneau vitrocéramique.

6. Plaque de cuisson selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** l'élément de fixation (22) est additionnellement prévu pour joindre la feuille supérieure (12) et un boîtier (14) de la plaque de cuisson (10)
et/ou
qu'une portion supérieure (28) de l'élément de fixation (22) est collée à la feuille supérieure (12) de la plaque de cuisson (10)
et/ou
que l'élément de fixation (22) est relié au boîtier (14) de la plaque de cuisson (10) par un élément de verrouillage (26), l'élément de verrouillage (26) faisant partie en particulier de l'élément de fixation (22).

7. Plaque de cuisson selon l'une quelconque des revendications précédentes, **caractérisée en ce que** les éléments partiels sont joints ou peuvent être joints ensemble par un mécanisme d'enclenchement.

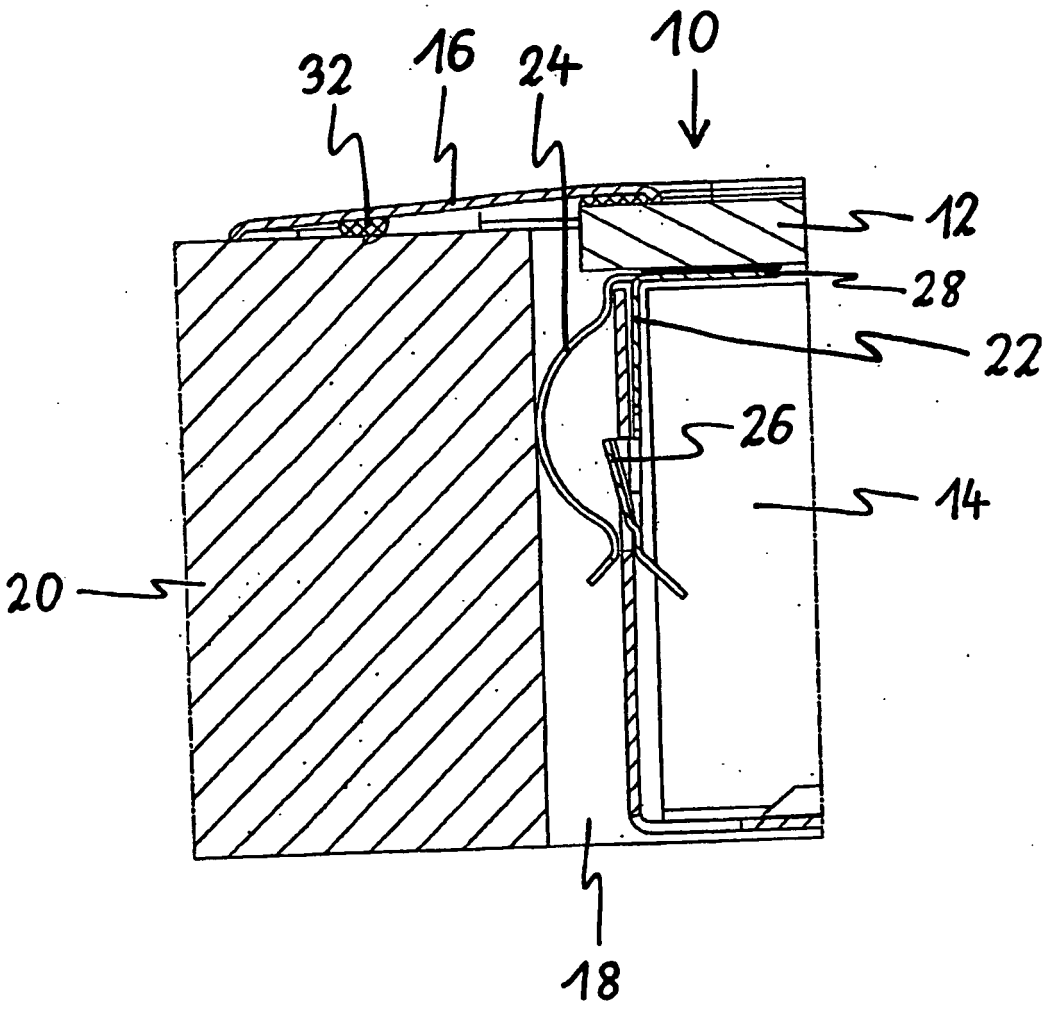

FIG 1

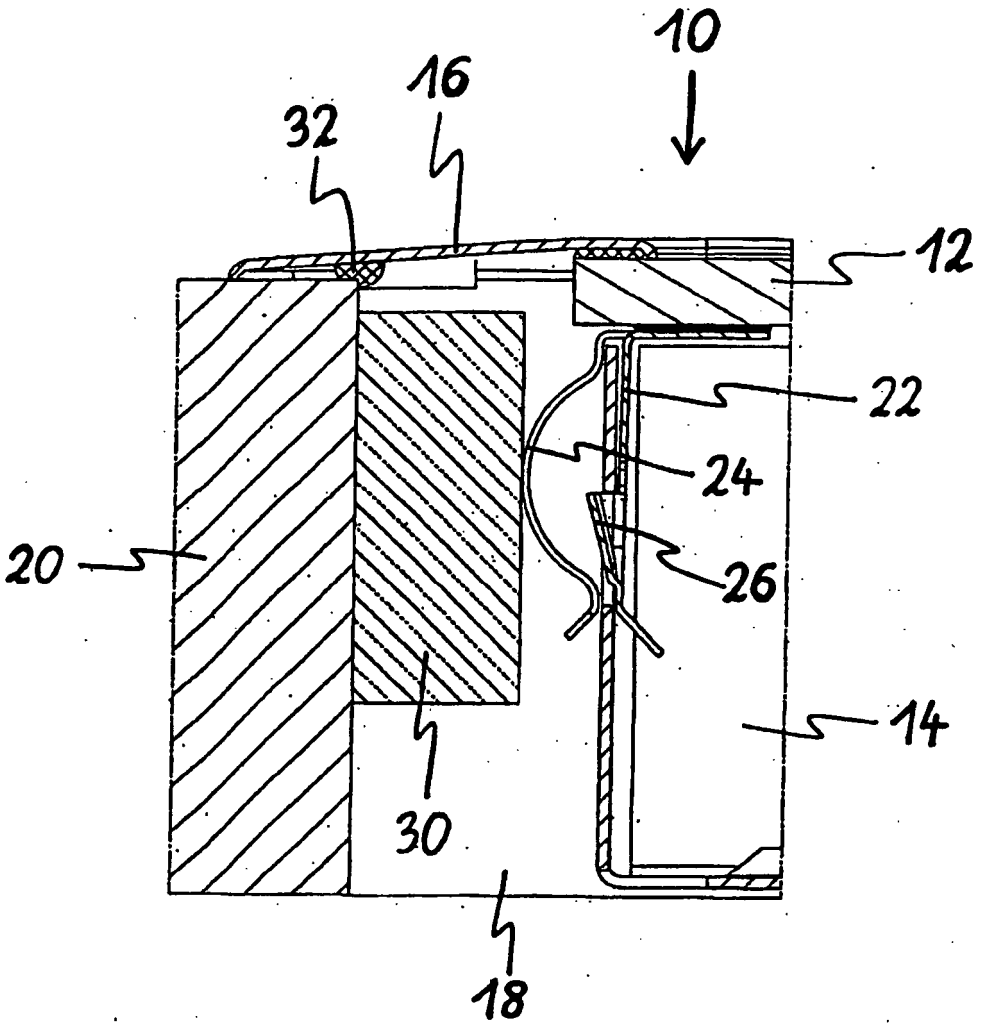

FIG 2

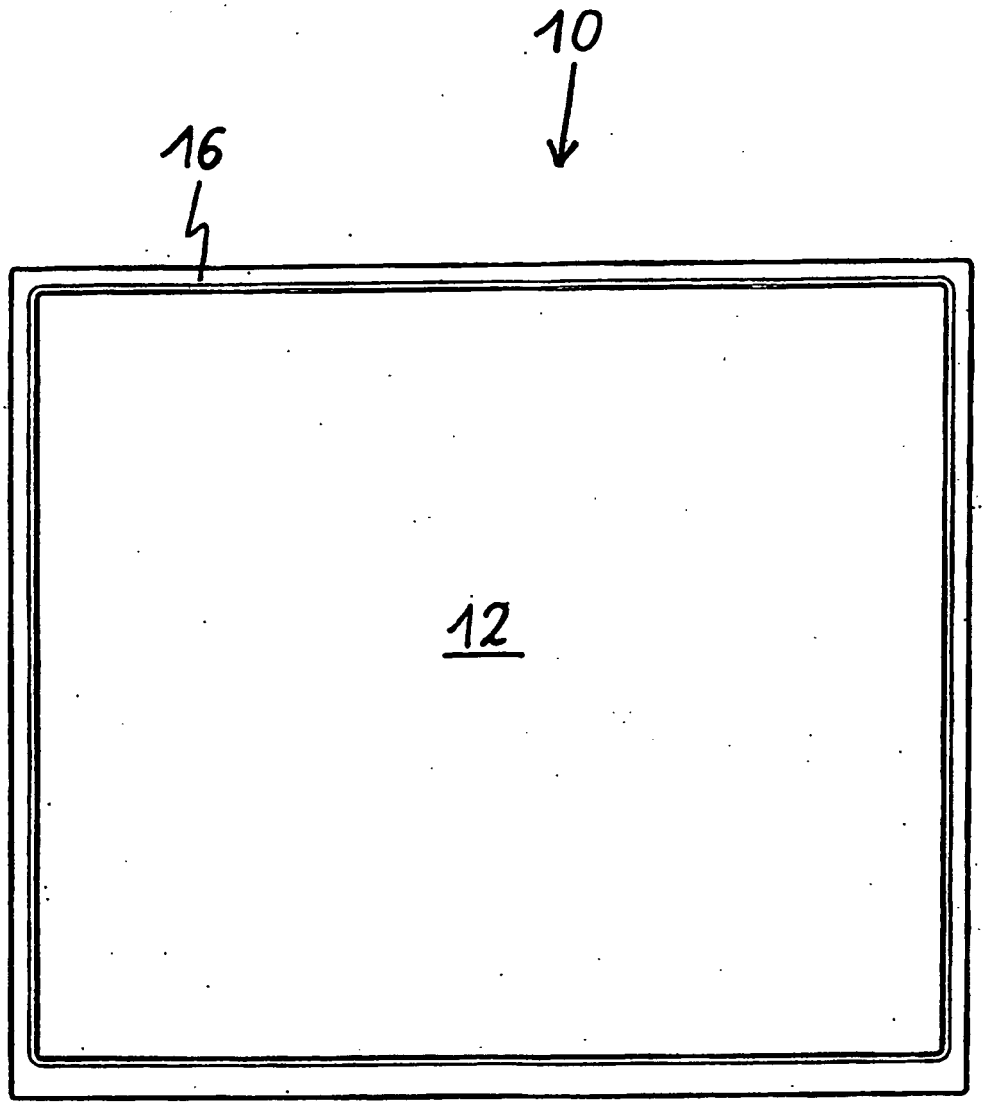

FIG 3

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 4329222 A1 **[0004]**
- DE 19835140 A1 **[0005]**