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(54) **A package system for an apparatus with a glass panel**

Verpackungssystem für eine Vorrichtung mit einer Glasscheibe

Système d'emballage pour appareil avec panneau de verre

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Description

[0001] The present invention relates to a package system for an apparatus with a glass panel, in particular a cooking hob with a glass-ceramic panel, according to the preamble of claim 1.

[0002] An apparatus with a glass panel, in particular a cooking hob with a glass-ceramic panel, requires a package, which damps and/or decreases any crashing forces during the transport. Usually, a protection device is arranged between the glass panel and an adjacent wall of the package system. Said protection device is typically made of an expanded polystyrene (EPS) and covers a central portion of the glass panel. The protection device supports the glass panel and keeps said glass panel in a predetermined distance from the adjacent wall of the package system.

[0003] However, the protection device is not fixed at its predetermined position. Thus, the protection device can be displaced during the transport, so that there is a risk of damage to the glass panel.

[0004] US 3,356,209 discloses a packaging construction for fragile or breakable articles. The packaging construction comprises a supporting panel having a plurality of hole portions formed therein. A plurality of foam plastic shock absorbing blocks is removably positioned on the supporting panel. Each shock absorbing block has an integral projection positioned in one of the hole portions. Each projection has substantially the same size as the associated hole portion. The shock absorbing blocks are arranged around the article.

[0005] DE 70 07 750 U discloses a cushion for protecting the surface of furniture during transportation. The cushion is formed as block adapted to the purpose. The cushion is made of foam plastics. An adhesive tape with two gluey sides is attached on the cushion. The first gluey side effects the fixation on the cushion. The second gluey side is covered by a foil and provided for attaching the cushion at the surface to be protected.

[0006] US 3,399,797 discloses a cushioning container comprising supporting walls. The supporting walls are folded with portions in overlapping relations with registering openings in the overlapping portions. A resilient compressible material is inserted into the openings in order to hold the overlapping walls in position. Cushions are placed in the container against shocks from impact or the like.

[0007] It is an object of the present invention to provide an improved package system for an apparatus with a glass panel, which keeps the protection device for the glass panel at its predetermined position.

[0008] The object of the present invention is achieved by the package system for an apparatus according to claim 1.

[0009] According to the present invention the package system includes at least one adhesive tape provided for applying at an outer surface of the paperboard sheet and an outer surface of the appendix, wherein the outer surface of the paperboard sheet and the outer surface of the appendix extend in the same plane, when the appendix is inserted in the cutout of the paperboard sheet.

[0010] The main idea of the present invention is the appendix at the protection device, wherein said appendix is insertable into the cutout of the paperboard sheet. The protection device can be fixed at the paperboard sheet. This prevents a displacement of the protection device during the transport. The adhesive tape provides an additional fixation of the protection device at the paperboard sheet.

[0011] For example, the protection device has the form of a disk. The form of the disk allows that a relative big art of the glass ceramic panel is covered by the protection device on the one hand and the space between the glass ceramic panel and the paperboard sheet is relative small.

[0012] In particular, the form of the cutout corresponds with the cross-section of the appendix.

[0013] Further, the contour of the cutout may be marginally bigger than the cross-section of the appendix. This facilitates the attaching of the protection device at the paperboard sheet.

[0014] For example, the appendix has form of a circular disk. In a similar way, the cutout has a circular form. The protection device is rotatable at the paperboard sheet.

[0015] In particular, the protection device is made of expanded polystyrene. This allows a simple production.

[0016] Moreover, the protection device and the appendix form a single-piece part. Also the single-piece part contributes to the simple production of the protection device.

[0017] Preferably, the cutout is arranged at a central portion of the paperboard sheet. This allows an optimized protection of the glass ceramic panel.

[0018] For example, the paperboard sheet is a part of a paperboard box. This allows a compact construction of the package system.

[0019] Alternatively, the paperboard sheet is a single sheet. In this case the paperboard sheet can be inserted into paperboard box or arranged at other components of the package system.

[0020] At last, the paperboard sheet may be a part of another component of the package system.

[0021] Novel and inventive features of the present invention are set forth in the appended claims.

[0022] The present invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates an exploded perspective view of package components for a package system according to a preferred embodiment of the present invention.

[0023] FIG 1 illustrates an exploded perspective view of package components for the package system according to the preferred embodiment of the present invention. The package system is provided for an apparatus with at least one glass panel. In particular, the package system is provided for a cooking hob with a glass ceramic panel.

[0024] The shown package components include a protection device 10 and a paperboard sheet 14. The protection device 10 is a massive formed part. Preferably, the protection device 10 is made of expanded polystyrene (EPS). In this example, the protection device 10 has the form of a flat cylinder or a circular disk. In general, the protection device 10 may have an arbitrary form with at least one plane surface. Said plane surface is provided to be aligned at the glass panel.

[0025] The paperboard sheet 14 may be a part of a paperboard box or formed as a single sheet. In the latter case the paperboard sheet 14 may be provided to be inserted into a container for the cooking hob or forms a part of a composite package system. The paperboard sheet 14 is provided to be arranged besides the glass ceramic panel. The protection device 10 is provided to be arranged between the paperboard sheet 14 and the glass ceramic panel.

[0026] The protection device 10 is suitable for supporting and protecting the glass ceramic panel of the cooking hob, wherein a plane surface of the protection device 10 is aligned at a central portion of said glass ceramic panel. The protection device 10 allows that the glass ceramic panel is kept in a predetermined distance from the paperboard sheet 14.

[0027] The protection device 10 includes an appendix 12. The appendix is arranged opposite to that plane surface of the protection device 10, which is provided to be aligned at the glass ceramic panel. The protection device 10 and the appendix 12 may form a single-piece part. Alternatively, the appendix 12 may be formed as a separate part fixed at the protection device 10. In this example, the appendix 12 has the form of a flat cylinder or a circular disk. A large-area side of the appendix 12 extends parallel to a large-area side of the protection device 10.

[0028] The paperboard sheet 14 comprises a cutout 16 in its central portion. The cutout 16 has a circular form and is marginally bigger than the cross-section of the appendix 12 of the protection device 10. Thus, the appendix 12 of the protection device 10 is insertable into the cutout 16 of the paperboard sheet 14.

[0029] The height of the appendix 12 corresponds with the thickness of the paperboard sheet 14, so that an outer surface of the appendix 12 extends in the same plane as an outer surface of the paperboard sheet 14. An adhesive tape 18 is provided at the outer side of the paperboard sheet 14, wherein said adhesive tape 18 covers at least partially the outer surface of the appendix 12.

[0030] The protection device 10 with the appendix 12 and the paperboard sheet 14 with the cutout 16 are partially complementary to each other. The complementary forms of the protection device 10 and paperboard sheet 14 on the one hand and the adhesive tape 18 at the outer sides of the paperboard sheet 14 and appendix 12 allow a fastening of the protection device 10 at the paperboard sheet 14.

[0031] In this example, the cross-section of the appendix 12 and the form of the cutout 16 are circular. In general, the cross-section of the appendix 12 and the form of the cutout 16 may be arbitrary. However, the cross-section of the appendix 12 and the form of the cutout 16 must be at least partially complementary.

[0032] The at least partially complementary forms of the appendix 12 and the cutout 16 on the one hand and the adhesive tape 18 on the other hand guarantee that the protective device 10 cannot loosen from the paperboard sheet 14.

[0033] The package system mentioned above is provided for a cooking hob with a glass-ceramic panel. In general, the package system may be provided for an arbitrary apparatus with one or more glass panels or other fragile or breakable panels.

[0034] Further, the paperboard sheet 14 may be replaced by a sheet made of another material. For example, instead of the paperboard sheet 14 a wooden panel can be used.

[0035] Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawing, it is to be understood that the present invention is not limited to that precise embodiment, and that various other changes and modifications may be affected therein 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

10	protection device
12	appendix
14	paperboard sheet
16	cutout
18	adhesive tape

Claims

1. A package system for an apparatus with a panel, in particular for a cooking hob with a glass ceramic panel, wherein:

- the package system includes at least one protection device (10) with at least one plane surface,
- the plane surface of the protection device (10) is provided for aligning at the panel,
- the package system comprises at least one paperboard sheet (14) provided for arranging besides the panel,
- the protection device (10) forms a cushion element between the panel and the paperboard sheet (14),
- the protection device (10) comprises at least one appendix (12),
- the paperboard sheet (14) comprises at least one cutout (16), and
- the appendix (12) and the cutout (16) are at least partially complementary to each other,

characterized in, that

the package system includes at least one adhesive tape (18) provided for applying at an outer surface of the paperboard sheet (14) and an outer surface of the appendix (12), wherein the outer surface of the paperboard sheet (14) and the outer surface of the appendix (12) extend in the same plane, when the appendix (12) is inserted in the cutout (16) of the paperboard sheet.

2. The package system according to claim 1,
characterized in, that
the protection device (10) has the form of a disk.

3. The package system according to claim 1, or 2,
characterized in, that
the form of the cutout (16) corresponds with the cross-section of the appendix (12).

4. The package system according to claim 3,
characterized in, that
the contour of the cutout (16) is marginally bigger than the cross-section of the appendix (12).

5. The package system according to any one of the preceding claims,
characterized in, that
the appendix (12) has form of a circular disk.

6. The package system according to any one of the preceding claims,
characterized in, that
the cutout (16) has a circular form.

7. The package system according to any one of the preceding claims,
characterized in, that
the protection device (10) is made of an expanded polystyrene.

8. The package system according to any one of the preceding claims,
characterized in, that
the protection device (10) and the appendix (12) form a single-piece part.

9. The package system according to any one of the preceding claims,
characterized in, that
the cutout (16) is arranged at a central portion of the paperboard sheet (14).

10. The package system according to any one of the preceding claims,
characterized in, that
the paperboard sheet (14) is a part of a paperboard box.

11. The package system according to any one of the claims 1 to 9, **characterized in, that**
the paperboard sheet (14) is a single sheet.

12. The package system according to any one of the claims 1 to 9, **characterized in, that**
the paperboard sheet (14) is a part of another component of the package system.

Patentansprüche

1. Verpackungssystem für eine Vorrichtung mit einer Platte, insbesondere für einen Kochherd mit einer Glaskeramikplatte, wobei:

- das Verpackungssystem mindestens eine Schutzvorrichtung (10) mit mindestens einer ebenen Oberfläche umfasst,
- die ebene Oberfläche der Schutzvorrichtung (10) zur Ausrichtung an der Platte vorgesehen ist,
- das Verpackungssystem mindestens einen Kartonbogen (14) umfasst, der zur Anordnung neben der Platte vorgesehen ist,
- die Schutzvorrichtung (10) ein Polsterelement zwischen der Platte und dem Kartonbogen (14) bildet,
- die Schutzvorrichtung (10) wenigstens einen Fortsatz (12) umfasst,
- der Kartonbogen (14) mindestens einen Ausschnitt (16) umfasst, und
- der Fortsatz (12) und der Ausschnitt (16) einander wenigstens teilweise ergänzen,

dadurch gekennzeichnet, dass

das Verpackungssystem mindestens ein Klebeband (18) umfasst, das zur Anbringung an einer äußeren Oberfläche des Kartonbogens (14) und an einer äußeren Oberfläche des Fortsatzes (12) vorgesehen ist, wobei sich die äußere Oberfläche des Kartonbogens (14) und die äußere Oberfläche des Fortsatzes (12) in derselben Ebene erstrecken, wenn der Fortsatz (12) in den Ausschnitt (16) des Kartonbogens eingeführt ist.

2. Verpackungssystem gemäß Anspruch 1,

dadurch gekennzeichnet, dass

die Schutzvorrichtung (10) die Form einer Scheibe hat.

3. Verpackungssystem gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass**

die Form des Ausschnitts (16) dem Querschnitt des Fortsatzes (12) entspricht.

4. Verpackungssystem gemäß Anspruch 3,

dadurch gekennzeichnet, dass

der Umriss des Ausschnitts (16) geringfügig größer als der Querschnitt des Fortsatzes (12) ist.

5. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass

der Fortsatz (12) die Form einer kreisförmigen Scheibe hat.

6. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass der Ausschnitt (16) eine kreisförmige Form hat.

7. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass

die Schutzvorrichtung (10) aus einem expandierten Polystyrol gefertigt ist.

8. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass

die Schutzvorrichtung (10) und der Fortsatz (12) ein einstückiges Teil bilden.

9. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass

der Ausschnitt (16) in einem mittleren Teil des Kartonbogens (14) angeordnet ist.

10. Verpackungssystem gemäß einem der vorangehenden Ansprüche,

dadurch gekennzeichnet, dass

der Kartonbogen (14) einen Teil einer Kartonschachtel bildet.

11. Verpackungssystem gemäß einem der Ansprüche 1-9, **dadurch gekennzeichnet, dass**

der Kartonbogen (14) ein Einzelbogen ist.

12. Verpackungssystem gemäß einem der Ansprüche 1-9, **dadurch gekennzeichnet, dass** der Kartonbogen (14) ein Teil einer anderen Komponente des Verpackungssystems ist.

5 Revendications

1. Système d'emballage pour un appareil avec un panneau, en particulier pour une table de cuisson avec un panneau vitrocéramique, dans lequel :

- 10 - le système d'emballage comprend au moins un dispositif de protection (10) avec au moins une surface plane,
 - la surface plane du dispositif de protection (10) est prévue pour l'alignement au panneau,
 - le système d'emballage comprend au moins une feuille de carton (14) prévue pour l'agencement à côté du panneau,
 - le dispositif de protection (10) forme un élément d'amortissement entre le panneau et la feuille de carton (14),
 15 - le dispositif de protection (10) comprend au moins un appendice (12),
 - la feuille de carton (14) comprend au moins une découpeure (16), et
 - l'appendice (12) et la découpeure (16) sont au moins partiellement complémentaire l'un à l'autre,

20 **caractérisé en ce que** le système d'emballage comprend au moins une bande adhésive (18) prévu pour l'application à une surface extérieure de la feuille de carton (14) et une surface extérieure de l'appendice (12), où la surface extérieure de la feuille de carton (14) et la surface extérieure de l'appendice (12) s'étendent dans le même plan lorsque l'appendice (12) est inséré dans la découpeure (16) de la feuille de carton.

- 25 2. Système d'emballage selon la revendication 1, **caractérisé en ce que** le dispositif de protection (10) a la forme d'un disque.

3. Système d'emballage selon la revendication 1 ou 2, **caractérisé en ce que** la forme de la découpeure (16) correspond à la section transversale de l'appendice (12).

- 30 4. Système d'emballage selon la revendication 3, **caractérisé en ce que** le contour de la découpeure (16) est marginalement plus grand que la section transversale de l'appendice (12).

5. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'appendice (12) a la forme d'un disque circulaire.

- 35 6. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la découpeure (16) a une forme circulaire.

- 40 7. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le dispositif de protection (10) est réalisé en polystyrène expansé.

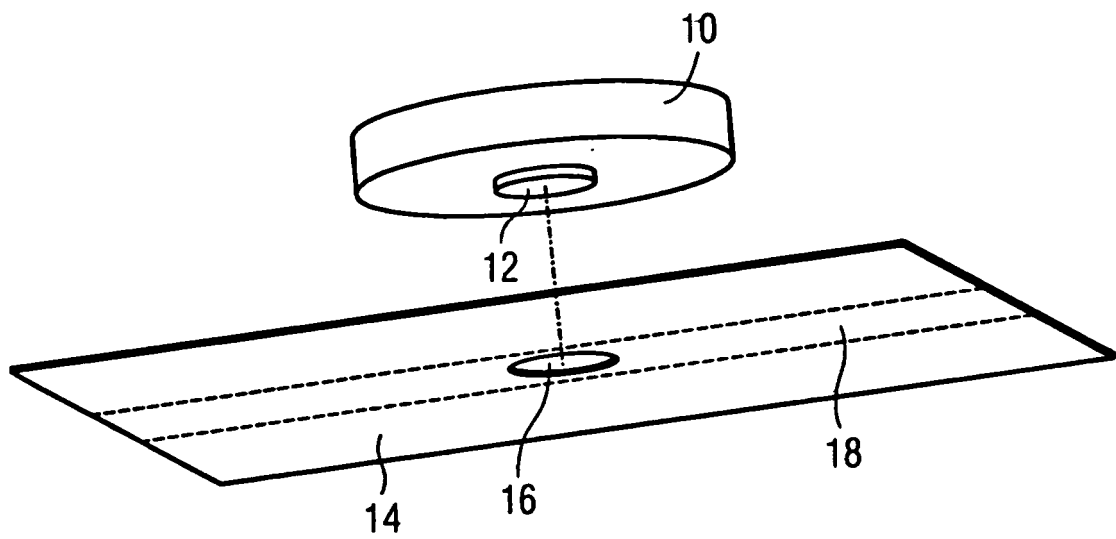
8. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le dispositif de protection (10) et l'appendice (12) forment une partie en une pièce.

- 45 9. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la découpeure (16) est agencée à une portion centrale de la feuille de carton (14).

- 50 10. Système d'emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la feuille de carton (14) est une partie d'une boîte en carton.

11. Système d'emballage selon l'une quelconque des revendications 1 à 9, **caractérisé en ce que** la feuille de carton (14) est une feuille unique.

- 55 12. Système d'emballage selon l'une quelconque des revendications 1 à 9, **caractérisé en ce que** la feuille de carton (14) est une partie d'un autre composant du système d'emballage.



REFERENCES CITED IN THE DESCRIPTION

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