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Declarations under Rule 4.17:

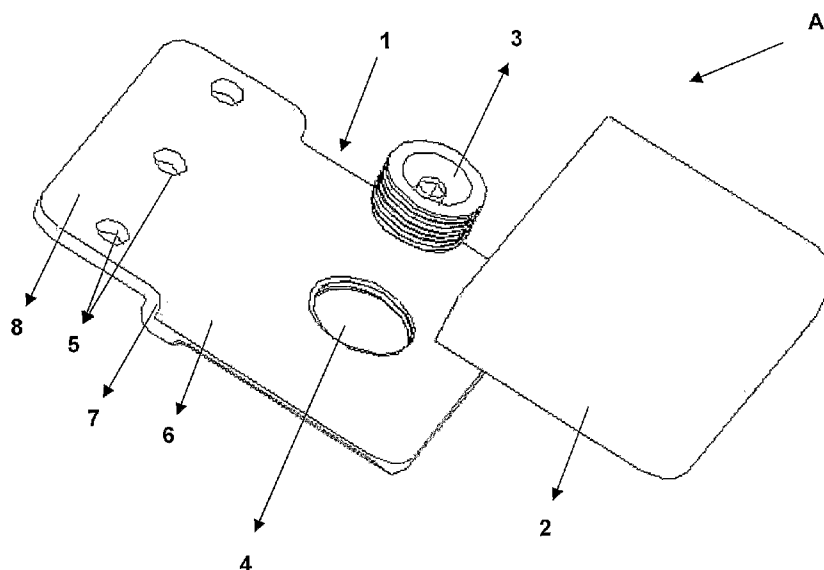
- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

- with international search report
- with amended claims and statement

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ANGLE ADJUSTMENT APPARATUS FOR BUILT-IN WHITE GOODS



(57) Abstract: The angle adjustment apparatus (A) of the invention used for providing parallelism of the doors of the built-in white goods product and the furniture comprises a sheet-shaped one-piece plate (1) comprising two separate surfaces (6, 8) which have level differences relative to each other namely an adjustment surface (6) and a product mounting surface (8) and a bending surface (7) that bends up on the edge at which the adjustment surface (6) finishes by separating these surfaces (6, 8) from each other and extends between this edge and the edge at which the product mounting surface (8) starts; a cover (2) attached to the plate (1) in order to close the top of the adjustment surface (6); a threaded connection part (3) attached to threaded connection part hole (4) located in the middle of the adjustment surface (6).

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DESCRIPTION**ANGLE ADJUSTMENT APPARATUS FOR BUILT- IN WHITE GOODS****Technical Field**

10 This invention relates to an angle adjustment apparatus for built-in white goods by adjusting the right/left inclination and back and forth inclination of the product in the furniture so that the doors of the furniture and that of white goods become parallel to each other.

Background Art

15 Conventionally in built-in products, white goods are mounted by using fixing legs after they have been placed in the furniture. However, no adjustment could be done with this part. Therefore, any inclination in the furniture base affects the product placed-in and although the furniture door and product door must be parallel to each other, furniture door is obstructed from smooth opening by an angle formed between two doors. Thus,
20 mounting difficulty is experienced and necessity for direct intervention to the furniture is needed since no adjustment is done.

The adjustment apparatus described in published patent application No. AU2003270246 is used to height adjustment of a door of a refrigerator. However, the
25 adjustment could be done on the product body. Since the adjustment screw is mounted on the door portion when the body part of the adjustment apparatus is mounted on the product base, and door height is adjusted by turning the screw.

30 By means of the leg mentioned in published patent application JP2001078846, fixing to the floor is provided and also a product height adjustment could be done. However the use of this leg is limited. It is used to adjust the heights of the products only accessible from top such as bed and base because the product is elevated by turning the screw within and from top hereof. It could not be possible to use this leg for built-in products.

5 The angle adjustment apparatus of the invention could be used to adjust the angle in the built-in products and obviate the angle difference between the product door and the furniture door or to make both doors parallel to each other. In the invention below described in detail, the angle adjustment apparatus is mounted on the product base and then it is placed in the furniture. Next, an arm is attached to the bolt on the angle
10 adjustment apparatus and angle adjustment apparatus and then product is elevated upwards on the bolt by turning the arm clockwise or counter.

Object of the invention

The object of the invention is to form an apparatus providing smooth operation of the
15 hinge mechanism on the furniture door and the product door by obviating the angle difference between the door of the built-in white goods product and the furniture door.

Description of the Drawings

The angle adjustment apparatus of the invention is illustrated in the appended figures,
20 in which:

Figure 1, is a perspective view of the angle adjustment apparatus before mounting.

Figure 2, is a perspective view of the angle adjustment apparatus with a cover.

Figure 3, is a side view of the angle adjustment apparatus mounted on the product.

Figure 4, is a top perspective view of the angle adjustment apparatus mounted on the
25 product.

Figure 5, is a perspective view of the angle adjustment apparatus with an arm mounted hereon.

Figure 6, is a side view of the angle adjustment apparatus before adjustment.

Figure 7, is a side view of the angle adjustment apparatus when the plate is somewhat
30 elevated by adjusting.

Figure 8, is a side view of the angle adjustment apparatus when the plate is somewhat lowered by adjusting.

- 5 In figures, each part is numbered individually and corresponds to the numbers given below:
- Angle adjustment apparatus (A)
- Plate (1)
- Cover (2)
- 10 Threaded connection part (3)
- Threaded connection part hole (4)
- Connection hole (5)
- Adjustment surface (6)
- Bending region (7)
- 15 Product mounting surface (8)
- Product (9)
- Furniture (10)
- Lower surface of the product (11)
- Furniture base (12)
- 20 Arm (13)

Disclosure of Invention

- The angle adjustment apparatus (A) before mounting as shown in Figure 1 comprises a sheet-shaped one-piece plate (1) comprising two separate surfaces (6, 8) which have
- 25 level differences relative to each other namely an adjustment surface (6) and a product mounting surface (8) and a bending surface (7) that bends up on the edge at which the adjustment surface (6) finishes by separating these surfaces (6, 8) from each other and extends between this edge and the edge at which the product mounting surface (8) starts; a cover (2) whose two surfaces are shaped as opened-quadrilateral prism in
- 30 order to close the top of the adjustment surface (6) and having a thickness like a thin meat and whose fingers at the inner edges are attached to the lower portion of the adjustment surface (6); a threaded connection part hole (4) placed in the middle of the adjustment surface (6) and having a thread hereon; a threaded connection part (3) that

5 could be attached to this hole (4). The plate (1) could be attached to the lower surfaces (11) of the products such as built-in white goods as shown in Figure 3 by means of at least one connection hole (5) on the product mounting surface (8) at the plate (1) and of standard connection elements suitable for this hole.

10 In Figure 2 a perspective view of the angle adjustment apparatus (A) is shown. Aesthetical appearance is kept intact by attaching a cover (2) on the adjustment surface (6) after the angle adjustment of the plate (1) is done.

In Figure 3-4 the product (9), the furniture (10) and the angle adjustment apparatus (A) are shown as mounted to each other. After the angle adjustment apparatus (A) is mounted on the lower portion (11) of the product by means of the standard connection elements through the connection holes (5) located on the product mounting surface (8), the product (9) is placed in the furniture (10) and angle adjustment is done by the arm (13) attached to the threaded connection part (3).

20

In Figure 5 a perspective view of the angle adjustment apparatus (A) with an arm (13) attached hereon is shown.

As shown in Figure 6 wherein connection part (3) is attached to the adjustment surface (6), the adjustment surface (6) is located in the middle region of the threaded connection part (3). In this position, the angle adjustment apparatus (A) attached to the product base (11) is placed in the furniture (10) and the lowest end of the threaded connection part (3) is seated on the furniture base (12). By turning the threaded connection part (3) clockwise or counter direction by means of the arm (13), the plate (1) is somewhat elevated or lowered.

30

As shown in Figure 7, by turning the arm in clockwise direction the threaded connection part (3) is turned in the threaded connection part hole (4) and the plate (1) is somewhat elevated. As shown in Figure 8, by turning the arm in counter clockwise direction the threaded connection part (3) is turned in the threaded connection part hole (4) and the plate (1) is somewhat lowered.

35

5 In a preferred embodiment of the invention, two angle adjustment apparatuses (A), as shown in Figure 4, are attached to the product (9) at lower right and lower left sides of front part of the product (9) and placed in the furniture (10) in this manner. By using two angle adjustment apparatuses (A) on right and left sides and adjusting these two apparatus (A) separately, right or left inclination of the product (9) in the furniture (10) is adjusted. In addition, back and forth inclination of the product (9) in the furniture (10) could be adjusted by adjusting each of two apparatus (A) simultaneously. In this manner, back and forth, left and right inclinations of the product (9) in the furniture (10) could be done by using two angle adjustment apparatuses (A) and parallelism and smooth cooperation of the furniture (10) door and the product (9) door when they are joined are provided by means of obviating the angle differences between the doors of the furniture (10) and the product (9).

Preferred angle adjustment apparatus (A) above is not intended to limit the protection scope of the invention. In view of the described knowledge by the invention, all modifications on this preferred angle adjustment apparatus (A) should be interpreted in the protection scope of the invention.

5

CLAIMS

1. An angle adjustment apparatus (A) used for obviating the angle differences between the doors of a product (9) and a furniture (10) when built-in white goods products (9) are placed in the furniture (10) and for providing parallelism and smooth cooperation of the doors of the furniture (10) and the product (9) when they are joined, characterized in that,

it comprises, in order to adjust the left or right inclination of the product (9) in the furniture (10) by adjusting both apparatuses (A) separately or adjust back and forth inclination of the product (9) in the furniture (10) by adjusting both apparatuses (A) simultaneously by means of placing the product (9) in the furniture (10) together with attached two apparatuses on lower right and lower left sides of the front part of the product (9),

a sheet-shaped one-piece plate (1) comprising two separate surfaces (6, 8) which have level differences relative to each other namely an adjustment surface (6) and a product mounting surface (8) and a bending surface (7) that bends up on the edge at which the adjustment surface (6) finishes by separating these surfaces (6, 8) from each other and extends between this edge and the edge at which the product mounting surface (8) starts;

a threaded connection part hole (4) placed in the middle of the adjustment surface (6) and having a screw thread hereon;

a threaded connection part (3) that could be attached to this hole (4);

at least one connection hole (5) located on the product mounting surface (8) and used in attaching the plate (1) to the lower surfaces (11) of the products such as built-in white goods by using standard connection elements.

5

2. An angle adjustment apparatus (A) according to claim 1, characterized in that when it is placed in the furniture (10) as attached to the product base (11), it extends in the middle region of the threaded connection part (3) of the adjustment surface (6).

10

3. An angle adjustment apparatus (A) according to claim 1, characterized in that the plate (1) could be somewhat elevated or lowered by turning the threaded connection part (3) clockwise or counter direction by means of the arm (13).

15

4. An angle adjustment apparatus (A) according to claim 1, characterized in that it comprises a cover (2) whose two surfaces are shaped as opened-quadrilateral prism in order to close the top of the adjustment surface (6) and having a thickness like a thin meat and whose fingers at the inner edges are attached to the lower portion of the adjustment surface (6).

20

AMENDED CLAIMS**received by the International Bureau on 29 May 2006 (29.05.2006)**

1. An angle adjustment apparatus (A); used for adjusting the left / right and back / forth inclination of the built-in white goods in the furniture; comprising

a sheet-shaped one-piece plate (1) comprising two separate surfaces (6, 8) which have level differences relative to each other namely an adjustment surface (6) and a product mounting surface (8) and a bending surface (7) that bends up on the edge at which the adjustment surface (6) finishes by separating these surfaces (6, 8) from each other and extends between this edge and the edge at which the product mounting surface (8) starts;

a threaded connection part hole (4) placed in the middle of the adjustment surface (6) and having a screw thread hereon;

a threaded connection part (3) that could be attached to this hole (4);

at least one connection hole (5) located on the product mounting surface (8) and used in attaching the plate (1) to the lower surfaces (11) of the products such as built-in white goods by using standard connection elements;

and said apparatus (A) is characterized in that

for obviating the angle differences between the doors of a product (9) and a furniture (10) when built-in white goods products (9) are placed in the furniture (10) and for providing parallelism and smooth cooperation of the doors of the furniture (10) and the product (9) when they are joined,

two angle adjustment apparatuses (A), are attached to the product (9) at lower right and lower left sides of front part of the product (9) and said product (9) placed in the furniture (10); wherein the adjustment surface (6) is located in the middle region of the threaded connection part (3) and the lowest end of the threaded connection part (3) is seated on the furniture base (12);

by turning the threaded connection part (3) clockwise or counter direction ~~by means of the arm (13), the plate (1) is somewhat elevated or lowered;~~ and

to adjust right or left inclination of the product (9) in the furniture (10), said two apparatus (A) are adjusted separately;

to adjust back and forth inclination of the product (9) in the furniture (10), said two apparatus (A) are adjusted simultaneously;

5 and furthermore, the angle adjustment apparatus (A) is mounted to the
product (9) such that said product mounting surface (8) is placed under the
product (9) while said adjustment surface (6) extends outwardly to the front
of the product (9); in order to access to the threaded connection part (3)
from its upper side without having any difficulty for the usage of arm (13).

10

2. An angle adjustment apparatus (A) according to claim 1, wherein it comprises a
cover (2) whose two surfaces are shaped as opened-quadrilateral prism in
order to close the top of the adjustment surface (6) and having a thin wall
thickness like and whose snap fits at the inner edges are attached to the lower
15 portion of the adjustment surface (6).

STATEMENTS UNDER ARTICLE 19

Applicant thanks the Examiner for those comments set forth in the Written Opinion dated April 19, 2006, in connection with the above referenced pending application.

Please kindly be informed that reply against the points mentioned in the written opinion has been given below.

The subject matter patent application PCT/TR2005/000036 differs from the prior art documents shown in the international search report for the said application and corresponding written opinion. The prior art documents:

"US 5 890 696 (Ozawa et al) 6 April 1999" will be denoted as D1,

"JP 2001 078846 (Jufuku Seiya) 27 March 2001" will be denoted as D2

"DE 10221895 (BSH Bosch und Siemens Hausgeraete Gmbh) 27 November 2003" will be denoted as D3 in this document.

The subject matter application PCT/TR2005/000036 has some advantages and differences when compared to prior art documents mentioned above. The comparisons are shown below.

1. Comparison of the Document D1 with PCT/TR2005/000036:

In D1 and PCT/TR2005/000036 similar apparatus are shown. Both apparatus can be used to adjust the inclination of the products in which said apparatus are mounted. The main difference between D1 and PCT/TR2005/000036 is that, the adjuster in D1 is placed completely beneath of a machine to eliminate the vibration of the said machine; while the apparatus in PCT/TR2005/000036 is used to make angle adjustment between a built-in refrigerator and its furniture in order to allow smooth cooperation of the doors of the furniture and the refrigerator. Also, in PCT/TR2005/000036, the apparatus is not completely beneath of the refrigerator, therefore, access to said apparatus is much easier than the one in D1. The adjustment part of the apparatus in PCT/TR2005/000036 extends from the bottom of the refrigerator to the outward, in order to allow faster and easier adjustment. However, in D1 the adjustment is more difficult, since access to the adjuster is difficult because of being completely under the machine. Another difference is that one single adjuster is used in D1, while two apparatus are needed to allow required angle adjustments.

2. Comparison of the Document D2 with PCT/TR2005/000036:

The aim of D2 is to make height adjustment of the furniture. By means of the leg mentioned in D2, fixing to the floor is provided and also a product height adjustment could be done. However the use of this leg is limited. It is used to adjust the heights of the products only accessible from top (while the furniture is assembled) or bottom such as bed and base because the product is elevated by turning the screw within and from top hereof. It could not be possible to use this leg for built-in refrigerators.

3. Comparison of the Document D3 with PCT/TR2005/000036:

The aim of D3 is to provide an adjustable support for a refrigerator door. One single adjuster is used at the bottom of the door to align and support the said door. It is not suitable built-in refrigerators.

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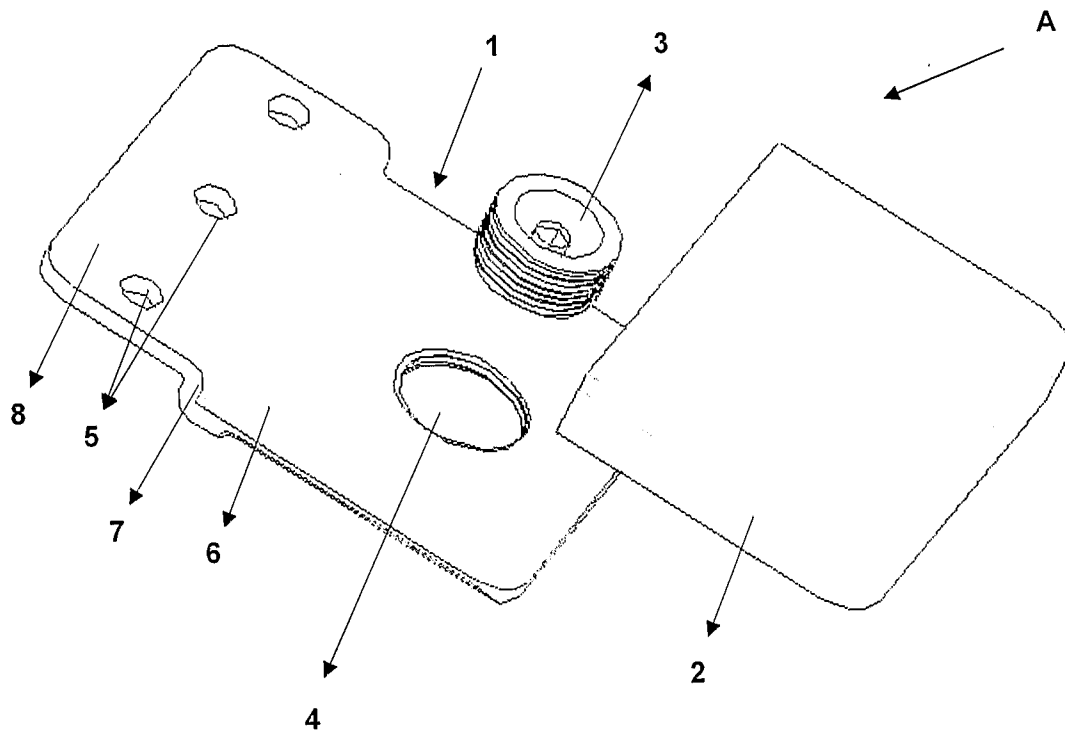


Figure - 1

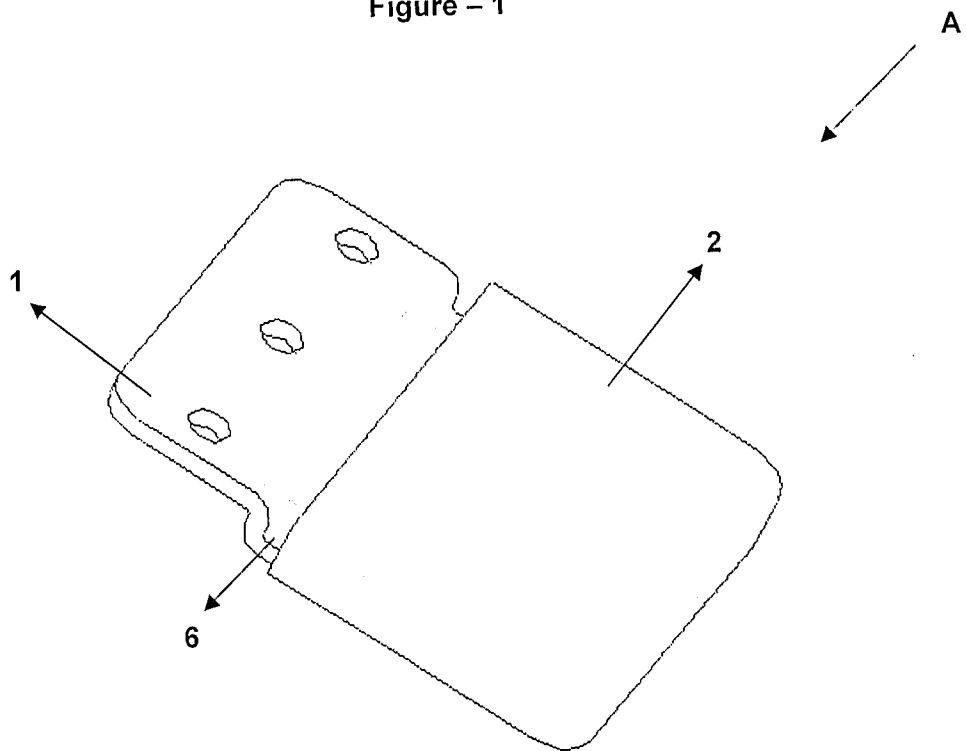


Figure - 2

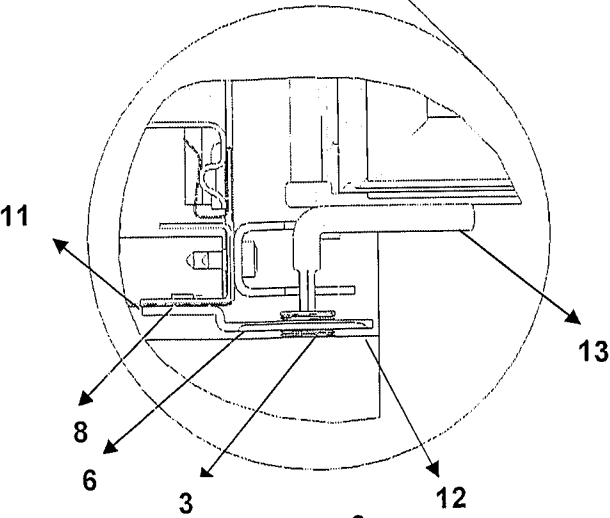
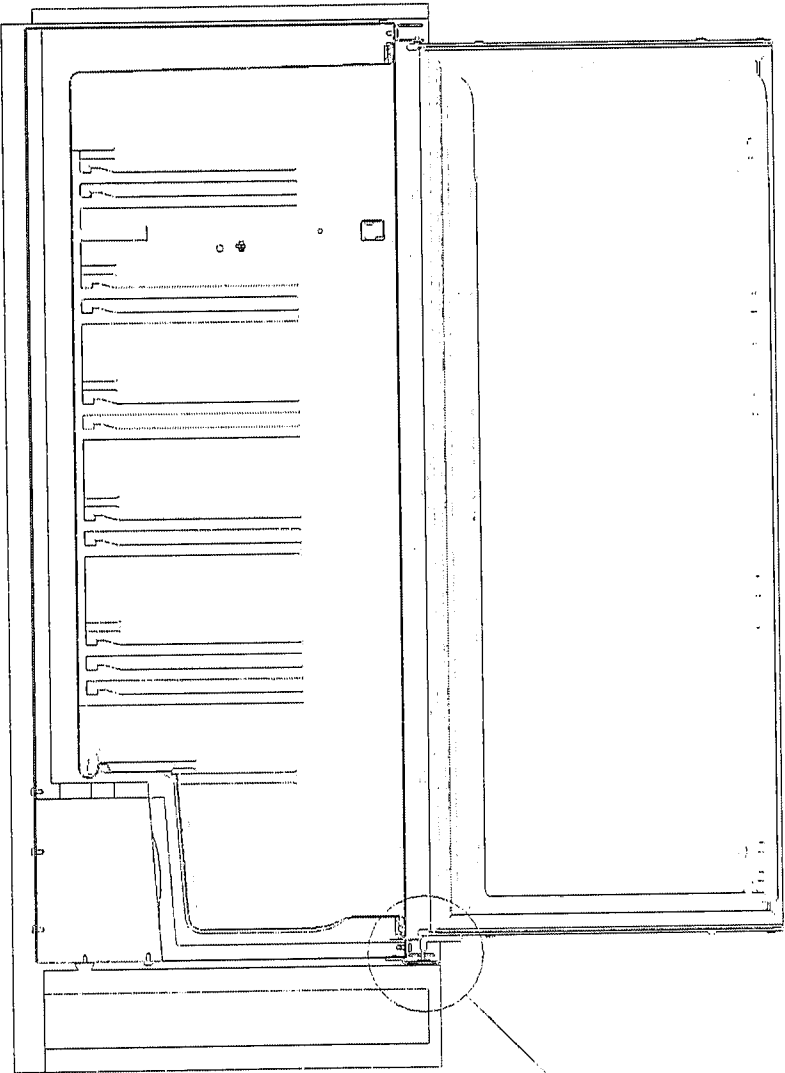


Figure - 3

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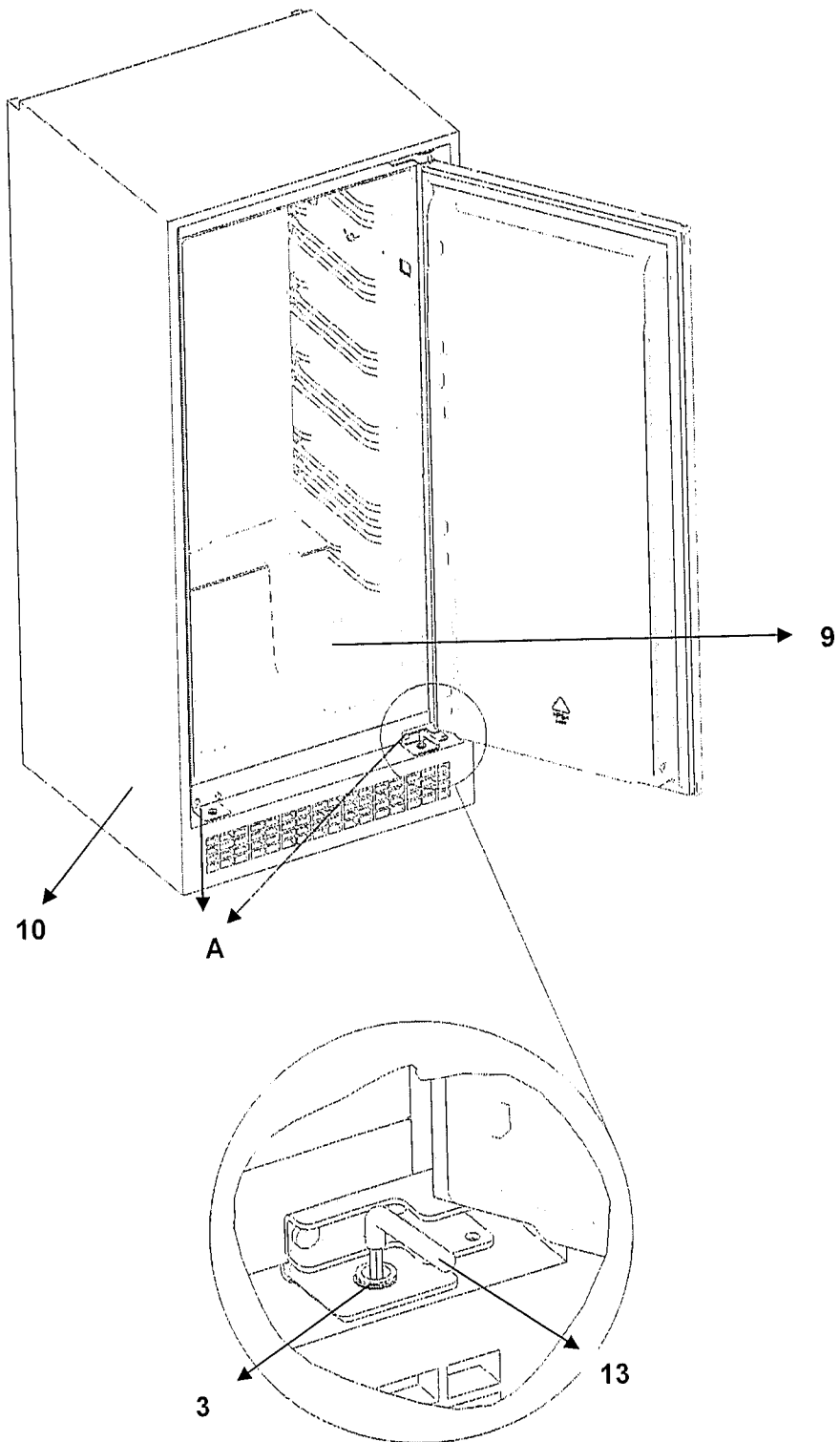


Figure - 4

4 / 4

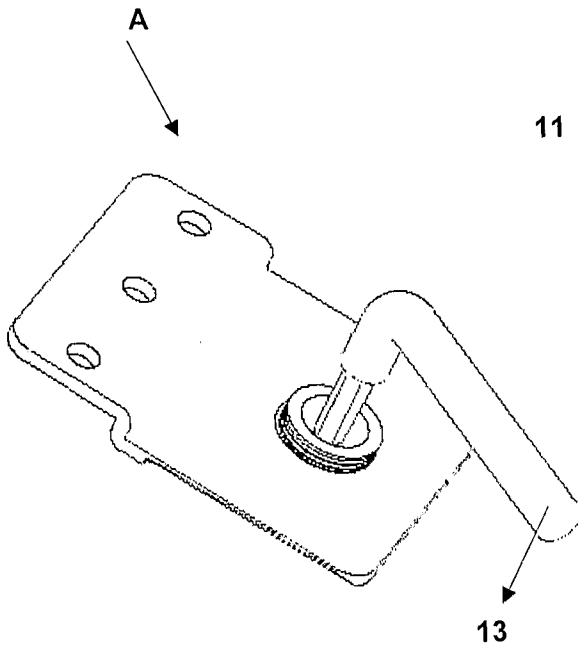


Figure - 5

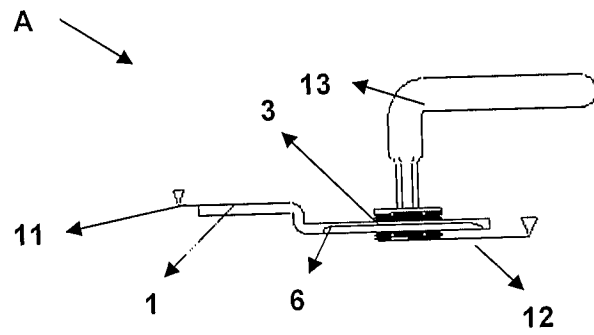


Figure - 6

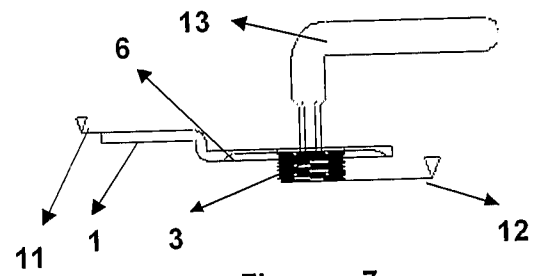


Figure - 7

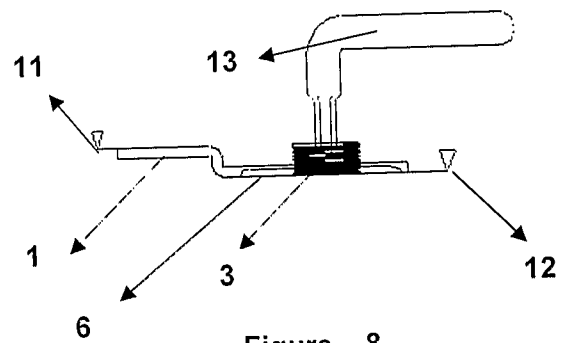


Figure - 8

INTERNATIONAL SEARCH REPORT

International application No

PCT/TR2005/000036

A. CLASSIFICATION OF SUBJECT MATTER
A47B91/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47B F25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 890 696 A (OZAWA ET AL) 6 April 1999 (1999-04-06) column 3, paragraph 3 - column 3, paragraph 4; figure 4 -----	1-3
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 20, 10 July 2001 (2001-07-10) & JP 2001 078846 A (JUFUKU SEIYA), 27 March 2001 (2001-03-27) abstract -----	1-3
X	DE 102 21 895 A1 (BSH BOSCH UND SIEMENS HAUSGERAETE GMBH) 27 November 2003 (2003-11-27) column 2, line 50 - column 3, line 25; figures 1,3 ----- -/--	1-4



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

31 March 2006

Date of mailing of the international search report

19/04/2006

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INTERNATIONAL SEARCH REPORT

International application No

PCT/TR2005/000036

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 680 326 A (SULTAN LEONARD) 8 June 1954 (1954-06-08) the whole document -----	1-3

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/TR2005/000036

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5890696	A	06-04-1999	JP 9287696 A	04-11-1997
JP 2001078846	A	27-03-2001	NONE	
DE 10221895	A1	27-11-2003	AU 2003270246 A1	02-12-2003
			BR 0310017 A	15-02-2005
			CN 1653241 A	10-08-2005
			WO 03097974 A2	27-11-2003
			EP 1506342 A2	16-02-2005
US 2680326	A	08-06-1954	NONE	