



(43) International Publication Date
20 December 2012 (20.12.2012)

(51) International Patent Classification:

F24C 7/08 (2006.01) *D06F 39/14* (2006.01)
F24C 15/04 (2006.01) *A47L 15/42* (2006.01)

(21) International Application Number:

PCT/EP2012/061350

(22) International Filing Date:

14 June 2012 (14.06.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

A 2011/06007 17 June 2011 (17.06.2011) TR

(71) Applicant (for all designated States except US): **ARCELIK ANONIM SIRKETI** [TR/TR]; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KARATAS, Haluk** [TR/TR]; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR). **KANDEMIR, Nihat** [TR/TR]; E5 Ankara Asfalti

Uzeri, Tuzla, 34950 Istanbul (TR). **MARASLI, Mehmet** [TR/TR]; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).

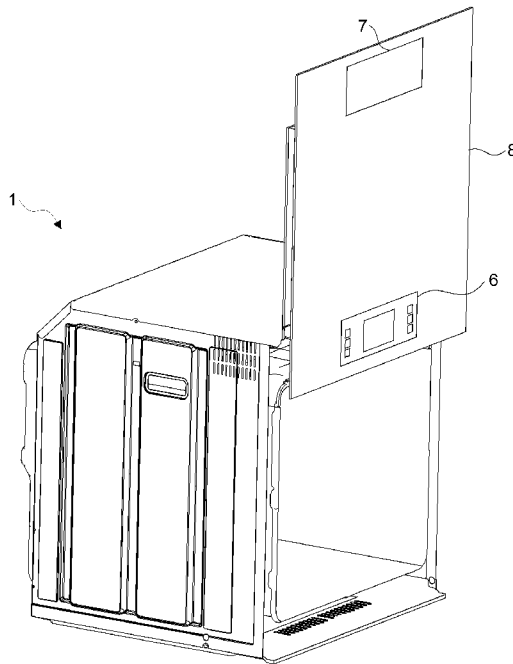
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,

[Continued on next page]

(54) Title: A HOUSEHOLD APPLIANCE COMPRISING A DOOR

Figure 4



(57) Abstract: The present invention relates to a household appliance (1) that allows the panel (3) to be viewed by means of a door (8) when the front of the body (2) is in the open or closed position.

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG). **Published:**

— with international search report (Art. 21(3))

Description**A HOUSEHOLD APPLIANCE COMPRISING A DOOR**

- [0001] The present invention relates to a household appliance comprising a door.
- [0002] In state of the art embodiments, the display and knobs providing the household appliance to be controlled are situated on the panel. Mostly, the panel is disposed on the front wall of the body. In household appliances having movable doors, the use of the panel by the user becomes difficult and it becomes essential for disposing the panel outside the movement area of the door. Viewing the display and the use of the knobs also become difficult for the user.
- [0003] In the state of the art United States Patent Document No. US4363315, a cooking device is described having a semitransparent surface allowing viewing of the displays on the panel by the user when the door is closed.
- [0004] In the state of the art German Patent Document No. DE102007012378, a cooking device is described having a door moving by sliding in the horizontal direction and a semitransparent surface allowing the displays disposed on the front wall to be viewed by the user when the door is in the closed position.
- [0005] The aim of the present invention is the realization of a household appliance comprising a door enabling the user to view the panel in the case the front side of the body is open or closed.
- [0006] The household appliance realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a door having a closed position wherein the front of the body is closed and an open position, changed from the closed position by moving, wherein access into the body is enabled, having a first part produced from a light reflective material, that at least partially overlaps with the panel when in the open position and allows the panel situated behind to be at least partially viewed.
- [0007] In an embodiment of the present invention, the household appliance comprises a door having a translucent part situated between the first part and the second part. The user is prevented from viewing the displays relating to the inactive functions by means of the door having the first part,

the second part and the translucent part but the interior of the body is allowed to be viewed.

- [0008] The household appliance comprises a door that is moved downwards, upwards, frontwards or rearwards automatically or manually. The door is pulled forwards and moved when in the closed position. When the first part overlaps with the panel, the door is pushed towards the panel and the first part is provided to stand one in front of the other with the panel. Thus, the front of the panel is closed when the door is in the open or closed position. When the door is in the open position, the physical elements are prevented from affecting the panel.
- [0009] In an embodiment of the present invention, the panel comprises a capacitive knob. When the user touches the panel, the static electricity of the user is transmitted to the capacitive knob by means of the first part or the second part.
- [0010] In an embodiment of the present invention, the door comprises the first part that absorbs light and the second part that absorbs light. Only the display or the knob on the panel is allowed to be viewed by the user by means of the first part or the second part.
- [0011] In an embodiment of the present invention, the household appliance comprises the first part or the second part that are formed by chemical methods.
- [0012] The model embodiments relating to the household appliance realized in order to attain the aim of the present invention are illustrated in the attached figures, where:
- [0013] Figure 1 – is the perspective view of a household appliance when the door thereof is in the closed position.
- [0014] Figure 2 – is the perspective view of a household appliance when the door thereof is in the open position.
- [0015] Figure 3 – is the perspective view of a household appliance when the door thereof is in the closed position.
- [0016] Figure 4 – is the perspective view of a household appliance when the door thereof is in the open position.
- [0017] Figure 5 – is the perspective view of a panel situated on the body.

- [0018] Figure 6 – is the perspective view of a panel.
- [0019] Figure 7 – is the perspective view of a household appliance comprising the door having an opening when the door is in the open position.
- [0020] The elements illustrated in the figures are numbered as follows:
1. Household appliance
 2. Body
 3. Panel
 4. Knob
 5. Display
 6. First part
 7. Second part
 8. Door
 9. Illumination source
 10. Opening
- [0021] The household appliance (1) of the present invention comprises a body (2), a panel (3) disposed on the body (2), at least one knob (4) situated on the panel (3), at least one display (5) disposed on the panel (3), a door (8) having a closed position (C) wherein the front of the body (2) is closed and an open position (O) changed from the closed position (C) by moving and whereby access into the body (2) is allowed, a first part (6) disposed on the door (8), produced from a material that allows light to pass, when the door (8) is in the open position (O) at least partially aligned with the panel (3) and allowing the panel (3) remaining behind to be at least partially viewed (Figure 1, Figure 2).
- [0022] The user moves the door (8) from the closed position (C) to the open position (O) for accessing into the body (2). When the door (8) is in the open position (O), the first part (6) bears against the front of the panel (3) and closes the front side of the panel (3). Thus, when the door (8) is opened, the physical elements like vapor, humidity, heat are prevented from damaging the panel (3). When the door (8) is in the open position (O), the display (5) is viewed by the user by means of the first part (6).
- [0023] In an embodiment of the present invention, the door (8) comprises a second part (7), produced from a material that allows passage of light,

when the door (8) is in the closed position (C) aligned at least partially with the panel (3) and allowing the panel (3) remaining behind to be at least partially viewed. When the door (8) is in the closed position (C) the second part (7) bears against the panel (3) and closes the front side of the panel (3). When the door (8) is in the closed position (C), the display (5) is viewed by the user by means of the second part (7) (Figure 3, Figure 4).

[0024] In an embodiment of the present invention, the door (8) comprises the first part (6) and the second part (7) that are produced from semitransparent material. The panel (3) is viewed by the user by means of the first part (6) and the second part (7) that are transparent and reflective.

[0025] In an embodiment of the present invention, the household appliance (1) comprises the door (8) that moves in the vertical direction and the first part (6) and the second part (7) situated around the vicinity of the upper or lower side of the door (8), being parallel to each other. The door (8) that remains in the closed position (C) is changed to the open position (O) by being moved in the upward or downward direction by the user.

[0026] In an embodiment of the present invention, the household appliance (1) comprises the door (8) that moves in the horizontal direction and the first part (6) and the second part (7) parallel to each other, situated at the vicinity of the right or left side of the door (8). When the door (8) is in the closed position (C), the user changes the door (8) to the open position (O) by moving it in the horizontal direction. The user is allowed to view the display (5), in the closed position (C) by means of the second part (7) and in the open position (O) by means of the first part (6).

[0027] In an embodiment of the present invention, the door (8) is moved by sliding. When in the closed position (C), the door (8) is changed to the open position (O) by being slid in the right, left, downwards or upwards direction by the user.

[0028] In an embodiment of the present invention, the door (8) is moved by rotating. The door (8) that remains in the closed position (C) is changed to the open position (O) by being rotated in the upwards, downwards, right or left direction by the user. When the door (8) is in the open position (O), the first part (6) comes in front of the panel (3) and closes the front side of the

panel (3).

- [0029] The panel (3) comprises a capacitive type knob (4) that remains behind the door (8) when the door (8) is in front of the panel (3), disposed so as to be in contact with the door (8), which generates signal by detecting the contact when the user touches on the door (8) and at least one illumination source (9) that provides the panel (3) to be illuminated. When the door (8) is in the closed position (C), the second part (7) bears against the panel (3). The knob (4) is illuminated by means of the illumination source (9). The light illuminating the knob (4) when the door (8) is in the closed position (C) is reflected from the second part (7) and the position of the knob (4) located behind the door (8) is viewed by the user. The light illuminating the knob (4) when the door (8) is in the open position (O) is reflected from the first part (6) and the position of the knob (4) located behind the door (8) is viewed by the user (Figure 5, Figure 6).
- [0030] In an embodiment of the present invention, the door (8) comprises the first part (6) having at least one opening (10) wherein the knob (4) is placed and moved and the second part (7) having the opening (10) wherein the knob (4) is located and moved inside. When the door (8) is in the closed position (C), the knob (4) is located inside the opening (10). The user pulls the door (8) towards himself/herself for accessing into the body (2) and meanwhile the knob (4) comes out from the opening (10). When the entire of knob (4) comes out of the opening (10), the user moves the door (8) and when the first part (6) comes in front of the panel (3), the user pushes the door (8). The door (8) is changed to the open position (O) and the knob (4) is seated in the opening (10) on the first part (6) (Figure 7).
- [0031] In an embodiment of the present invention, the panel (3) comprises a rotary type knob (4).
- [0032] In an embodiment of the present invention, the panel (3) comprises a push-release type knob (4).
- [0033] In an embodiment of the present invention, the household appliance (1) is an oven.
- [0034] In another embodiment of the present invention, the household appliance (1) is a washing machine.

- [0035] In an embodiment of the present invention, the household appliance (1) is a dryer.
- [0036] In another embodiment of the present invention, the household appliance (1) is a dishwasher.
- [0037] In an embodiment of the present invention, the household appliance (1) is a refrigerator.
- [0038] By means of the present invention, a household appliance (1) is realized that allows the user to view the panel (3) by means of the second part (7) when the door (8) is in the closed position (C) and by means of the first part (6) when the door (8) is in the open position (O). The household appliance (1) has a door (8) that closes the front of the panel (3) and protects the panel (3) from physical elements like vapor, humidity and heat.
- [0039] It is to be understood that the present invention is not limited by the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A household appliance (1) **comprising** a body (2), a panel (3) disposed on the body (2), at least one knob (4) situated on the panel (3), at least one display (5) disposed on the panel (3), a door (8) having a closed position (C) wherein the front of the body (2) is closed and an open position (O) changed from the closed position (C) by moving and whereby access into the body (2) is allowed, **characterized by** the door (8) having a first part (6) disposed on the door (8), produced from a material that allows light to pass, when the door (8) is in the open position (O) at least partially aligned with the panel (3) and allowing the panel (3) remaining behind to be viewed at least partially .
2. A household appliance (1) as in Claim 1, **characterized by** the door (8) having a second part (7), produced from a material that allows passage of light, when the door (8) is in the closed position (C) at least partially aligned with the panel (3) and allowing the panel (3) remaining behind to be at least partially viewed.
3. A household appliance (1) as in Claim 1 or 2, **characterized by** the first part (6) or the second part (7) that is produced from semitransparent material.
4. A household appliance (1) as in Claim 2 or 3, **characterized by** the door (8) that moves in the vertical direction and the first part (6) and the second part (7) situated parallel to each other, around the vicinity of the upper or lower side of the door (8).
5. A household appliance (1) as in Claim 2 or 3, **characterized by** the door (8) that moves in the horizontal direction and the first part (6) and the second part (7) situated parallel to each other, around the vicinity of the right or left side of the door (8).
6. A household appliance (1) as in any one of the Claims 1 to 5, **characterized by** the door (8) that is moved by sliding.
7. A household appliance (1) as in any one of the Claims 1 to 5, **characterized by** the door (8) that is moved by rotating.
8. A household appliance (1) as in any one of the above Claims, **characterized by** a capacitive type knob (4) that remains behind the door (8) when the door (8) is in front of the panel (3), disposed so as to be in contact with the door (8), which generates signal by detecting the contact when the door (8) is touched by the user and at least one illumination source (9) that provides the panel (3)

to be illuminated.

9. A household appliance (1) as in any one of the Claims 1 to 7, **characterized by** the first part (6) having at least one opening (10) wherein the knob (4) is located and moved and the second part (7) having the opening (10) wherein the knob (4) is located and moved.
10. A household appliance (1) as in any one of the above claims, which is an oven.
11. A household appliance (1) as in any one of the Claims 1 to 9, which is a washing machine.
12. A household appliance (1) as in any one of the Claims 1 to 9, which is a dryer.
13. A household appliance (1) as in any one of the Claims 1 to 9, which is a dishwasher.

Figure 1

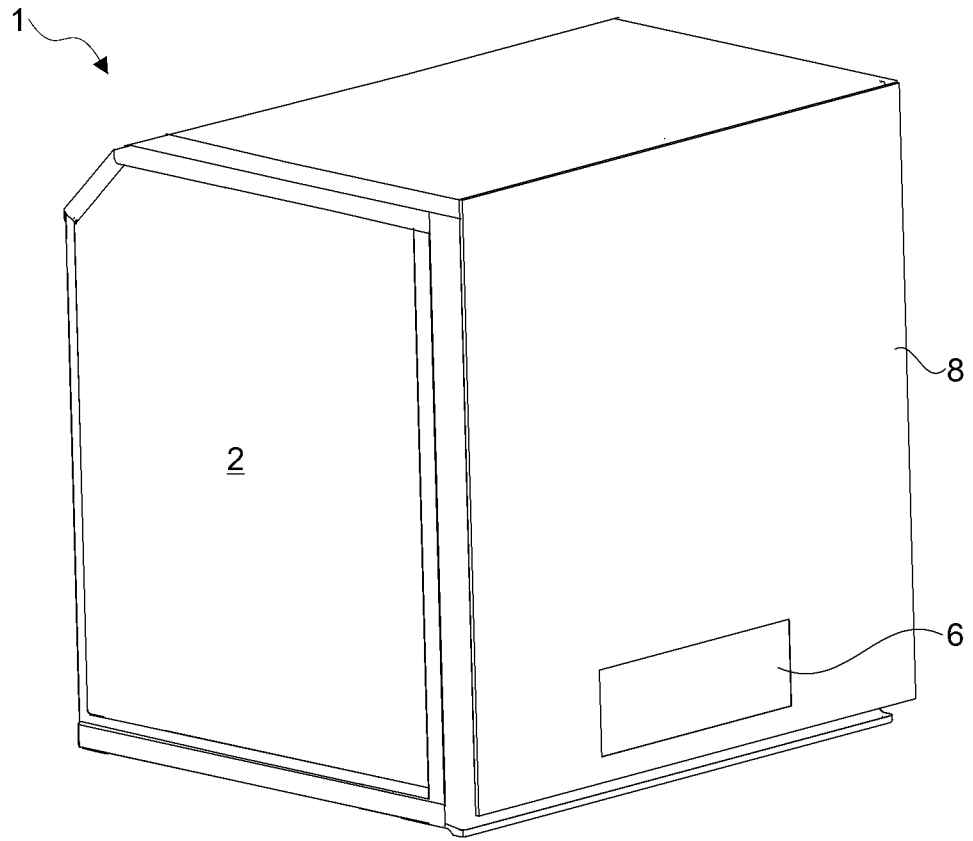


Figure 2

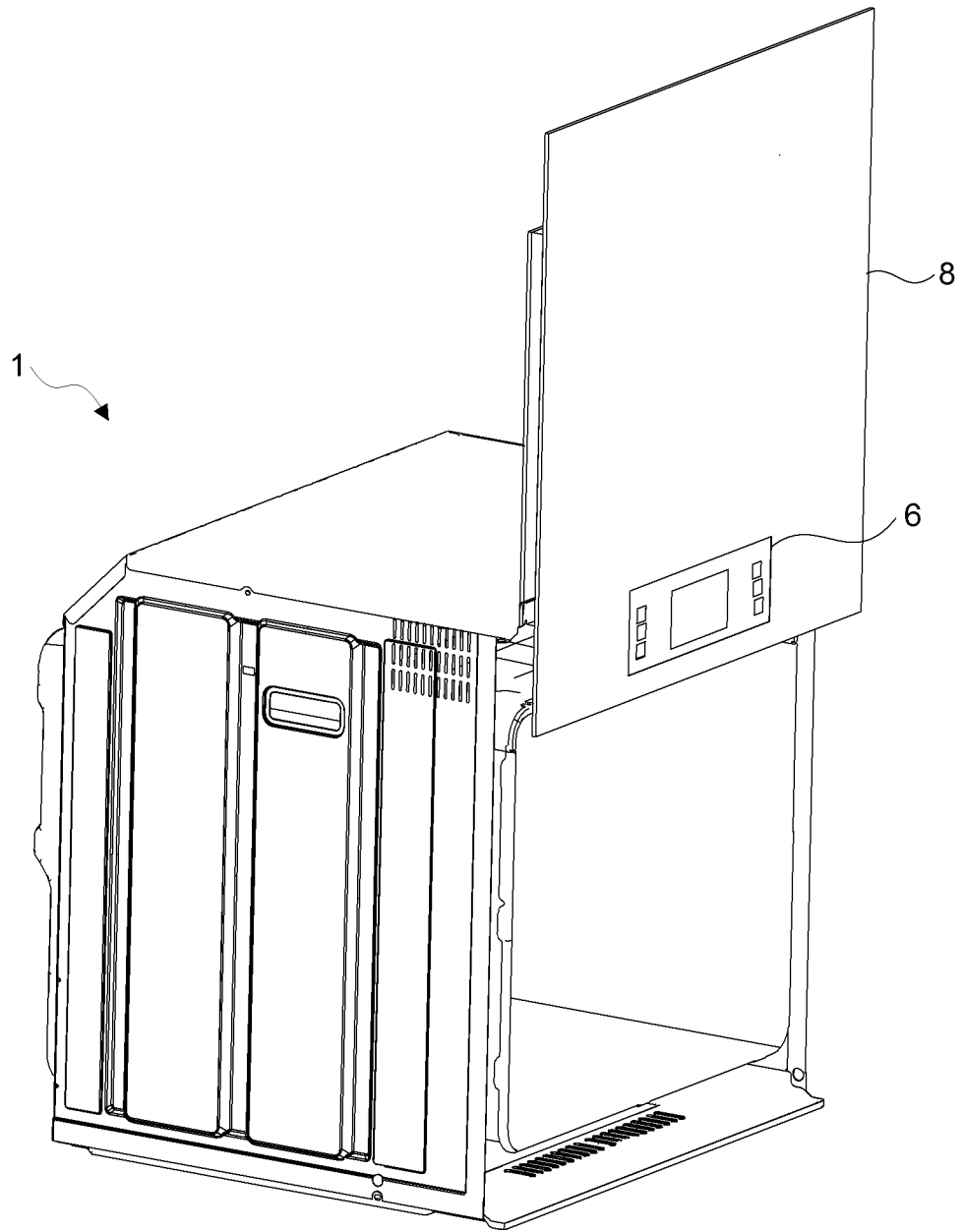


Figure 3

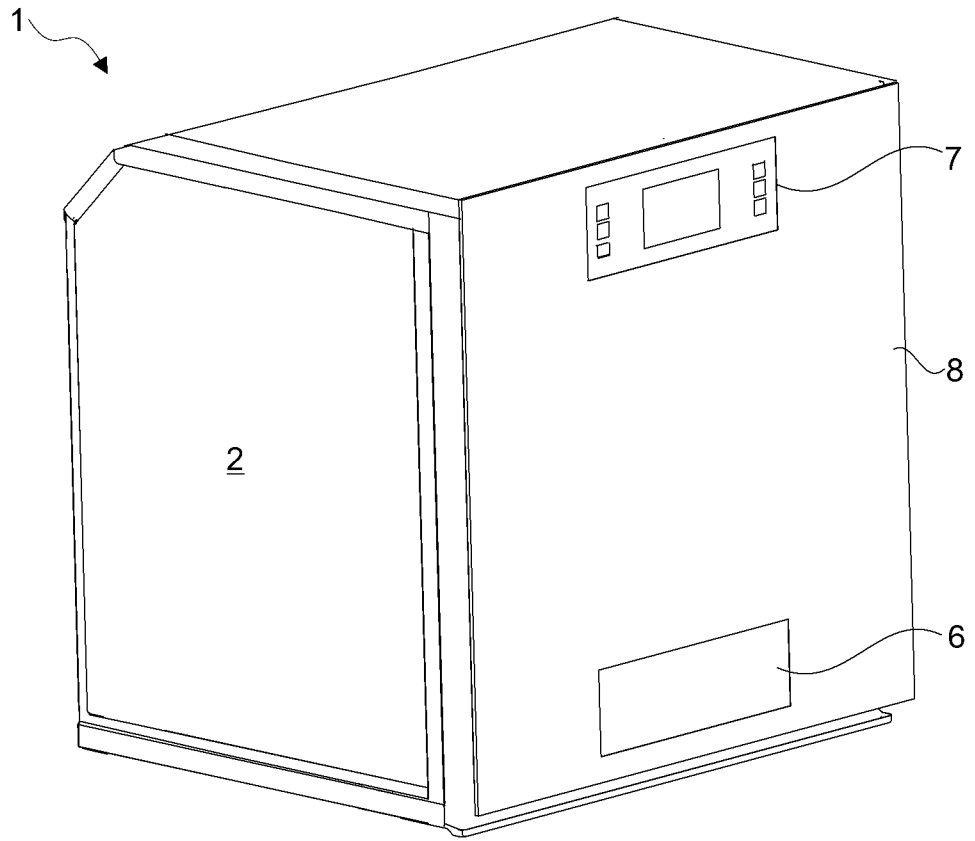


Figure 4

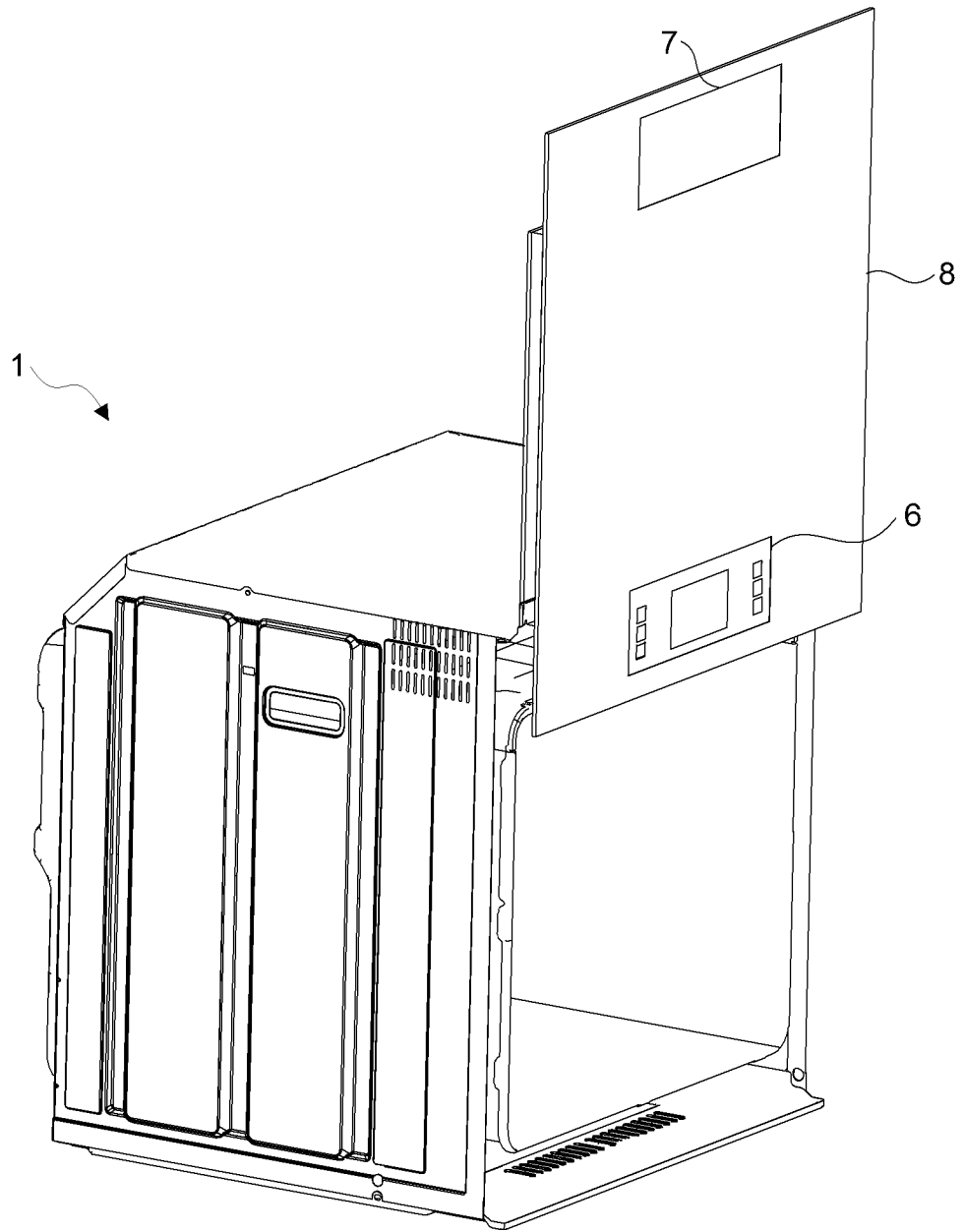


Figure 5

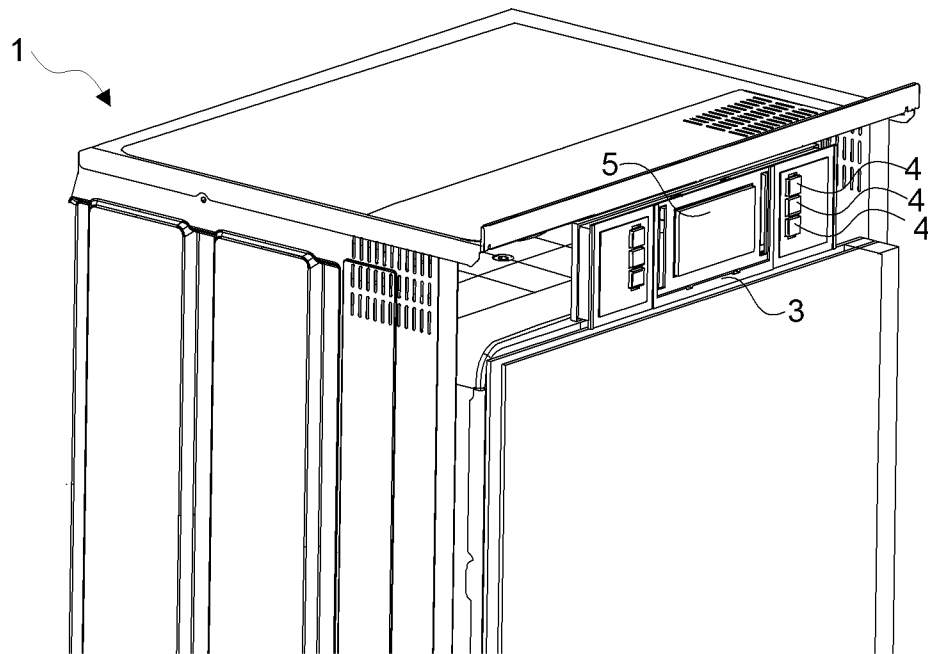


Figure 6

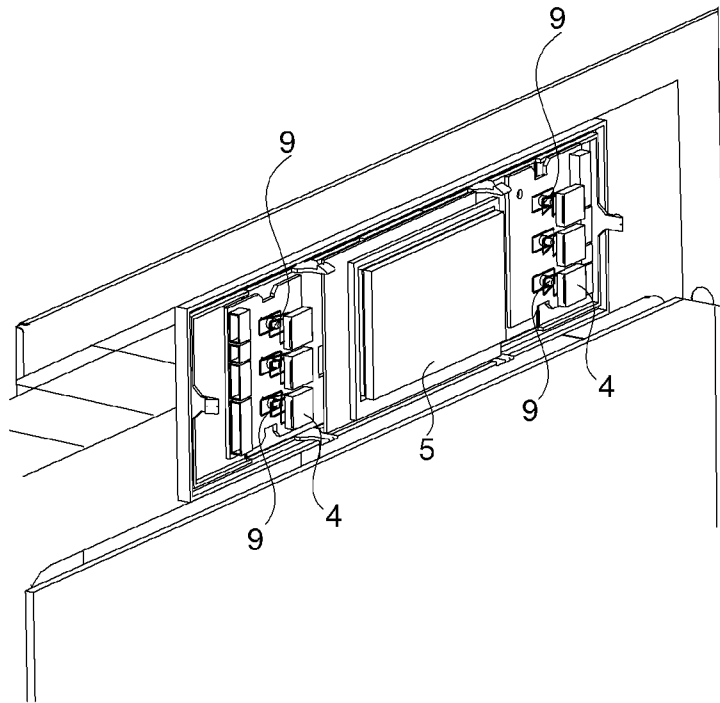
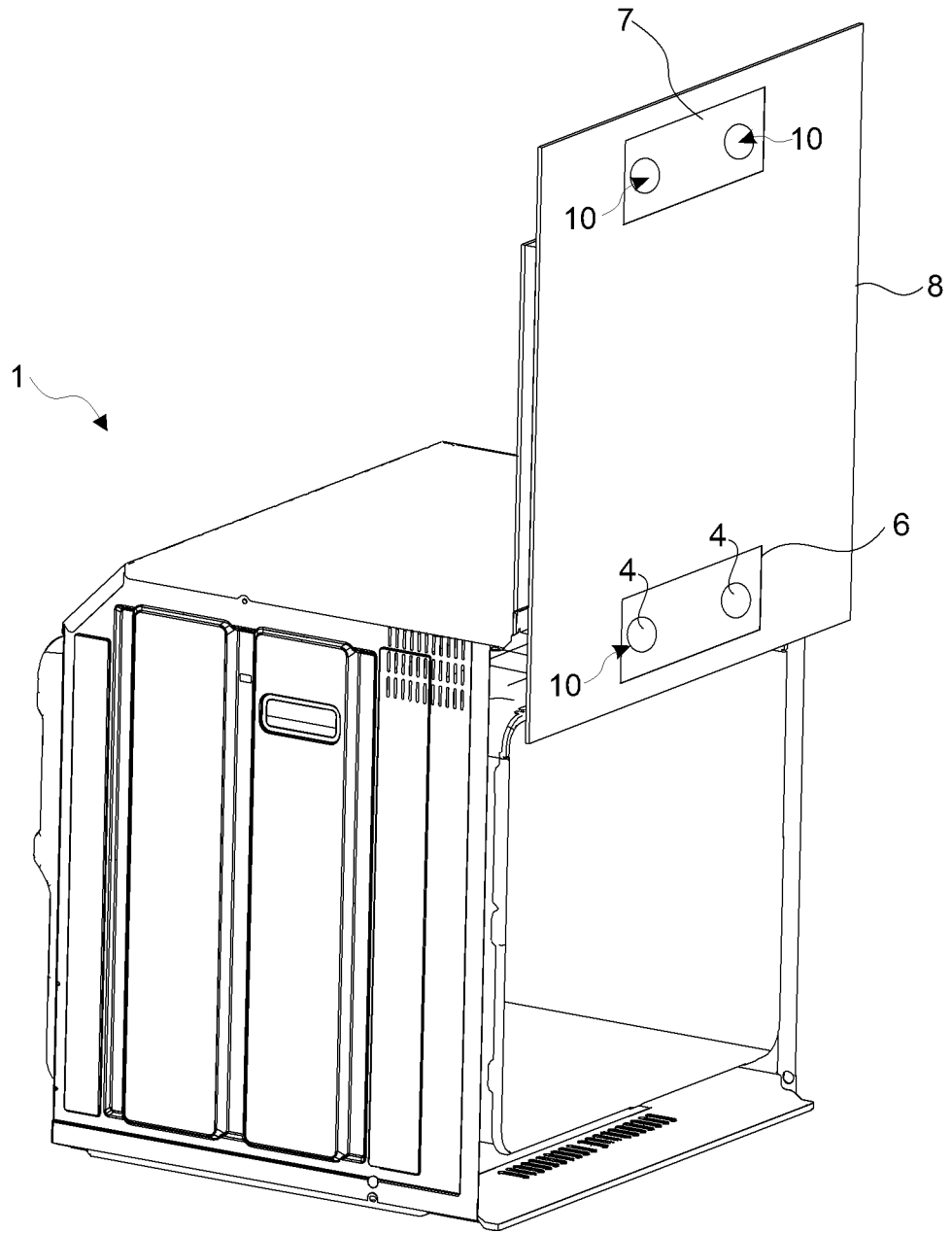


Figure 7



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/061350

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F24C7/08 F24C15/04 D06F39/14 A47L15/42
 ADD.
 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)
 D06F F24C A47L E05D

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 practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 766 596 B1 (BIENICK CRAIG [US] ET AL) 27 July 2004 (2004-07-27) figures 1,2	1,6-8, 10-13
A	----- SI 22 308 A (FIGELJ ALEKSANDER [SI]) 31 December 2007 (2007-12-31) figures 1-4	1-13
A	----- DE 10 2007 012378 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 18 September 2008 (2008-09-18) cited in the application figures 1-3 -----	1-13

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
---	---

Date of the actual completion of the international search 14 September 2012	Date of mailing of the international search report 25/09/2012
---	---

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Adant, Vincent
--	---

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/061350

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6766596	B1	27-07-2004	
		AT 420990 T	15-01-2009
		CA 2473769 A1	14-01-2005
		CN 1594712 A	16-03-2005
		EP 1498538 A1	19-01-2005
		ES 2320990 T3	01-06-2009
		JP 4719433 B2	06-07-2011
		JP 2005058753 A	10-03-2005
		KR 20050008497 A	21-01-2005
		US 6766596 B1	27-07-2004
SI 22308	A	31-12-2007	NONE
DE 102007012378 A1		18-09-2008	
		DE 102007012378 A1	18-09-2008
		EP 1970631 A2	17-09-2008