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

(11) EP 2 395 185 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
14.12.2011 Bulletin 2011/50

(21) Application number: **11005502.7**

(22) Date of filing: **20.09.2008**

(51) Int Cl.:
E05C 19/02 *(2006.01)* ***A47B 88/04*** *(2006.01)*
E05F 1/08 *(2006.01)* ***F24C 15/02*** *(2006.01)*
E05B 17/00 *(2006.01)* *E05B 65/46* *(2006.01)*

(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

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
08016602.8 / 2 166 184

(71) Applicant: **Electrolux Home Products Corporation N.V.**
1130 Brussels (BE)

(72) Inventors:
- **Weber, Tobias**
  91596 Burk (DE)
- **Böckler, Marco**
  91541 Rothenburg (DE)
- **Heisswolf, Bernd**
  91541 Rothenburg (DE)
- **Schäff, Gerhard**
  90556 Deberndorf (DE)
- **Kern, Klaus**
  91587 Adelshofen (DE)

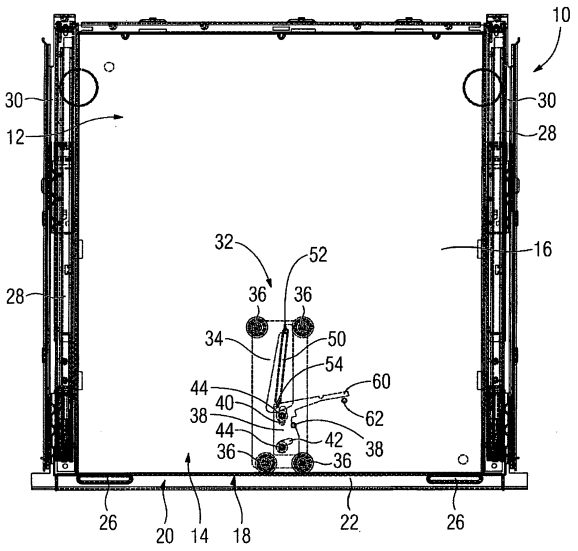
(74) Representative: **Baumgartl, Gerhard Willi et al**
Electrolux Dienstleistungs GmbH
Group Intellectual Property
90327 Nürnberg (DE)

Remarks:
This application was filed on 06-07-2011 as a divisional application to the application mentioned under INID code 62.

(54) Appliance, such as a domestic oven

(57) Appliance (10) comprising a cabinet (1) having an internal space (14) defined by a bottom wall (16), a top wall, a back wall and side walls, whereas an opening (18) is provided on the front side; a drawer-like door (20) for optionally opening and closing said opening (18), said drawer-like door (20) comprising a base plate (22), which is received in the internal space (14) of the cabinet (12) in the closed state of the door (20); and a closing device (32) for closing the door (20) with a predetermined closing force, whereas the closing device (32) comprises at least one spring (50), which provides said predetermined closing force; whereas the closing device (32) is arranged between the bottom wall (16) of the internal space (14) of the cabinet (12) and the base plate (22) of the door (20).

FIG 1



EP 2 395 185 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to an appliance, such as a domestic oven, comprising a cabinet having an internal space defined by a bottom wall, a top wall, a back wall and side walls, whereas an opening is provided on the front side; a drawer-like door for optionally opening and closing said opening, said drawer-like door comprising a base plate, which is received in the internal space of the cabinet in the closed state of the door; and a closing device for closing the door with a predetermined closing force.

BACKGROUND TECHNOLOGY

[0002] An oven of the above-mentioned kind is disclosed in DE-A-102 53 158. The oven comprises a cabinet defining an oven cavity with a charging opening for charging the open cavity with food stuff to be cooked; a drawer-like door for optionally opening and closing said charging opening in a substantially horizontal direction; and a sealing gasket arranged between the door and the oven cavity. The drawer-like door comprises a base plate, which is slidingly received in the oven cavity. More precisely, the door is fixed to sliding bars, which slide in guiding rails provided within the oven cavity in order to realize the horizontal opening and closing movement of the door. The guiding rails are inclined towards their rearmost free end in a downward direction relative to the horizontal, i.e. downwards towards the backwall of the cabinet, such that the self-weight of the door contributes to the door closing force closing the door. However, this arrangement cannot always guarantee a proper functioning of the sealing.

[0003] A further oven is described in DE-U-20 2007 007 450, which comprises a cabinet defining an oven cavity with a charging opening for charging the oven cavity with food stuff to be cooked; a drawer-like door for optionally opening and closing the charging opening in a substantially horizontal direction; and a sealing gasket arranged between the door and the oven cavity. The door is fixed to sliding bars, which slide inguiding rails in order to realize the horizontal opening and closing movement of the door. A closing device generating a closing force for closing the door is arranged at the guiding rails, which cooperates with the sliding bars. This closing device comprises spring elements fixed to the rearmost portions of the guiding rails. These spring elements draw the sliding bars at the end of their closing movement towards the backwall of the cabinet in order to press the inner wall of the door with a predetermined closing force against the sealing gasket, which is arranged around the charging opening of the cabinet. To ensure a smooth closing of the door, the cooking oven further comprises an attenuating means or damper, which counteracts the closing force of the closing device.

[0004] There is a general problem with respect to cooking ovens in that the depth of the cabinet is limited due to installation space standardisation and the tendency of downsizing the installation space of cooking ovens. Accordingly, also the extraction length of drawer-like doors is limited. Nevertheless, the extraction length of the doors should be as long as possible in order to ensure a comfortable handling with respect to the charging and discharging of the oven cavity.

[0005] However, according to DE-U-20 2007 007 450 the extraction length of the door is shortened due to the fact that the closing device is arranged between the backwall of the cabinet and the sliding bars. Moreover, the installation space for the closing device is limited. Accordingly, it may happen, that the closing device cannot guarantee a closing force, which is strong enough to ensure a proper functioning of the sealing gasket, in particular when an attenuation means is provided, which counteracts the closing force of the closing device.

[0006] Moreover, ovens are known, which comprise a closing device using pairs of magnets for providing the closing force, which come into contact with each other in the closed state of the door. However, the contact points of the magnets of each pair define stoppers, which do not allow an adaptation of the closing force to variations with respect to the elastic compression of the gasket, which are generated due to a varying degree of pollution of the gasket, an ageing of the gasket, etc. Accordingly, a changing elastic compression of the gasket cannot be compensated by the closing device. Thus, the closing force provided by the closing device is not stable in this case so that a proper closing function of the door cannot be guaranteed.

[0007] Starting from this prior art technology it is an object of the present invention to provide an appliance of the above mentioned type, which has an alternative configuration in order to eliminate one or more of the forgoing drawbacks.

DISCLOSURE OF THE INVENTION

[0008] This object is solved by providing an appliance according to claim 1. The dependent claims refer to individual embodiments of the present invention.

[0009] The present invention provides an appliance, such as an oven, a dishwasher, etc., comprising a cabinet having an internal space defined by a bottom wall, a top wall, a back wall and sidewalls, whereas an opening is provide on the front side through which the internal space is accessible. A drawer-like door is provided for optionally opening and closing said opening while performing a substantially linear and horizontal movement. The door comprises a base plate, which is received in the internal space of the cabinet in the closed state of the door, whereas the base plate may form a drip tray or the like. Moreover, the appliance comprises a closing device for closing the door with a predetermined closing force, whereas the closing force is provided by means of at least one spring.

According to the present invention, the closing device is arranged between the bottom wall of the internal space of the cabinet and the base plate of the door. Thus, a negative influence on the extraction length of the door can be avoided.

[0010] Preferably, the closing device of the appliance according to the present invention is designed in such a manner, that the spring is coupled with the opening movement of the door between a first position, in which the door is in its entirely closed state, and a second position, in which the door is in a partially opened state. Accordingly, the spring is further tensioned when opening the door between the first position and the second position. Moreover, the closing device is designed in such a manner, that the spring is decoupled from the opening movement of the door, when the opening movement is continued between the second position and a third position, in which the door is in its entirely opened state, whereas the tension state of the spring is maintained while moving the door between the second and the third position. Furthermore, the closing device is designed in such a manner, that the spring is uncoupled from the closing movement of the door between the third and the second position, and that the spring is coupled to the closing movement of the door, when the closing movement of the door continues from the second position to the first position, such that the spring supports the closing movement of the door between the second position and the first position and provides the predetermined closing force in the first position. The second position is preferably chosen in such a manner, that only the last part of the closing movement of the door and the first part of the opening movement of the door are performed under the influence of the load of the spring.

[0011] Preferably, the closing device of the appliance according to the present invention comprises a movable unit, which is fixed to the cabinet of the appliance and comprises guiding means for guiding a movement of the movable unit relative to the cabinet between a first location, in which the door is in its first position, and a second location, in which the door is in its second position. Moreover, a carrier is provided, which is fixed to the door and carries the movable unit from the first location to the second location, when the door is moved from the first position to the second position. The spring, which is provided for generating the predetermined closing force, is fixed to the movable unit and to the cabinet in such a manner, that it is further tensioned when the movable unit is moved from its first location towards its second location. Moreover, the closing device comprises locking means for locking the movable unit in its second location in order to maintain the tensioned state of the spring. Furthermore, releasing means are provided, which release the lock of the locking means when reaching the second position of the door during its closing movement, such that the movable unit is returned to its first location under the restoring force of the spring.

[0012] The movable unit preferably comprises a snap-fit, which is engaged by the carrier during the opening movement of the door between the first position and the second position. Accordingly, the movable unit follows the movement of the carrier until the door reaches its second position.

[0013] Moreover, the movable unit is advantageously fixed to the cabinet by means of sliding bushings, which extend through guiding slots formed in the moveable unit as guiding means. Accordingly, the relative movement between the movable unit and the cabinet is defined by the length and the form of the guiding slot.

[0014] The locking means is preferably provided by means of a curved or angled design of at least one guiding slot and by means of the sliding bushing extending therethrough, whereas the sling bushing is locked in a curved or angled section of the slot.

[0015] Preferably, the releasing means is provided by means of a projection, which is fixed to or made integral with the door, in particular with the underside of the base plate of the door and a lever, which is fixed to or made integral with the movable unit, whereas the projection moves the lever, when the door reaches its second position during its closing movement, so that the movable unit is moved in such a manner that the lock of the locking means is released.

[0016] The closing device advantageously comprises a base, which is fixed to the cabinet, and the moveable unit is fixed to the base and relatively movable to the base between the first and the second location, whereas the spring is fixed to the base and to the movable unit. By providing the closing device with a separate base it is not necessary to directly fix the movable unit and the spring to the cabinet of the appliance. Accordingly, the bottom wall of the cabinet does not have to be prepared for such fixation. Therefore, the production and installation may be simplified.

[0017] Preferably, the closing device is produced from metallic and/or plastic material, in particular from heat resistant and/or ridgid material.

[0018] According to a preferred aspect of the present invention, the appliance is an oven.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

[0019] The detailed configuration, features and advantages of the present invention will become apparent in the course of the following description with reference to the accompanying drawings.

Figure 1 is a top sectional view of an appliance according to a first embodiment of the present invention, which shows the appliance in a state, in which the door of the appliance is arranged in its entirely closed stated;

Figure 2 is a top sectional view of the appliance shown in figure 1, whereas the door is arranged in

a partially opened state;

Figure 3 is a sectional side view showing the lower portion of the appliance;

Figure 4 is an enlarged top view of the closing device of the appliance shown in figures 1 to 3; and

Figure 5 is a side view of the closing device shown in figure 4.

BEST MODE FOR CARRYING OUT THE INVENTION

[0020] Below, one embodiment of an appliance of the present invention will be described with reference to the figures. In the figures, like parts are denoted by like reference numerals and redundant description will be omitted.

[0021] The figures 1 to 5 show an embodiment of an appliance 10 according to the present invention which is provided in form of an oven. The oven 10 comprises a cabinet 12 having an internal space 14 for receiving food stuff therein. The internal space 14 is defined by a bottom wall 16 as well as by a top wall, a back wall and two side walls, which are not shown in the figures. The internal space 14 has an opening 18 for charging the oven 10, which is provided on the front side of the oven 10. Moreover, the oven 10 comprises a drawer-like door 20 for optionally opening and closing the opening 18. The door 20 is formed by a horizontally extending base plate 22 and a vertically extending front plate 24, which are fixed to each other. On top of the vertically extending front plate 22 recessed grips 26 are provided, which can be gripped by a user in order to open and close the door 20. The door 20 is fixed to sliding bars 28, which are received and guiding by guiding rails 30, which in turn are fixed to the right and left sides of the bottom wall 16 of the internal space 14. Accordingly, the door 20 can be opened and closed by performing a substantially linear and horizontal movement. As it is shown in figures 1 to 3, a closing device 32 is arranged within the internal space 14 of cabinet 12. The closing device 32 comprises a plate-like base 34, which is fixed to the bottom wall 16 by means of sheet metal screws 36. Moreover, the closing device 32 comprises a movable unit 38 made from sheet metal, which is fixed to the base 34 in such a manner, that it can perform a combined linear and pivotal movement relative to the base 34. For this purpose, a straight extending slot 40 and an angled slot 42 are provided in the movable unit 38. Sliding bushings 44 and 46 are inserted through these slots 40 and 42 and fixed to the base 34 by means of screws 46 and nuts 48. Accordingly, the sliding bushings 44 serve as a guiding means for guiding the combined linear and pivotal movement of the movable unit 38 relative to the base 34. Moreover, the closing device 32 comprises a helical spring 50 having two free ends which are fixed to hook elements 52 and 54, which are made integral with the base 34 and the movable unit 38, respectively. The length of the spring 50 is chosen in such a manner, that the spring 50 is tensioned between the base 34 and the movable unit 38 in the entirely closed state of the door 20, which will be described in more detail below. On the side of the movable unit 38 a snap-fit 56 is provided, which can receive a carrier 58 projecting downwards from the underside of the horizontally extending base plate 22 of the door 20. Furthermore, the movable unit 38 comprises a lever 60, which extends sideways from the movable unit 38. For operating the lever 60, a projection 62 is provided on the underside of the horizontally extending base plate 22.

[0022] Below, the operation of the closing device 32 will be described with reference to figures 1 and 2, which are sectional top views of the oven 10 along a section plane extending between the bottom wall 16 of the internal space 14 and the horizontal base plate 22 of the door 20, whereas figure 1 shows the oven 10 in a entirely closed state of the door 20 and figure 2 shows the oven 10 in a state, in which the door 20 is partially opened.

[0023] With reference to figure 1, the horizontal extending base plate 22 of the door 20 is engaged with the movable unit 38 by means of the carrier 58, which is hooked in the snap-fit 56 of the movable unit 38. Moreover, the spring 50 is in a biased state, such that it generates a predetermined closing force, which presses the vertical extending front plate 24 of the door 20 against the cabinet 12, more precisely against a gasket (not shown) arranged around the opening 18 of the cabinet 12. Accordingly, the tight seal is provided between the cabinet 12 and the door 20 as long as the movable unit 38 is arranged in the first location shown in figure 1.

[0024] When the door 20 is opened starting from the state shown in figure 1, the movable unit 38 follows the opening movement of the door, because the carrier 58 and the snap-fit 56 are still engaged with other such that the movable unit 38 is drawn by the carrier 58. During this movement, the movable unit 38 is guided by the guidance resulting from the sliding bushings 44 and the slots 40 and 42. Accordingly, the movable unit 38 performs a combined linear and pivotal movement while further tensioning the spring 50. This movement is stopped in the second location of the movable unit 38, in which the sliding bushes 44 reach the ends of the slots 40 and 42. In this second location, the leading sliding bushing 44 is locked within the angled end of the slot 42. Accordingly, a locking means is provided for locking the second location of the movable unit 38 in order to maintain the tensioned state of the spring 50. Moreover, the carrier 58 is decoupled from the snap-fit 56 in the second location of the movable unit 88, as soon as the movable unit 38 is locked in position. Accordingly, the movable unit 38 does no longer follow the opening further movement of the door 20.

[0025] When closing the door 20 again, the projection 62 comes into engagement with the lever 60 of the movable unit 38 shortly prior to the end of the closing movement of the door 20. The projection 62 presses against

the lever 60, such that the movable unit 38 is slightly turned in order to release the lock provided by the leading sliding bushing 44 and the angled slot 42. As soon as the lock is released, the movable unit 38 is drawn towards the completely closed position of the door 20 by means of the restoring force of the spring 50, until a entirely closed position of the door 20 is reached as shown in figure 1. In this condition, the door 20 is held closed with a predetermined closing force generated by the spring 50, as it was described above.

Claims

1. Appliance (10) comprising

- a cabinet (1) having an internal space (14) defined by a bottom wall (16), a top wall, a back wall and side walls, wherein an opening (18) is provided on the front side,
- a drawer-like door (20) for optionally opening and closing said opening (18), said drawer-like door (20) comprising a base plate (22), which is received in the internal space (14) of the cabinet (12) in the closed state of the door (20); and
- a closing device (32) for closing the door (20) with a predetermined closing force, wherein the closing device (32) comprises at least one spring (50), which provides said predetermined closing force,

characterized in that

- the closing device (32) is arranged between the bottom wall (16) of the internal space (14) of the cabinet (12) and the base plate (22) of the door (20).

2. Appliance (10) according to claim 1, **characterized in that** a gasket is provided between the door (20) and the cabinet (12) and/or **characterized in that** the closing device (32) is produced from metallic and/or plastic material, in particular from heat resistant and/or rigid material, and/or **characterized in that** due to the closing device being arranged between the bottom wall of the internal space of the cabinet and the base plate of the door, a negative influence on the extraction length of the door being avoided and/or **characterized in that** through the opening the internal space is accessible and/or **characterized in that** the base plate forms a drip tray or the like.

3. Appliance (10) according to claim 1 or 2, **characterized in that** the closing device (32) is designed in such a manner, that

- the spring (50) is coupled with the opening movement of the door (20) between a first position, in which the door (20) is in a entirely closed state, and a second position, in which the door (20) is in a partially opened state, such that the spring (50) is further tensioned when opening the door (20) between the first position and the second position,
- that the spring (50) is decoupled from the opening movement of the door (20), when the opening movement is continued between the second position and a third position, in which the door (20) is in its entirely opened state, wherein the tensioned state of the spring (50) is maintained while moving the door (20) between the second and the third position,
- that the spring (50) is decoupled from the closing movement of the door (20) between the third and the second position, and
- that the spring (50) is coupled to the closing movement of the door (20), when the closing movement of the door (20) continues from the second position to the first position, such that the spring (50) supports the closing movement of the door (20) between the second position and the first position and provides the predetermined closing force in the first position.

4. Appliance (10) according to one of the foregoing claims, **characterized in that** the closing device (32) comprises

- a movable unit (32), which is preferably made from sheet metal and which is fixed to the cabinet (12) of the appliance (10) and comprises guiding means (42, 44) for guiding a movement of the movable unit (38) relative to the cabinet (12) between a first location, in which the door (20) is in its first position, and a second location, in which the door (20) is in its second position,
- a carrier (58), which is fixed to the door (20) and carries the movable unit (38) from the first location to the second location, when the door (20) is moved from the first position to the second position;
- a or the spring (50) for providing the predetermined closing force, which is fixed to the movable unit (38) and to the cabinet (12) in such a manner, that it is further tensioned when the movable unit (38) is moved from its first location towards its second location,
- locking means (42, 44) for locking the movable unit (38) in its second location in order to maintain the tensioned state of the spring (50); and
- releasing means (60) for releasing the lock of the locking means (42, 44) when reaching the second position of the door (20) during its closing movement, such that the movable unit (38) is returned to its first location under the restoring force of the spring (50).

5. Appliance (10) according to claim 4, **characterized in that** the movable unit (38) comprises a snap-fit (56), which comes into engagement with the carrier (58) during the opening movement of the door (20) between the first position and the second position,

6. Appliance according to claim 5, **characterized in that** the carrier (58) is hooked in the snap-fit (56) of the movable unit (38) and/or **characterized in that** the movable unit follows the movement of the carrier until the door reaches its second position and/or **characterized in that** the horizontal extending base plate (22) of the door (20) is engaged with the movable unit (38) by means of the carrier (58) and/or **characterized in that** the carrier (58) is decoupled from the snap-fit (56) in the second location of the movable unit (38), as soon as the movable unit (38) is locked in position, preferably wherein, accordingly, the movable unit (38) does no longer follow the opening further movement of the door (20).

7. Appliance (10) according to one of claims 4 to 6, **characterized in that** the movable unit (38) is fixed to the cabinet (12) by means of sliding bushings(44), which extend through guiding slots (42, 44) provided as guiding means, wherein in particular the relative movement between the movable unit and the cabinet is defined by the length and the form of the guiding slot.

8. Appliance (10) according to claim 7, **characterized in that** the locking means (42, 44) is provided by means of a curved or angled design of the guiding slot (42) and by means of the sliding bushing (44) extending therethrough, wherein in particular the sliding bushing is locked in a curved or angled section of the slot and/or wherein in particular a straight extending slot (40) and an angled slot (42) are provided in the movable unit (38) and sliding bushings (44 and 46) are inserted through these slots (40 and 42) and fixed to the base (34) by means of screws (46) and nuts (48).

9. Appliance (10) according to any one of claims 4 to 8, **characterized in that** the releasing means (60, 62) is provided by means of a projection (62), which is fixed to or made integral with the door (20), and a lever (60), which is fixed to or made integral with the movable unit (38), wherein the projection (62) and the lever (60) come into engagement with each other or the projection moves the lever, when the door (20) reaches its second position during its closing movement, and or so that the movable unit (38) is moved due to this engagement in such a manner that the lock of the locking means (42, 44) is released, wherein in particular the lever (60) extends sideways from the movable unit (38) and/or the projection (62) is provided for operating the lever (60).

10. Appliance (10) according to any of claims 4 to 9, **characterized in that** the closing device (32) comprises a, in particular plate-like, base (34), which is fixed to the cabinet (12), for instance by means of sheet metal screws (36), wherein the movable unit (38) is fixed to the base (34), while allowing a movement of the movable unit (38) relative to the cabinet (12) between the first and the second location, the movable unit being preferably relatively movable to the base between the first and the second location, and the spring (50) is fixed to the base (34) and the movable unit (38),
wherein in particular by providing the closing device with a separate base it is not necessary to directly fix the movable unit and the spring to the cabinet of the appliance and, accordingly, the bottom wall of the cabinet does not have to be prepared for such fixation.

11. Appliance (10) according to one of the preceding claims, **characterised in that** the carrier (58) projects downwards from the underside of the base plate (20)
and/or **characterised in that** the spring is a helical spring (50) having two free ends which are fixed to hook elements (52 and 54), which are made integral with the base (34) and the movable unit (38), respectively and/or **characterised in** the length of the spring (50) is chosen in such a manner, that the spring (50) is tensioned between the base (34) and the movable unit (38) in the entirely closed state of the door (20)
and/or **characterized in that** the spring (50) is in a biased state, such that it generates a predetermined closing force, which presses the vertical extending front plate (24) of the door (20) against the cabinet (12), in particular against the gasket arranged around the opening (18) of the cabinet (12), wherein, accordingly, the tight seal is provided between the cabinet (12) and the door (20) as long as the movable unit (38) is arranged in the first location.

12. Appliance (10) according to one of the preceding claims, **characterized in that** the door (20) is formed by the horizontally extending base plate (22) and a vertically extending front plate (24), which are fixed to each other, wherein in particular on top of the vertically extending front plate (22) recessed grips (26) are provided, which can be gripped by a user in order to open and close the door (20), and/or **characterized in that** the door (20) is fixed to sliding bars (28), which are received and guided by guiding rails (30), which in turn are fixed to the right and left sides of the bottom wall (16) of the internal space (14), so that in particular the door (20) can be opened and closed by performing a substantially linear and horizontal movement,
and/or **characterized in that** the second position is

preferably chosen in such a manner, that only the last part of the closing movement of the door and the first part of the opening movement of the door are performed under the influence of the load of the spring.

13. Appliance (10) according to one of the preceding claims, **characterized in that** when the door (20) is opened the movable unit (38) follows the opening movement of the door, because the carrier (58) and the snap-fit (56) are still engaged with other such that the movable unit (38) is drawn by the carrier (58), wherein preferably during this movement, the movable unit (38 is guided by the guidance resulting from the sliding bushings (44) and the slots (40 and 42) and, accordingly, performs a combined linear and pivotal movement while further tensioning the spring (50) and wherein this movement is stopped in the second location of the movable unit (38), in which the sliding bushes (44) reach the ends of the slots (40 and 42) and in this second location, the leading sliding bushing (44) is locked within the angled end of the slot (42) and/or wherein a locking means is provided for locking the second location of the movable unit (38) in order to maintain the tensioned state of the spring (50) and/or **characterised in that** when closing the door (20) again, the projection (62) comes into engagement with the lever (60) of the movable unit (38) shortly prior to the end of the closing movement of the door (20) and/or the projection (62) presses against the lever (60), such that the movable unit (38) is slightly turned in order to release the lock provided by the leading sliding bushing (44) and the angled slot (42) and/or as soon as the lock is released, the movable unit (38) is drawn towards the completely closed position of the door (20) by means of the restoring force of the spring (50), until an entirely closed position of the door (20) is reached and the door (20) is held closed with a predetermined closing force generated by the spring (50).

14. Appliance (10) according to one of the foregoing claims, **characterized in that** the appliance (10) is an oven, wherein in particular the cabinet (12) has an internal space (14) for receiving food stuff therein.

FIG 1

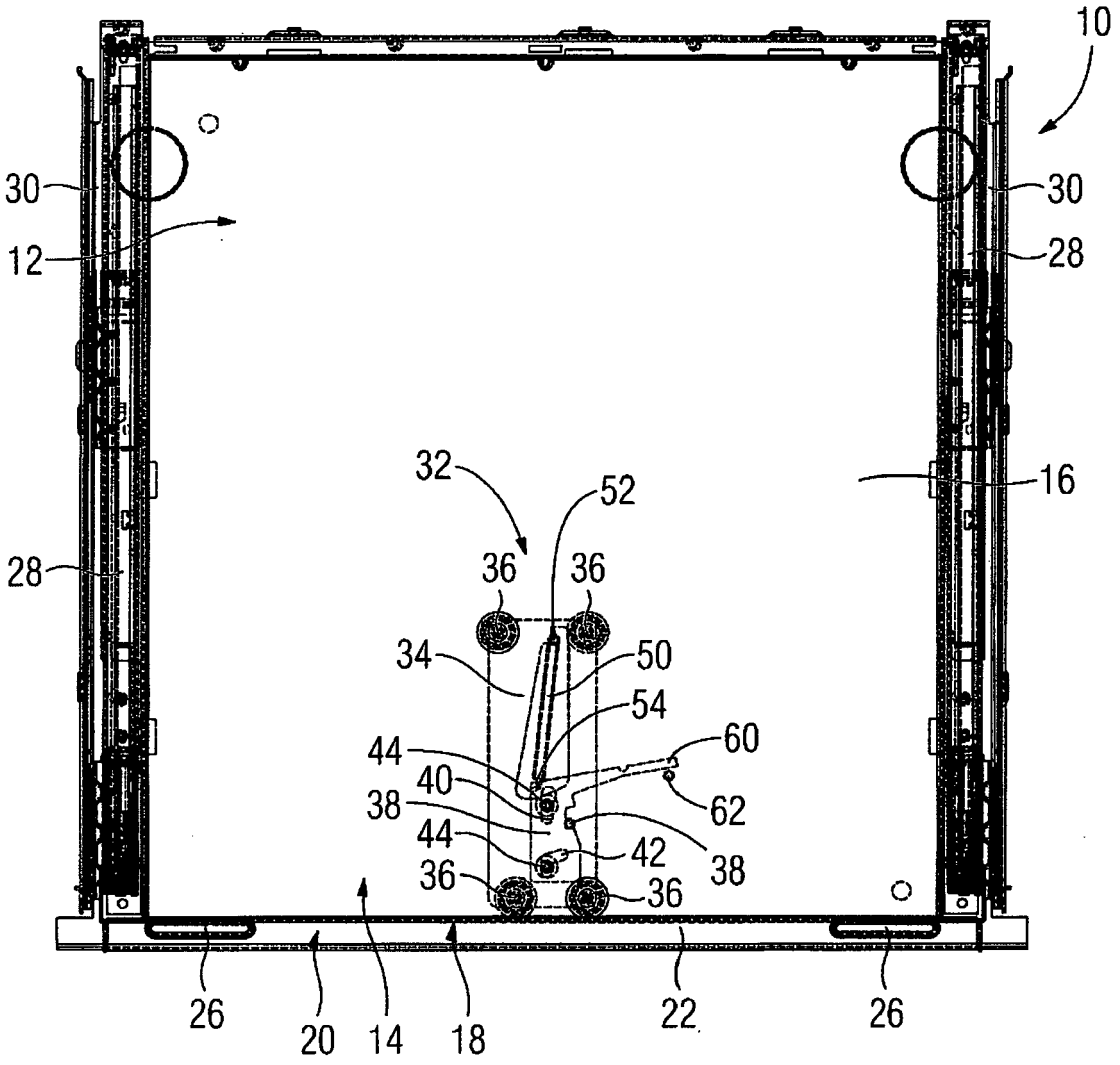

10
30
12
30
28
32
52
16
28
36
36
34
50
54
44
60
40
62
38
44
42
38
36
36
26
20
14
18
22
26

FIG 2

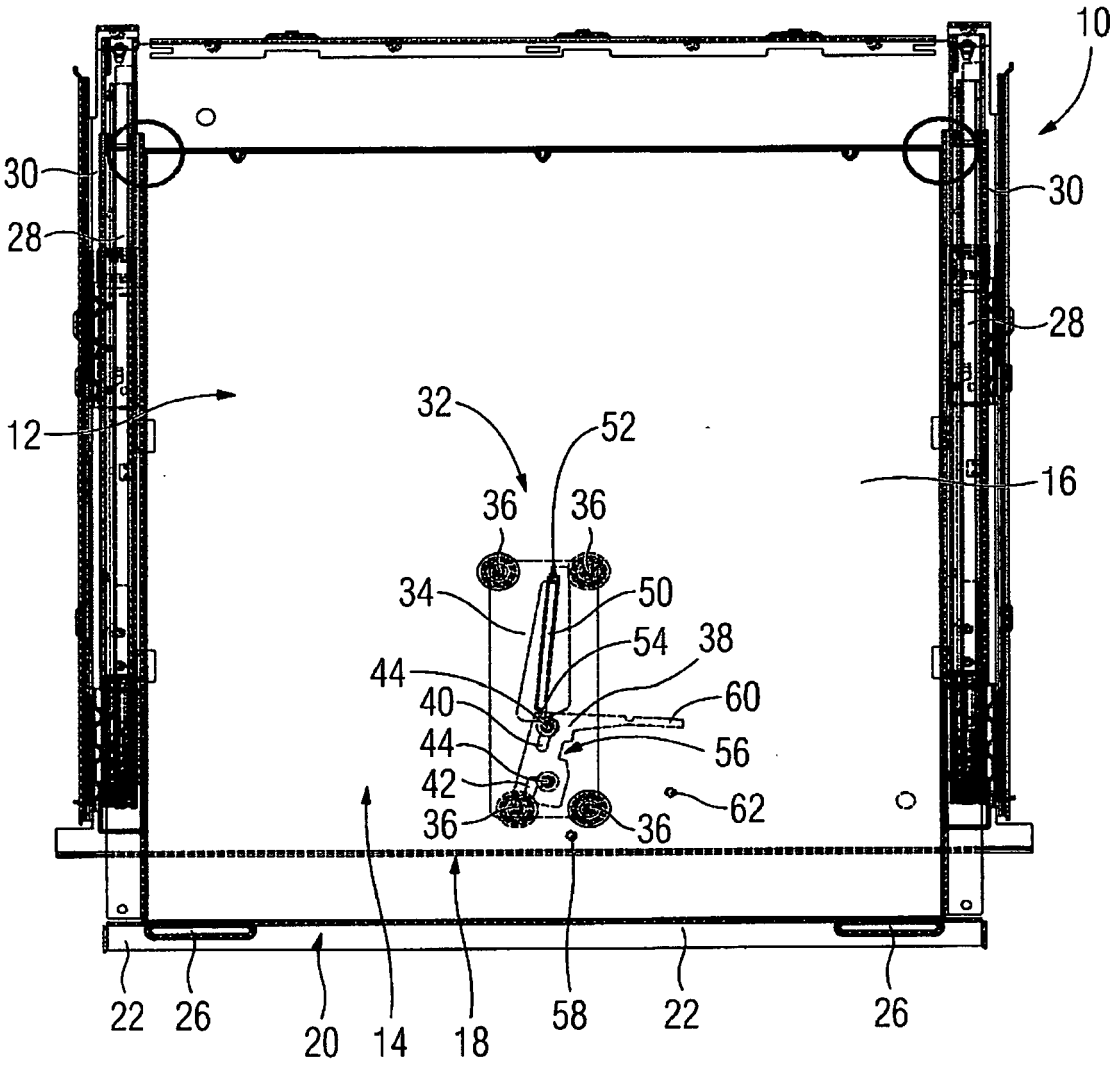

10
30
28
12
32
52
36
36
34
50
54
38
44
40
60
44
56
42
62
36
36
16
30
28
22
26
20
14
18
58
22
26

FIG 3

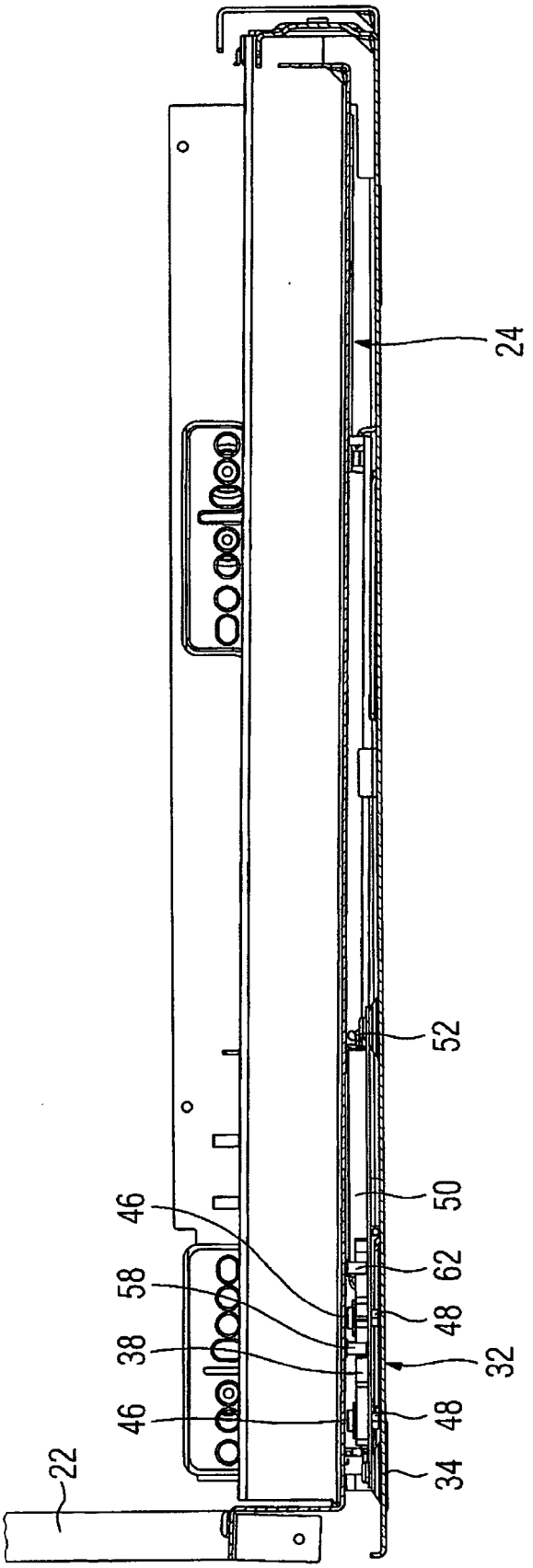


FIG 4

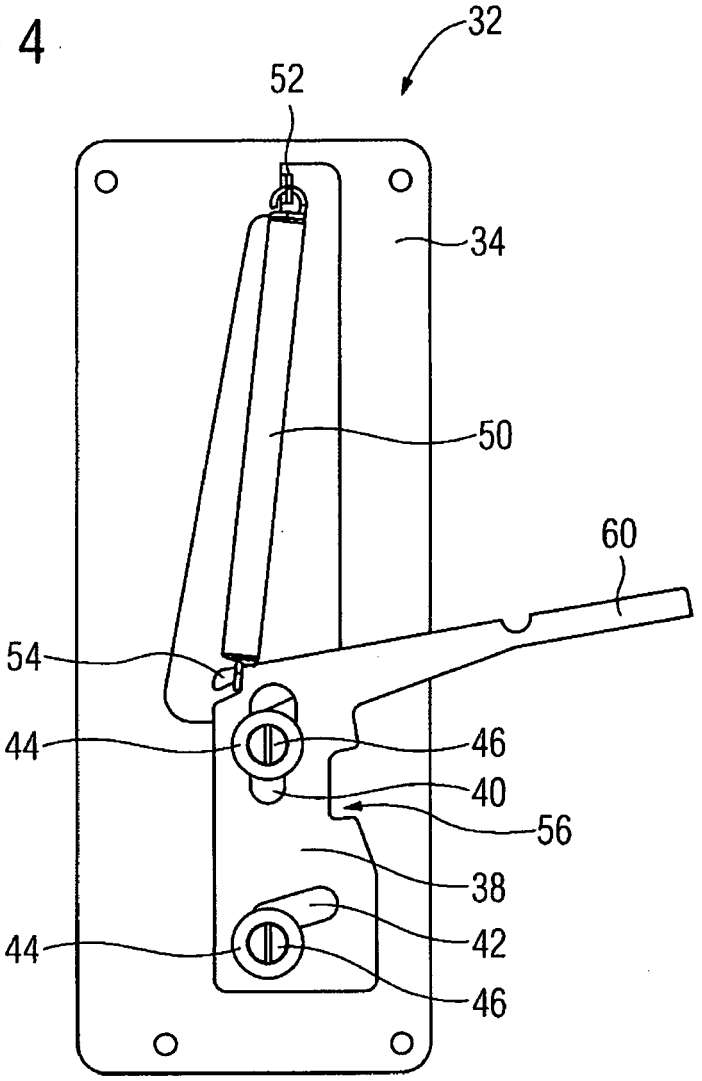
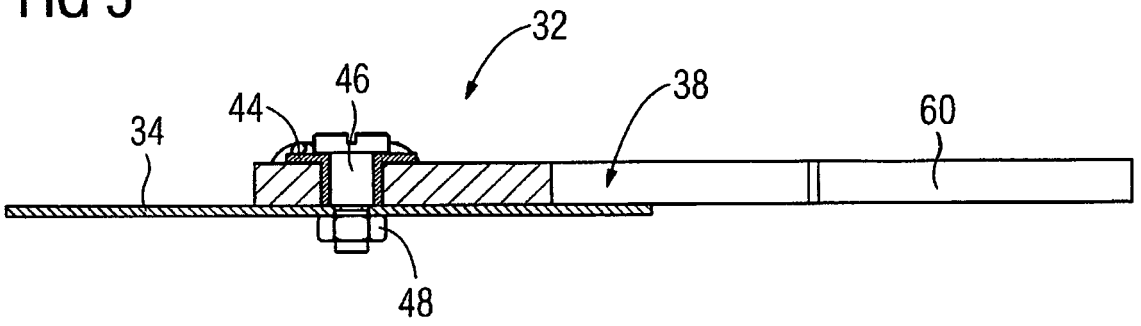


FIG 5



Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 11 00 5502

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	EP 0 391 221 A (BLUM GMBH JULIUS [AT]) 10 October 1990 (1990-10-10) * column 1, line 25 - column 2, line 29 * * column 4, line 12 - column 5, line 26; figures 5,6 *	1,3,4, 6-13 2,14	INV. E05C19/02 A47B88/04 E05F1/08 F24C15/02
X A	EP 0 951 848 A (BLUM GMBH JULIUS [AT]) 27 October 1999 (1999-10-27) * paragraph [0010] - paragraph [0021]; figures *	1,3,4, 6-13 5	ADD. E05B17/00 E05B65/46
X A	US 2001/008037 A1 (BRUSTLE KLAUS [AT]) 19 July 2001 (2001-07-19) * the whole document *	1,3,4, 7-10 2,5	
X	GB 2 416 295 A (NIFCO INC [JP]) 25 January 2006 (2006-01-25) * the whole document *	1,9,10	
X	DE 89 07 511 U1 (FULTERER GESELLSCHAFT M.B.H., LUSTENAU, AT) 3 August 1989 (1989-08-03) * the whole document *	1	TECHNICAL FIELDS SEARCHED (IPC) E05C A47B E05F F24C
Y,D	DE 20 2007 007450 U1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 2 August 2007 (2007-08-02) * the whole document *	2,14	
A	GB 2 297 578 A (IND RAGI D A [ES]) 7 August 1996 (1996-08-07) * the whole document *	1,3-13	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 November 2011	Henkes, Roeland

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 00 5502

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

02-11-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0391221 A	10-10-1990	AT 393948 B	10-01-1992
		AT 127667 T	15-09-1995
		CA 2013633 A1	03-10-1990
		DE 9007385 U1	23-05-1991
		DE 59009643 D1	19-10-1995
		ES 2076982 T3	16-11-1995
		JP 1815723 C	18-01-1994
		JP 2286102 A	26-11-1990
		JP 5023763 B	05-04-1993
EP 0951848 A	27-10-1999	NONE	
US 2001008037 A1	19-07-2001	AT 410504 B	26-05-2003
		AT 281097 T	15-11-2004
		BR 0100075 A	21-08-2001
		CN 1305764 A	01-08-2001
		DE 20121255 U1	23-05-2002
		DE 50104334 D1	09-12-2004
		EP 1120066 A2	01-08-2001
		ES 2231314 T3	16-05-2005
		JP 2001245738 A	11-09-2001
GB 2416295 A	25-01-2006	CN 1736290 A	22-02-2006
		JP 4446825 B2	07-04-2010
		JP 2006026332 A	02-02-2006
		US 2006017359 A1	26-01-2006
DE 8907511 U1	03-08-1989	CH 677435 A5	31-05-1991
DE 202007007450 U1	02-08-2007	NONE	
GB 2297578 A	07-08-1996	ES 2139476 A1	01-02-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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 10253158 A **[0002]**
- DE 202007007450 U **[0003] [0005]**