



(11) **EP 1 484 564 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
05.11.2008 Bulletin 2008/45

(51) Int Cl.:
F25D 25/02 (2006.01)

(21) Application number: **03090173.0**

(22) Date of filing: **05.06.2003**

(54) **Vegetable box for refrigerator**

Gemüsebehälter für Kühlschränke

Bac à légumes pour réfrigérateur

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**

(43) Date of publication of application:
08.12.2004 Bulletin 2004/50

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a refrigerator, and more particularly; to a vegetable box for a refrigerator in which foodstuffs such as vegetables or fruit are stored.

2. Description of the Prior Art

[0002] FIG. 1 shows a configuration of a conventional vegetable box for a refrigerator. As shown in the figure, the vegetable box 20 is formed with a receiving space 21 which is open at the top. A rear surface 23 of the vegetable box 20 is formed in an inclined state to conform to a shape of a corresponding portion within the refrigerator. Side and front surfaces 25, 27 of the vegetable box 20 are formed perpendicular to a bottom surface of the vegetable box 20. At an upper end of a front surface of the vegetable box 20, a handle 29 is formed so that the vegetable box 20 can be slid out like a drawer.

[0003] Generally, vegetables or fruit are stored in the vegetable box 20. The vegetable box 20 is positioned, if possible, at a lower portion of the refrigerator far from an evaporator for producing cold air so that the vegetables or fruit are not frozen due to the cold air. Further, the vegetable box 20 is partitioned separately from a refrigerating chamber so that the cold air can be prevented from coming into direct contact with the vegetables or fruit. Furthermore, even when a refrigerator door is opened, by causing relatively warm air not to come into direct contact with the vegetables or fruit, the vegetables or fruit can be kept fresh for a long time.

[0004] However, the conventional vegetable box constructed as such has the following problems:

[0005] That is, in the conventional vegetable box, when a user intends to take a small quantity of fruit or vegetables out from or into the vegetable box, the user should open the refrigerator door, pull the entire vegetable box 20, take the stored fruit or vegetables out from or into the vegetable box, and then push the entire vegetable box 20.

[0006] Accordingly, in a case where a large quantity of contents are stored in the vegetable box 20, large force is required to pull the vegetable box 20. Further, since the receiving space 21 of the pulled vegetable box 20 is exposed to the relatively warm air, it is difficult to keep the contents fresh. Moreover, since the refrigerator should be operated to keep the contents cold again at a lower temperature, there has been a problem in that consumption of electric power is further increased.

[0007] US 2003/0052583 discloses a food storage container assembly for use in a refrigerator, which comprises a container body with a vegetable box formed therein and a partitioned storage unit for forming a separate storing space within the vegetable box. The por-

tioned storage unit has an open top given access to the foodstuffs stored in the partitioned storage space. Thus, an extra partitioned storage space is formed in the space of the vegetable box. However, the stored foods in the open partitioned storage space are exposed to relatively dry air and difficult to keep fresh. At the same time, for reaching the interior of the vegetable box, still the whole box needs to be pulled outside.

10 SUMMARY OF THE INVENTION

[0008] Accordingly, the present invention is contemplated to solve the above problems in the prior art. An object of the present invention is to provide a vegetable box for a refrigerator wherein a small quantity of stored contents can be easily put into and taken out from the vegetable box without pulling the vegetable box as a whole.

[0009] Another object of the present invention is to provide a vegetable box for a refrigerator wherein a receiving space within the vegetable box can be partitioned into a number of small spaces while smooth flow of cold air can be still made between the partitioned receiving spaces.

[0010] According to an aspect of the present invention for accomplishing the object, there is provided a vegetable box for a refrigerator which comprises a box body formed with a receiving space in which stored contents are received, a receiving pocket made of flexible material and formed at a front end of the box body for defining an auxiliary receiving space, and a front door for forming a front surface of the box body and for opening (and closing) the auxiliary receiving space of the receiving pocket by causing the front door to be pivoted on hinge shafts at a lower portion of the box body, wherein the front door is selectively locked to the box body by means of a locking mechanism, and wherein a leading end of the front door is formed with a handle for allowing the vegetable box to be pushed in and pulled out.

[0011] Preferably, one side of the receiving pocket is fixed to a support formed at an upper end of the box body, and the other side thereof is fixed to the front door.

[0012] Preferably, the receiving pocket has a plurality of vent holes or is manufactured of a net.

[0013] Preferably, the front door is selectively engaged to the support by a locking mechanism operated through a button provided at an upper end of the front door.

[0014] According to the vegetable box for the refrigerator of the present invention constructed as such, there are advantages in that a small quantity of stored contents can be conveniently put into and taken out from the vegetable box and cold air can be smoothly supplied into the vegetable box as a whole.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The above and other objects and features of the present invention will become apparent from the following description of preferred embodiments given in

conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a conventional vegetable box for a refrigerator;

FIG. 2 is a perspective view of a vegetable box for a refrigerator according to a preferred embodiment of the present invention;

FIG. 3 is a partial sectional view of a major part of the vegetable box shown in FIG. 2;

FIG. 4 shows an operational state where a front door of the vegetable box of the present invention is opened;

FIG. 5 is a perspective view of a vegetable box for a refrigerator according to another preferred embodiment of the present invention; and

FIG. 6 is a partial sectional view of a major part of the vegetable box shown in FIG. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] Hereinafter, a vegetable box for a refrigerator according to each of preferred embodiments of the present invention will be described in detail with reference to the accompanying drawings.

[0017] FIGS. 2 to 4 show a vegetable box according to a preferred embodiment of the present invention. As shown in the figures, a box body 31 forms a frame of the vegetable box 30. A receiving space 32 that is open at the top is formed within the box body 31.

[0018] The box body 31 takes an external appearance corresponding to a shape of the interior of a refrigerating chamber in which it is installed. For example, in a case where an inner surface of the refrigerating chamber corresponding to a rear surface 33 of the box body 31 is formed in an inclined state, the rear surface 33 is also formed correspondingly. Side surfaces of the box body 31 are generally formed to be perpendicular to a bottom surface of the refrigerating chamber.

[0019] Upper ends of the side surfaces 35 are formed with a support 37 at a position adjacent to a leading end of the box body 31. The support 37 is formed to extend in the right and left direction, as viewed in the front of the box body 31, to connect the upper ends of both the side surfaces 35 to each other.

[0020] A front door 39, which is constructed in an opening and shutting manner, forms a front surface of the box body 31. The front door 39 is provided with hinge shafts 41 at both lower ends thereof so that they can be rotatably engaged with hinge holes formed at lower ends of the side surfaces 35. The front door 39 rotates about the hinge shafts 41 to open and close the interior of the vegetable box 30.

[0021] The top of the front door 39 is provided with a locking mechanism including a button 43 for controlling opening and closing of the front door 39. A leading end of the front door 39 is formed with a handle 45 for allowing the vegetable box 30 to be easily pushed in and pulled

out.

[0022] The locking mechanism comprises a body 47 of the button 43, a catching protrusion 49 formed horizontally in the body 47, a spring 51 for returning the button 43 to an original position after the button is pressed, and the like. Such a locking mechanism is well shown in FIG. 3.

[0023] In order to allow the front door 39 to be kept in a closed state by the locking mechanism, a catching groove 53 in which the catching protrusion 49 of the body 47 of the button 43 is caught is formed in the support 37,

[0024] A leading end of the vegetable box 30 is provided with a receiving pocket 55 capable of containing a small quantity of stored contents. The receiving pocket 55 defines an auxiliary receiving space 57. One side of the receiving pocket 55 is connected to the support 37, and the other side thereof is connected to an upper end of a rear surface of the front door 39.

[0025] Since the receiving pocket 55 consists of a part injection molded out of flexible material, the external appearance thereof may vary somewhat freely depending on stored contents to be stored in the auxiliary receiving space 57.

[0026] Meanwhile, another embodiment of the present invention is shown in FIGS. 5 and 6. In this embodiment, when compared with the aforementioned embodiment, in order to allow air to smoothly flow between the main receiving space 32 and the auxiliary receiving space 57, vent holes 59 are additionally formed in the receiving pocket 55.

[0027] The receiving pocket 55 is perforated so that the vent holes 59 are formed to take a lattice shape. In this case, the receiving pocket is injection molded out of flexible material. The receiving pocket 55 may be made of a net.

[0028] Now, an operation of the vegetable box for the refrigerator according to the present invention constructed as such will be described in detail.

[0029] First, for example, a case where a small quantity of foodstuffs is to be stored will be explained. A user first opens a door of the refrigerator in which the vegetable box 30 according to the present invention is installed. Next, while gripping the handle 45 in the front door 39 of the vegetable box 30 and pressing the button 43, the user pulls the handle 45 forward. By doing so, the front door 39 of the vegetable box 30 is inclined forward. This state is shown in FIG. 4.

[0030] That is, when the front door 39 rotates about the hinge shafts 41 formed at the lower ends thereof and is inclined forward, the front face of the vegetable box 30 becomes open. At this time, since the one side of the receiving pocket 55 is connected to the support 37 and the other side thereof is connected to the front door 39, the receiving pocket 55 is unfolded while following the front door 39. Thus, the auxiliary receiving space 57 of the receiving pocket 55 becomes open.

[0031] After the foodstuffs are put into the receiving pocket 55, the front door 39 is raised and pushed in. At

this time, the catching protrusion 49 of the button 43 is slid on a bottom surface of the support 37 and goes into the catching groove 53 of the support 37, so that the front door 39 is locked.

[0032] One side of the catching protrusion 49 of the button 43 is constructed to be inclined. Accordingly, when the front door 39 is closed, the front door 39 is required to be simply pushed in without pressing the button 43. Then, the catching protrusion 49 is slid on the bottom surface of the support 37 and caught in the catching groove 43.

[0033] Next, an operation of storing a large quantity of stored contents will be described. When it is intended to pull the vegetable box 30, there is no need to press the button 43. Simply, the user grips the handle 45 and pulls it forward. At this time, since the catching protrusion 49 of the button 43 is caught in the catching groove 53 formed in the support 37, which is attached to the vegetable box 30 the entire vegetable box 30 is pulled out.

[0034] Subsequently, the stored contents can be put into or taken out from the receiving space 32 through the open top thereof. At this time, even though the stored contents are bulky, since the receiving pocket 55 is formed out of flexible material, they can be stored irrespective of the shape of the auxiliary receiving space 57 of the receiving pocket 55.

[0035] Meanwhile, in a case where the receiving pocket 55 is formed with the vent holes 59, air can flow between the main receiving space 32 and the auxiliary receiving space 57 through the vent holes 59. Accordingly, the temperature within the entire vegetable box 30 can be properly kept.

[0036] As described above, the vegetable box for the refrigerator according to the present invention comprises the additional receiving pocket and front door. Accordingly, when it is intended to store a small quantity of stored contents, there is no need to pull out the entire vegetable box, and only the front door may be opened by pressing the button so as to use the additional receiving pocket.

[0037] Accordingly, there is convenience of use in that only desired foodstuffs can be simply stored and taken out without requiring large force.

[0038] Further, when the foodstuffs contained in the receiving pocket is intended to be taken out, since there is no need to pull the entire vegetable box, external air does not come into direct contact with the stored contents placed at a rear portion of the receiving pocket.

[0039] Accordingly, there is less risk that the freshness of the foodstuffs may be deteriorated due to the contact with the external air. Further, the foodstuffs can be kept at a lower temperature. Consequently, it is expected to obtain an effect in that electric power required for operating the refrigerator to lower the temperature in the refrigerator raised due to exposure of the stored contents, which have been contained within the vegetable box, to the external air can be reduced.

[0040] Moreover, since air smoothly flows between the auxiliary receiving space formed within the receiving

pocket and the main receiving space of the vegetable box by means of formation of the vent holes in the receiving pocket, the entire vegetable box can be kept at a uniform temperature.

[0041] As described above, it can be seen that it is a basic technical spirit that the vegetable box for the refrigerator according to the present invention includes the separate receiving pocket at the front portion thereof and the front door in front of the receiving pocket. For example, in this embodiment, the button 43 is installed in the upper end of the door, and the door 39 is constructed to be opened by the pressing of the button 43. However, it may be constructed such that the front door 39 can be opened and closed by installing a catching protrusion or the like similar to the embodiment in the handle and then pulling the handle forward or moving the handle vertically.

[0042] Further, although the one side of the receiving pocket 55 is connected to the upper rear end of the front door 39 in this embodiment, it may be installed to be connected to the lower end of the front door 39 or the bottom end of the box body 30.

Claims

1. A vegetable box (30) for a refrigerator, comprising:

a box body (31) formed with a receiving space (32) in which stored contents are received;
a receiving pocket (55) made of flexible material and formed at a front end of the box body (31) for defining an auxiliary receiving space (57);

characterized by

a front door (39) for forming a front surface of the box body (31) and for opening and closing the auxiliary receiving space (57) of the receiving pocket (55) by causing the front door (39) to be pivoted on hinge shafts (41) at a lower portion of the box body (31),
wherein the front door (39) is selectively locked to the box body by means of a locking mechanism, and wherein a leading end of the front door (39) is formed with a handle (45) for allowing the vegetable box (30) to be pushed in and pulled out.

2. The vegetable box (30) as claimed in claim 1, wherein one side of the receiving pocket (55) is fixed to a support formed at an upper end of the box body (31), and the other side thereof is fixed to the front door (39).

3. The vegetable box (30) as claimed in claim 1 or 2, wherein the receiving pocket (55) has a plurality of vent holes (59).

4. The vegetable box (30) as claimed in claim 1 or 2, wherein the receiving pocket (55) is manufactured

of a net.

5. The vegetable box (30) as claimed in claim 1, wherein the locking mechanism is operated through a button (43) provided at an upper end of the front door (39). is operated through a button (43) provided at an upper end of the front door (39).

Patentansprüche

1. Ein Gemüsebehälter (30) für einen Kühlschrank, umfassend:

einen Behälterkörper (31), der mit einem Aufnahmeraum (32) ausgebildet ist, in dem gelagerter Inhalt aufgenommen wird;
eine aus flexiblem Material hergestellte und an einem vorderen Ende des Behälterkörpers (31) ausgebildete Aufnahmetasche (55) zum Definieren eines zusätzlichen Aufnahmeraums (57);

gekennzeichnet durch

eine vordere Tür (39) zum Ausbilden einer vorderen Fläche des Behälterkörpers (31) und zum Öffnen und Schließen des zusätzlichen Aufnahmeraums (57) der Aufnahmetasche (55) **durch** Herbeiführung eines Aufschwenkens der vorderen Tür (39) an Scharnierachsen (41) an einem unteren Teil des Behälterkörpers (31),
wobei die vordere Tür (39) **durch** einen Arretiermechanismus selektiv an dem Behälterkörper arretiert ist,
und wobei ein führendes Ende der vorderen Tür (39) mit einem Griff (45) ausgebildet ist, damit der Gemüsebehälter (30) hineingeschoben und herausgezogen werden kann.

2. Der Gemüsebehälter (30) nach Anspruch 1, wobei eine Seite der Aufnahmetasche (55) an einem an einem oberen Ende des Behälterkörpers (31) ausgebildeten Auflager befestigt ist und die andere Seite derselben an der vorderen Tür (39) befestigt ist.
3. Der Gemüsebehälter (30) nach Anspruch 1 oder 2, wobei die Aufnahmetasche (55) eine Vielzahl von Lüftungslöchern (59) aufweist.
4. Der Gemüsebehälter (30) nach Anspruch 1 oder 2, wobei die Aufnahmetasche (55) aus einem Netz hergestellt ist.
5. Der Gemüsebehälter (30) nach Anspruch 1, wobei der Arretiermechanismus durch einen an einem oberen Ende der vorderen Tür (39) bereitgestellten Knopf (43) betätigt wird.

Revendications

1. Bac (30) à légumes pour réfrigérateur, comprenant :

un corps (31) de bac réalisé avec un espace (32) de réception qui reçoit des contenus stockés ;
une poche (55) de réception faite d'un matériau flexible et formée à une extrémité avant du corps (31) de bac, et destinée à définir un espace (57) de réception auxiliaire ;

caractérisé par

une porte (39) avant formant une surface frontale du corps (31) de bac, et destinée à ouvrir et à fermer l'espace (57) de réception auxiliaire de la poche (55) de réception en faisant pivoter la porte (39) avant sur des arbres (41) d'articulation au niveau d'une partie inférieure du corps (31) de bac,
la porte (39) avant étant verrouillée de manière sélective sur le corps de bac au moyen d'un mécanisme de verrouillage,
et une extrémité de tête de la porte (39) avant étant réalisée avec une poignée (45) permettant au bac (30) à légumes d'être introduit et d'être sorti.

2. Bac (30) à légumes selon la revendication 1, dans lequel un côté de la poche (55) de réception est fixé à un support formé au niveau d'une extrémité supérieure du corps (31) de bac, l'autre côté de la poche (55) de réception étant fixé à la porte (39) avant.
3. Bac (30) à légumes selon la revendication 1 ou 2, dans lequel la poche (55) de réception comprend une pluralité de trous (59) d'évent.
4. Bac (30) à légumes selon la revendication 1 ou 2, dans lequel la poche (55) de réception est constituée d'un filet.
5. Bac (30) à légumes selon la revendication 1, dans lequel le mécanisme de verrouillage est commandé par l'intermédiaire d'un bouton (43) prévu à une extrémité supérieure de la porte (39) avant.

FIG 1

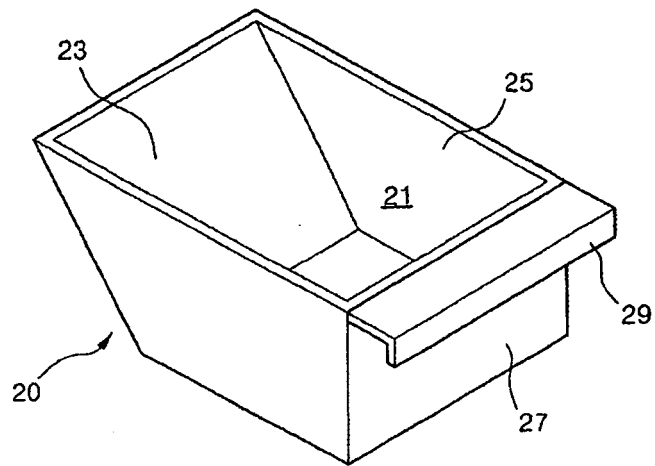


FIG 2

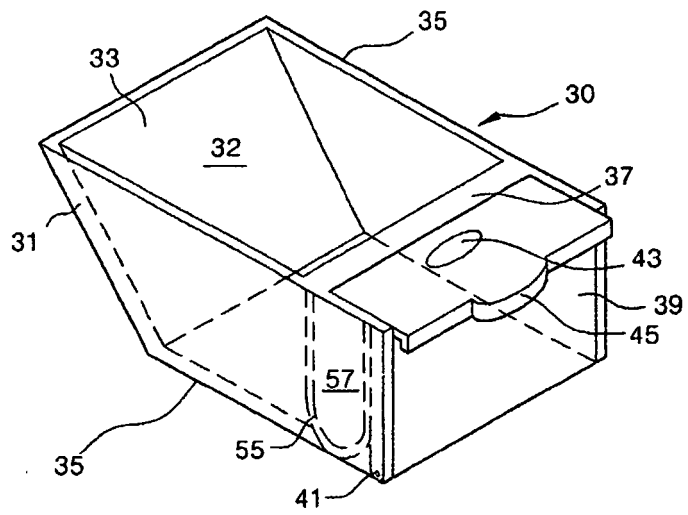


FIG 3

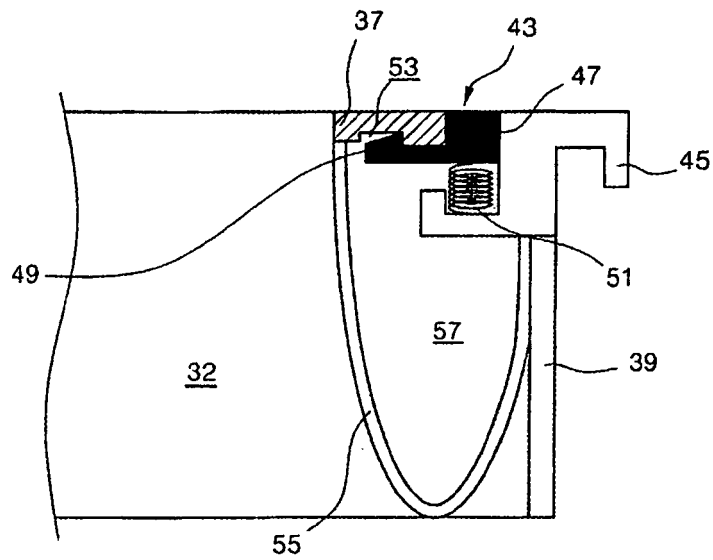


FIG 4

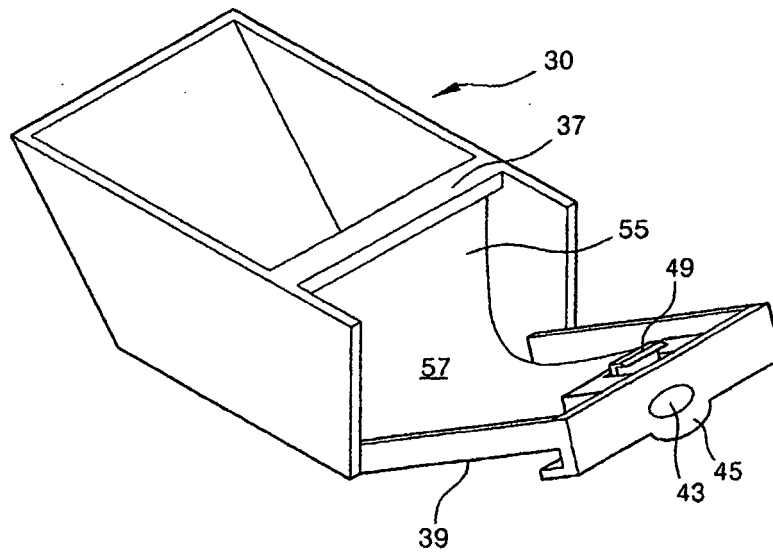


FIG 5

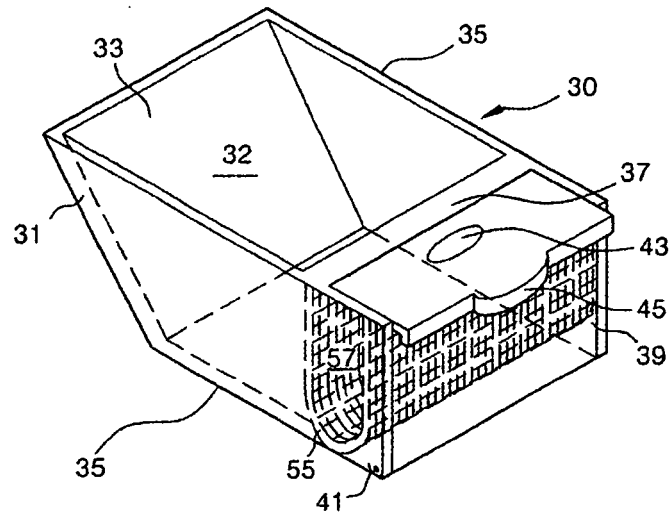
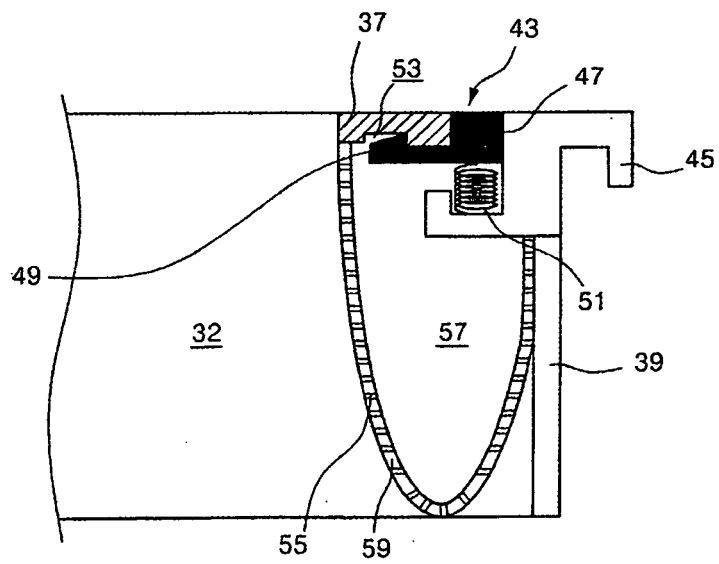


FIG 6



REFERENCES CITED IN THE DESCRIPTION

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