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Theo Haftlmeier, Giengen (DE)**Publication Classification**(51) **Int. Cl.⁷** **A47B 96/04; F25D 19/00**(52) **U.S. Cl.** **312/408**

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LERNER AND GREENBERG, PA**P O BOX 2480****HOLLYWOOD, FL 33022-2480 (US)**(57) **ABSTRACT**(73) Assignee: **BSH Bosch und Siemens Hausgerate GmbH**(21) Appl. No.: **10/832,574**(22) Filed: **Apr. 26, 2004**

A refrigerating appliance contains a housing that encloses an interior space. A shelf can be mounted at different heights on walls of the housing by brackets that are each joined to one of the walls in a manner that enables them to pivot about a first axis and joined to the shelf in a manner that enables them to pivot about a second axis that is offset with regard to the first axis.

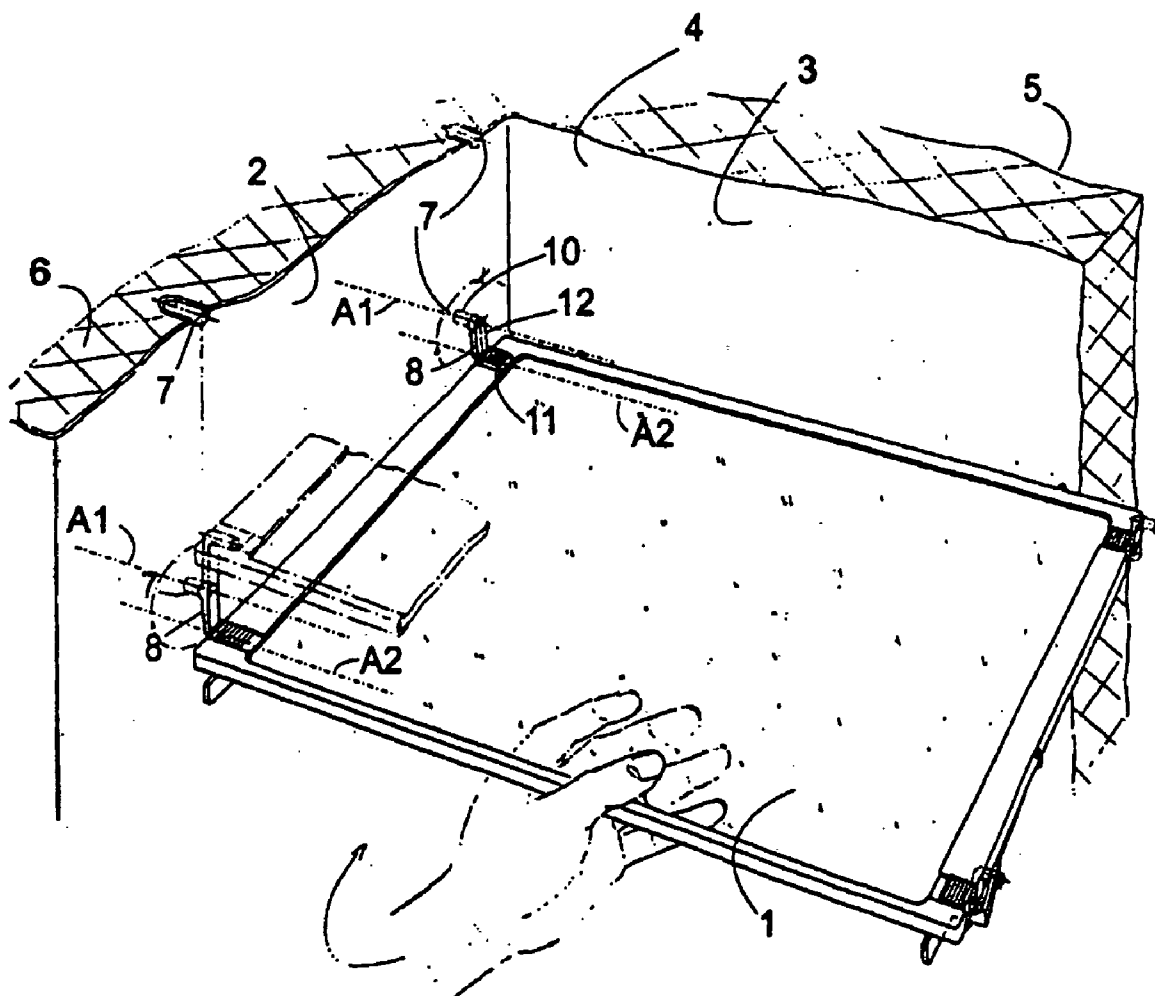


Fig. 1

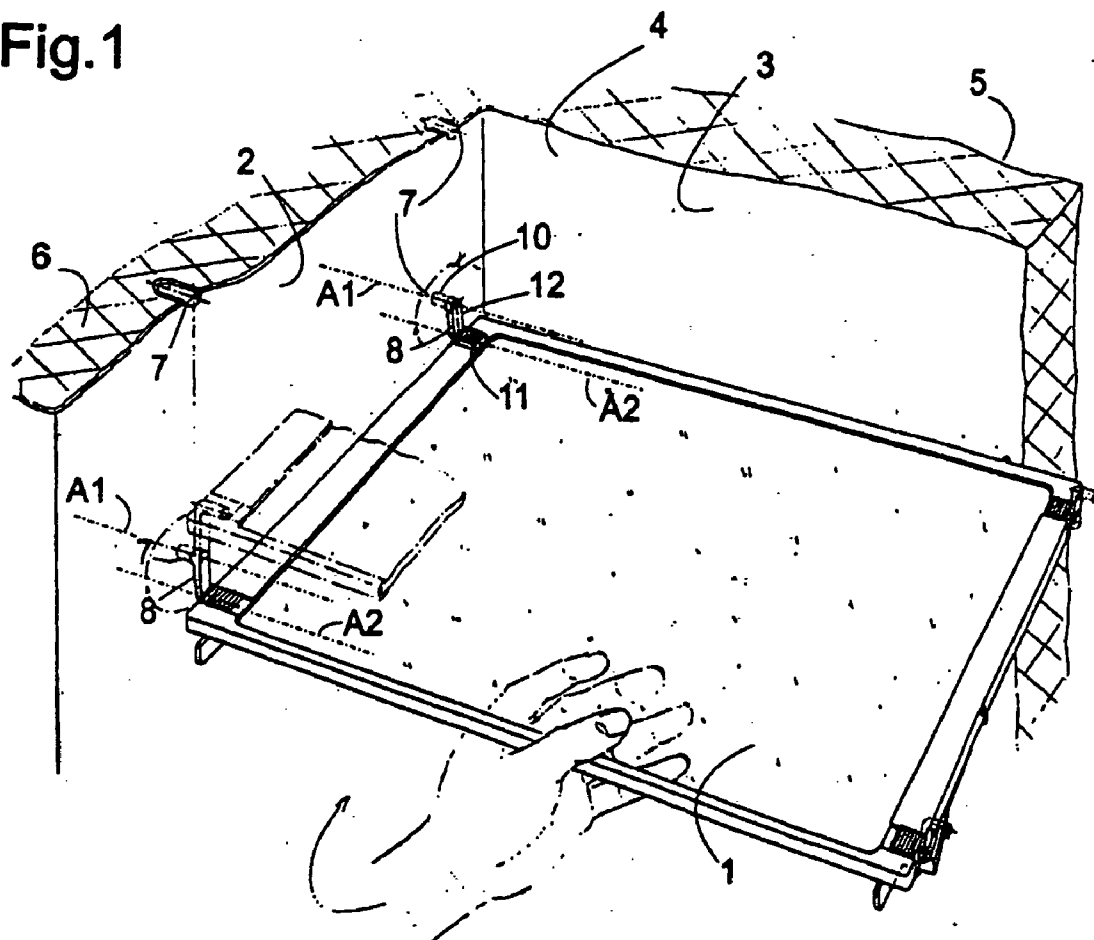


Fig. 2

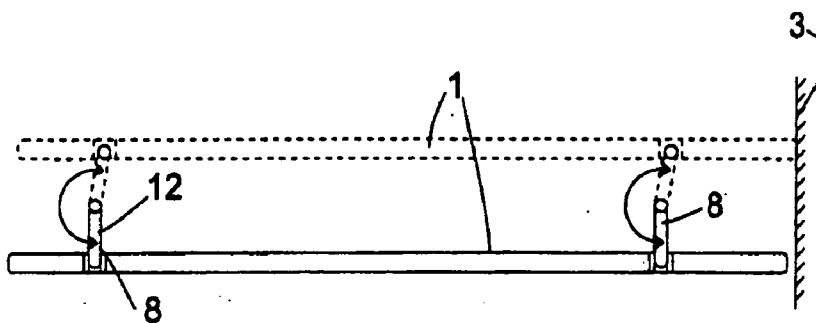


Fig. 3

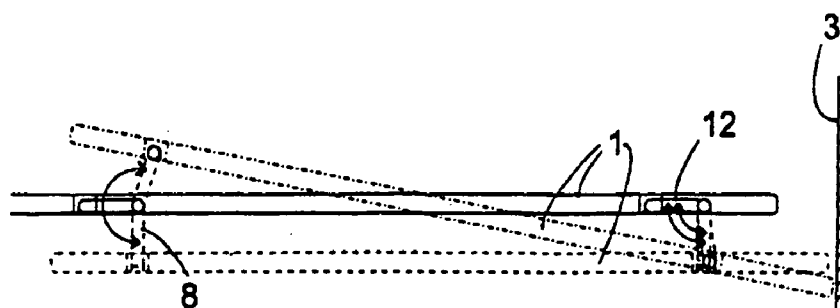


Fig. 4

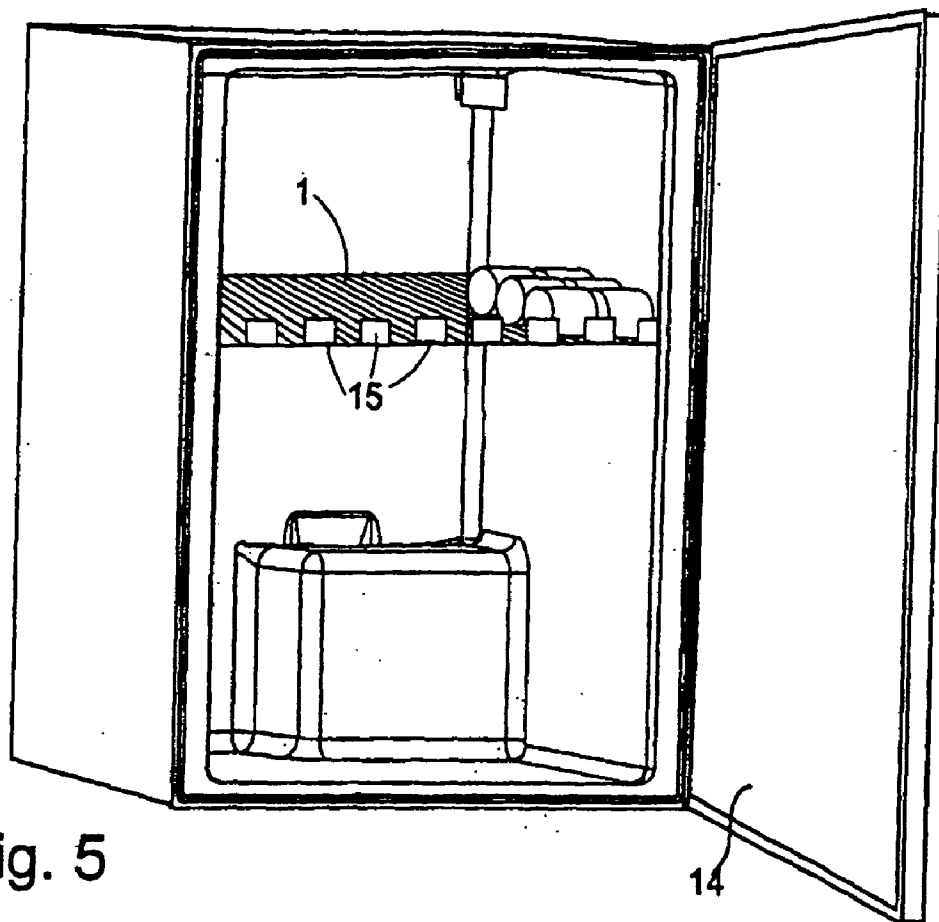


Fig. 5

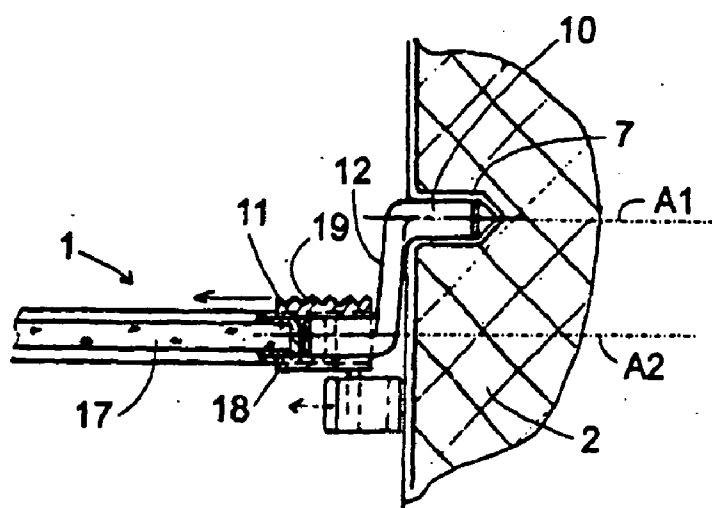


Fig. 6

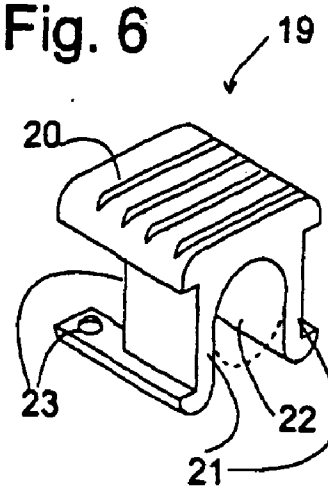


Fig. 7

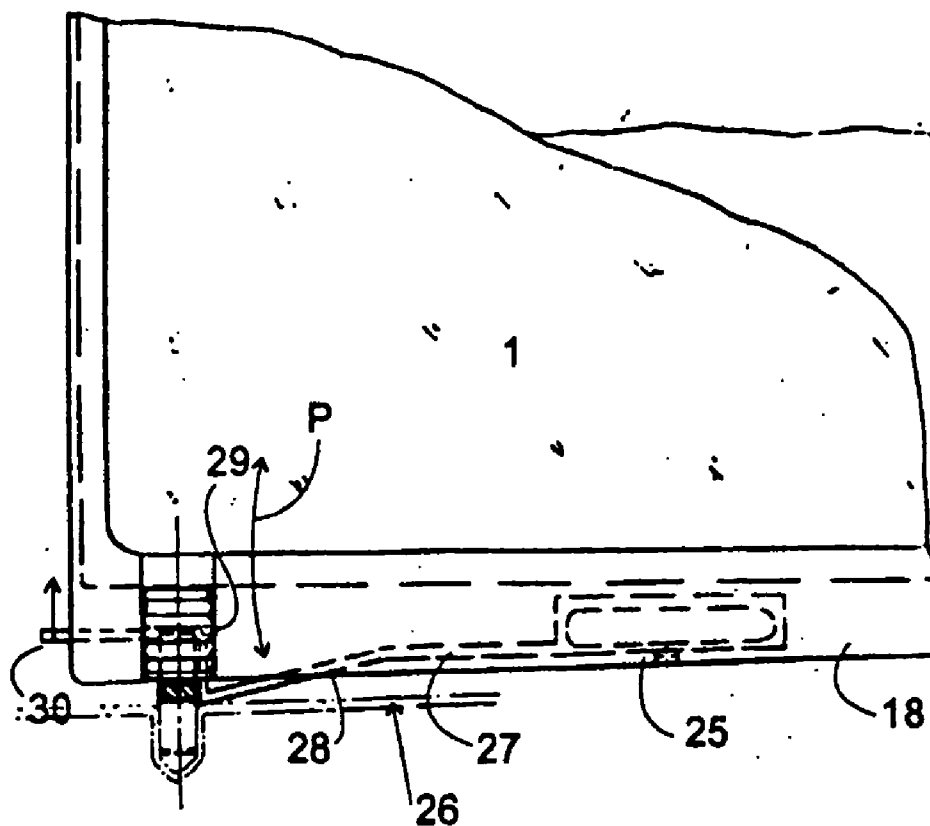


Fig. 8

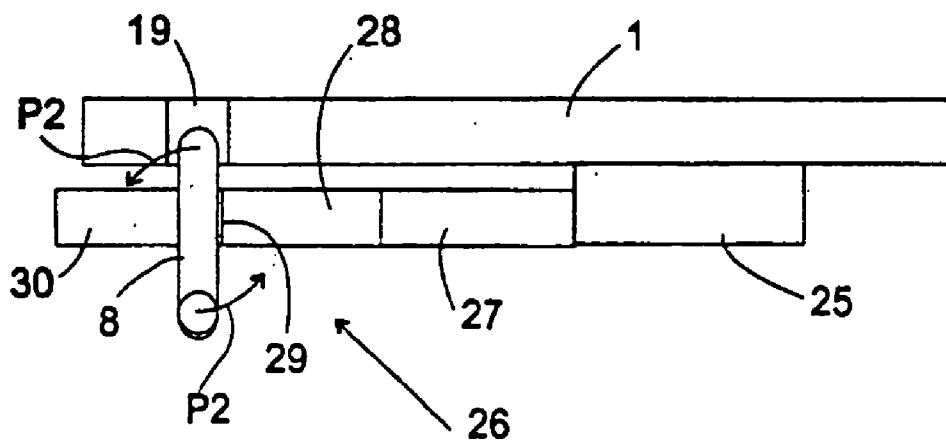


Fig. 9

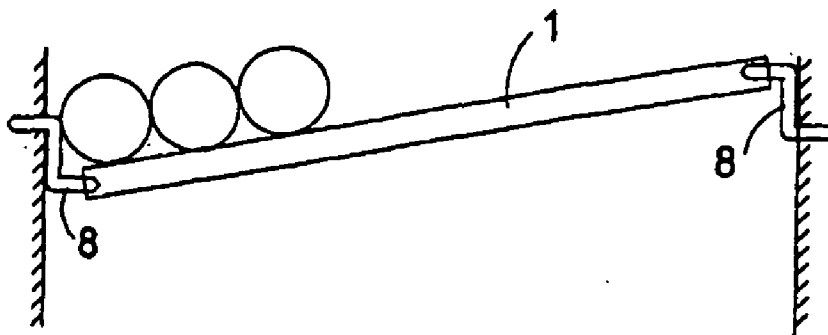


Fig. 10

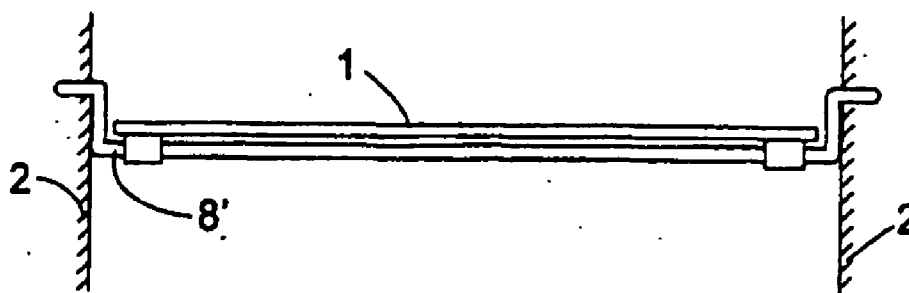


Fig. 11

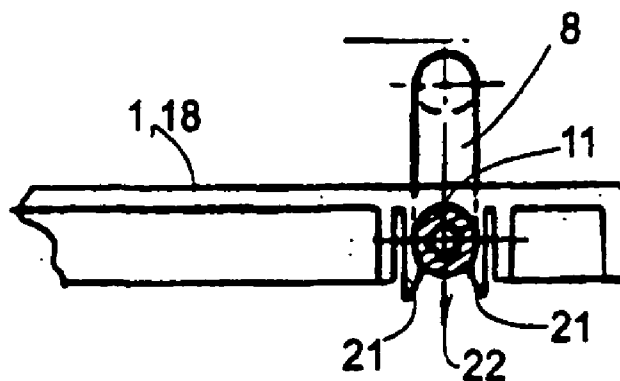


Fig. 12

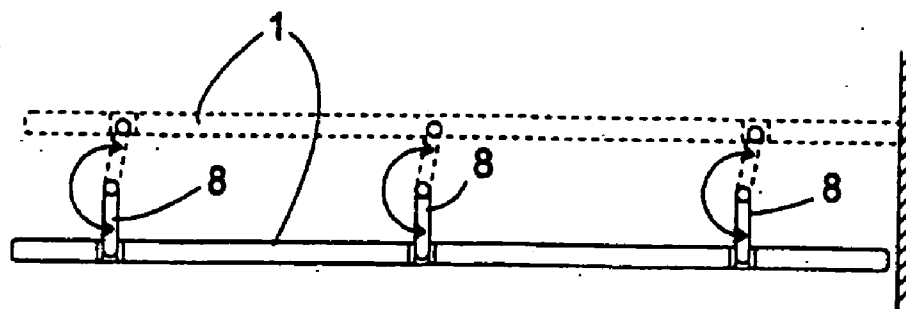
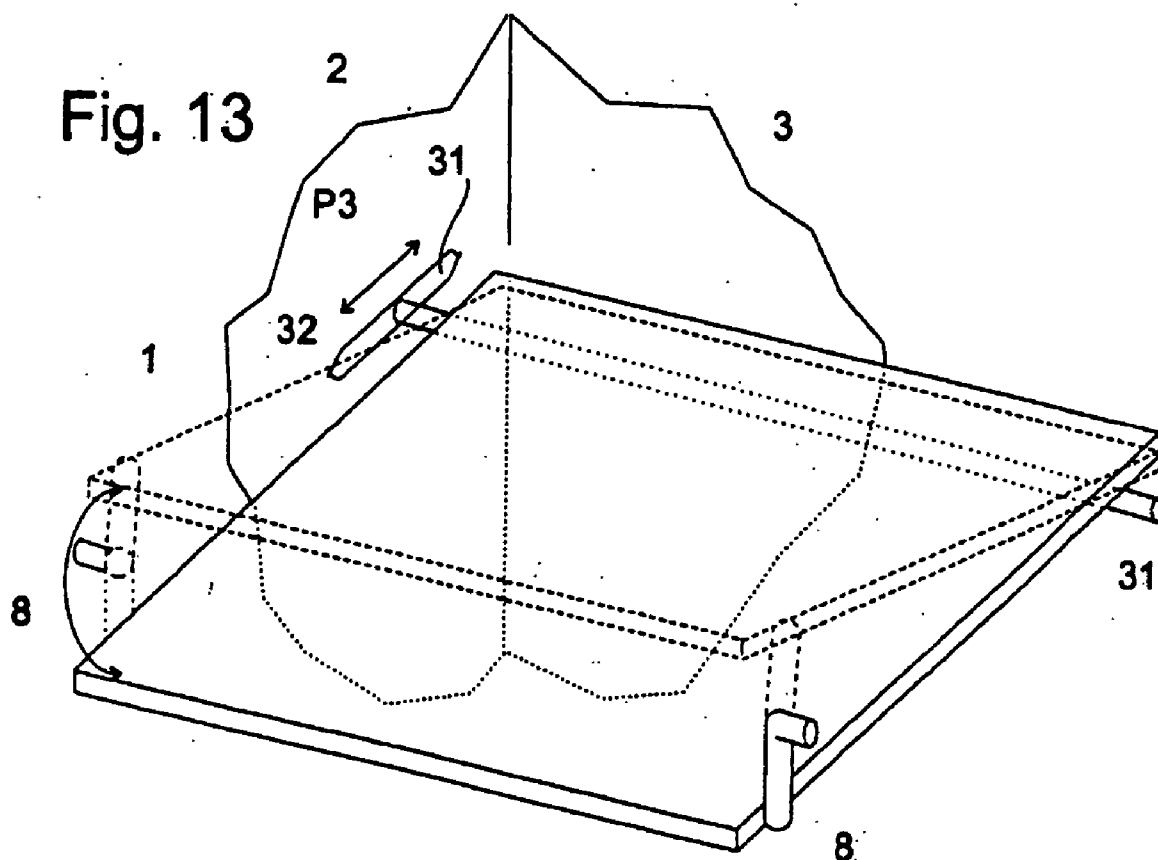


Fig. 13



REFRIGERATOR WITH AN ADJUSTABLE COMPARTMENT BASE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation, under 35 U.S.C. § 120, of copending international application No. PCT/EP02/11319, filed Oct. 9, 2002, which designated the United States; this application also claims the priority, under 35 U.S.C. § 119, of German patent application No. 101 53 621.6, filed Oct. 31, 2001; the prior applications are hereby incorporated by reference in their entirety.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a refrigerator such as a cabinet refrigerator or freezer, and in particular to the problem of splitting the internal area of such a refrigerator in a user-friendly manner by one or more compartment bases.

[0004] Conventionally, the capability to adjust the height of such compartment bases is achieved in that, during the process of molding the inner container of a refrigerator such as this, two or more horizontal grooves are formed at different heights on the sidewalls of the inner container, into which compartment bases can be pushed.

[0005] The flexibility in the splitting of the internal area that can be achieved by this previously used solution is, however, limited. For example, in general, it is not possible to set the compartment bases to inclined positions, which may possibly be desirable for rapid removal and filling, particularly when the need is to store a large number of standard objects on a compartment base, for successive removal.

[0006] A further disadvantage of this known solution is the lack of capability in practice to correct the position of a compartment base if required, when it is loaded. Frequently, particularly when a user has to store relatively large amounts of purchased foodstuffs in a cabinet refrigerator, this results in the problem that it is only towards the end of the loading process, when there is little space left in the cabinet refrigerator, that it is found that the present positions of the compartment bases are not optimum for accommodation of the particular items to be refrigerated, and that one of the existing compartments lacks sufficient storage height, while there is unused height in an adjacent compartment which cannot conveniently be used. It is very difficult, if not completely impossible, to withdraw a loaded compartment base in a situation such as this, and to insert it once again at a higher or lower level. In some refrigerator configurations, an inadequate maximum opening angle of the door makes it impossible to remove a compartment base oriented exactly horizontally and, if it is possible to remove it, there is, of course, a risk of the refrigerated items falling off. In a situation such as this, the user frequently has no choice but to unload the majority of the cabinet refrigerator and then to attempt to insert the items once again and in a more space-saving manner, or to move the position of a compartment base before loading it once again.

[0007] There is therefore a need for a refrigerator which allows more flexibility for splitting of its internal area with

the aid of compartment bases and which, in particular, allows compartment bases to be positioned obliquely and/or allows compartment bases to be moved while loaded.

SUMMARY OF THE INVENTION

[0008] It is accordingly an object of the invention to provide a refrigerator with an adjustable compartment base that overcomes the above-mentioned disadvantages of the prior art devices of this general type.

[0009] With the foregoing and other objects in view there is provided, in accordance with the invention, a refrigerator. The refrigerator contains a housing defining and surrounding an internal area and having walls, at least one compartment base mountable in the internal area at different heights on the walls of the housing, and supporting arms mounting the compartment base to the walls. Each of the supporting arms is connected to one of the walls such that the supporting arms pivot about a first axis and further connected to the compartment base such that the supporting arms can pivot about a second axis being offset with respect to the first axis.

[0010] The capability to pivot the supporting arms in this case allows the height of a compartment base that is supported by the supporting arms to be adjusted and, to do this, there is no need to completely remove the compartment base from the refrigerator. Provided that the supporting arms can be pivoted independently of one another, this allows the compartment base to assume various inclined positions.

[0011] A first preferred refinement of the invention results in there being a supporting arm which can pivot and a suspension device which can be moved horizontally on each edge of the compartment base. By pivoting the supporting arm up and down, this allows the compartment base to be adjusted between two differently inclined positions, while the suspension device that can be moved horizontally defines an axis for the pivoting movement of the compartment base.

[0012] A configuration such as this makes it possible, for example, to adjust the compartment base between a horizontal position and a position in which it slopes forwards or towards the door, or rearwards or towards the rear wall of the refrigerator. A sloping position of the compartment base such as this may be expedient, for example, for storing cans or bottles horizontally, which always roll towards the deeper edge on the sloping compartment base, where they can easily be removed.

[0013] In a second preferred refinement of the refrigerator, two supporting arms that can pivot are provided on each side edge of the compartment base, and are referred to as the front and rear supporting arms. A compartment base such as this is able to assume a horizontal upper rest position in which the second axis runs above the first axis of each supporting arm, a lower rest position in which the second axis runs below the first axis of each supporting arm, and one or two inclined rest positions, in which the second axes of the front and of the rear supporting arms are each located at different heights. The wide range of possible positions is thus greater than in the case of the first exemplary embodiment and, in particular, this allows the compartment base to be moved parallel and in a guided manner between two horizontal positions at different heights.

[0014] In a third preferred embodiment, at least three supporting arms that can pivot are provided on each side

edge of the compartment base. A compartment base such as this can be moved only between horizontal positions, and the third supporting arm makes it impossible to change from a horizontal position to an inclined position. This refinement is thus particularly suitable for the problem mentioned above of adjusting the height of the compartment base when it is loaded.

[0015] If the supporting arms which are disposed on opposite side edges of the compartment base are not coupled to one another, then it is possible to move the supporting arms to different rest positions on different side edges, and thus to cause the compartment base to slope in the lateral direction. This variant has the advantage over sloping in the forwards/rearwards direction that there is no risk of the refrigerated items falling out, since they are always supported on the deeper side edge by the side wall of the refrigerator housing.

[0016] In order to make it impossible to position the compartment bases obliquely in the lateral direction, supporting arms may in each case be connected to one another in pairs. This is once again expedient for adjusting the height of loaded compartment bases.

[0017] Particularly in the case of a compartment base that can be positioned obliquely in the forward/rearward direction, it is expedient to fit a holding apparatus for refrigerated items to a front and/or rear edge of the compartment base, in order to prevent refrigerated items from falling out while changing to the inclined position.

[0018] While the lower horizontal rest position of the compartment base, in which the second axis of each pivoting arm, which is connected to the compartment base, is located vertically underneath its first axis, is intrinsically stable, the diametrically opposite orientation of the supporting arms, in which the compartment base is raised, corresponds to an unstable equilibrium. In order to provide a stable raised rest position, it is expedient when each supporting arm is in the upper rest position for its second axis to be located closer to a rear wall of the internal area than the first axis, so that part of the weight of the compartment base and of the stored items located on it is supported on the rear wall of the internal area.

[0019] The supporting arms may be formed in a simple manner as double-bent metal pins, with a first pin for engaging in an opening in the wall and a second pin for engaging in a cutout in the compartment base, as well as with an intermediate section that is angled with respect to the pins and connects them.

[0020] At least one device for locking a supporting arm such as this is desirable for securing the compartment base in its raised position. This may be formed in a simple manner by a tongue which may be moved elastically and has a stop surface which is oriented transversely with respect to the movement direction of the tongue and—preferably with the tongue in the unstressed state—supports a side of the intermediate section which faces the rear wall of the refrigerator.

[0021] For simple fitting of the compartment base, it is desirable for the cutout that is provided for holding the second pin to be opened at the bottom. This allows the supporting arms to be inserted into the openings in the side walls first, after which the compartment base can be placed

on the second pins, which project from the side wall, with the second pins being inserted into the cutouts from underneath.

[0022] The sizes of the cutouts and of the pins are preferably such that the pins are clamped in the respective cutouts. This prevents the pins from falling out of the cutouts when the panel is raised, instead of following the movement of the panel.

[0023] A clamping fit such as this can be produced while on a plastic body which is separate from the compartment base and is preferably plugged to it.

[0024] Other features which are considered as characteristic for the invention are set forth in the appended claims.

[0025] Although the invention is illustrated and described herein as embodied in a refrigerator with an adjustable compartment base, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made therein without departing from the spirit of the invention and within the scope and range of equivalents of the claims.

[0026] The construction and method of operation of the invention, however, together with additional objects and advantages thereof will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] FIG. 1 is a diagrammatic, partially cut-away perspective view through a housing of a refrigerator with an adjustable compartment base according to the invention;

[0028] FIG. 2 is a diagrammatic, side view of the compartment base in two different horizontal rest positions;

[0029] FIG. 3 is a diagrammatic, side view of the compartment base in a lower horizontal rest position, an intermediate position and an inclined rest position;

[0030] FIG. 4 is a perspective view of the refrigerator with the compartment base in an inclined rest position;

[0031] FIG. 5 is a detailed view of a supporting arm and how it is fitted to a sidewall of the refrigerator housing and to the compartment base;

[0032] FIG. 6 is a diagrammatic, perspective view of a connecting body for holding the supporting arm on the compartment base;

[0033] FIG. 7 is a diagrammatic, plan view of one corner of the compartment base, with a locking device for the supporting arm;

[0034] FIG. 8 is a diagrammatic, side view of the corner of the compartment base and of the locking device shown in FIG. 7;

[0035] FIG. 9 is a diagrammatic, front view of the compartment base in a position sloping towards one sidewall;

[0036] FIG. 10 is a diagrammatic, a front view of the compartment base with the supporting arms coupled in pairs;

[0037] FIG. 11 is a view of a modified form of the connection between the supporting arm and the compartment base;

[0038] FIG. 12 is a diagrammatic, side view, analogous to FIG. 2, of the compartment base which can be moved between two horizontal rest positions but cannot assume an inclined position; and

[0039] FIG. 13 is a diagrammatic, perspective view showing a modification of the compartment base shown in FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0040] Referring now to the figures of the drawing in detail and first, particularly, to FIG. 1 thereof, there is shown the principle of the invention on the basis of a perspective view of a compartment base 1 and of a part of a sidewall 2 and of a rear wall 3 of a refrigerator. The walls 2, 3 of the refrigerator are conventionally formed from an inner container 4, which is thermoformed from plastic, an outer wall 5, and a layer of insulating foam 6, which fills the space between the inner container 4 and the outer wall 5. The inner container 4 is flat in the area of the sidewall 2, with the exception of blind holes 7 which are introduced during the thermoforming process, two of which can be seen cut open in FIG. 1, while a further two each hold a first pin 10 of a supporting arm 8 for the compartment base 1 such that it can rotate.

[0041] Each supporting arm 8 has a first pin 10 that engages in a blind hole 7 in the sidewall and defines a first horizontal pivoting axis A1 for the supporting arm. A second pin 11, which defines a second pivoting axis A2 that is parallel to the first axis A1, engages in a manner that will be described in more detail later, on the compartment base 1. The two are connected by an intermediate section 12, oriented essentially at right angles to the pins. The supporting arms 8 can be produced in a simple manner by bending a round metal rod.

[0042] Two supporting arms 8 which are not illustrated, hold the compartment base 1 on the second side wall which is not illustrated.

[0043] In the position shown in FIG. 1, the supporting arms 8 are suspended loosely pointing downwards from the blind holes 7, the plane defined by the axes A1, A2 is vertical, and the compartment base 1 is located in a stable lower horizontal rest position. The supporting arms 8 are pivoted by pulling the compartment base forwards, in the direction of the door (which is not illustrated in FIG. 1) of the refrigerator, with the compartment base 1 being raised in a corresponding manner to the pivoting movement.

[0044] If the partially withdrawn compartment base is supported and raised by hand, it can be moved to a second rest position, in which the compartment base is illustrated by dashed lines in the side view in FIG. 2. In the second rest position, which is likewise horizontal, the intermediate sections 12 of the supporting arms 8 extend essentially vertically upwards, with a slight inclination to the rear, towards the rear wall 3 of the housing. This inclination has the effect that the compartment base 1 presses against the rear wall 3 with a force which corresponds to a small

proportion of its mass and of the refrigerated items stored on it, so that it is also stable in the raised rest position.

[0045] In order to prevent the compartment base 1 from inadvertently folding itself back down to the lower rest position in the event of vibration or a slight pull on the compartment base 1, a device for locking the supporting arms 8 in the raised position is expediently provided, which is not shown in FIG. 2 but will be described in more detail later.

[0046] During the movement from the lower rest position to the upper rest position, the compartment base 1 passes through a position that is shown by solid lines in the side view in FIG. 3 and in which the intermediate sections 12 of the supporting arms are oriented horizontally and the two axes A1, A2 lie on a horizontal plane. Each supporting arm 8 can be rotated further, both upwards and downwards from this position. This makes it possible to set the compartment base 1 in inclined positions, as shown by the dashed-dotted outline in FIG. 3.

[0047] In the position shown by dashed-dotted lines in FIG. 3, the rear supporting arm 8, which faces the rear wall 3 is in each case lowered, while the front supporting arm 8, which faces the door, is raised. The compartment base 1 thus slopes towards the rear wall 3, and objects that are stored on it tend to gather against the rear wall.

[0048] However, it is also possible to set the compartment base 1 in the sloping position shown in the perspective view in FIG. 4, in which it slopes towards a door 14 of the refrigerator. In order to prevent refrigerated items from falling out, the compartment base 1 is in this case equipped with a holding device 15 in the form of two or more vertical panels which, disposed like the tines of a rake, disposed from the front edge of the tine of a rake, extend upwards from the front edge of the compartment base 1 in order to hold round containers, such as bottles or cans, which are disposed horizontally on the compartment base, which in this case is in the form of a grating. A refinement such as this is useful, for example, for a refrigerator that contains specific drinks in bottles or cans for sale. In order to load a compartment base, it can be moved to a horizontal position or to a position in which it slopes to the rear, so that the containers can conveniently be inserted on the front edge. Once the compartment base has been completely loaded, it is moved to the sloping position shown in FIG. 4, so that whenever a container is removed from the front edge of the compartment base 1, one behind it moves back, so that all the containers can be removed conveniently and quickly in series.

[0049] FIG. 5 shows a detail view of the supporting arm 8 and all its attachments to the compartment base according to a first refinement. FIG. 5 clearly shows the first pin 10 inserted into the blind hole 7 in the sidewall 2, the second pin 11 connected to the compartment base 1, the pivoting axes A1, A2 defined by the pins and the intermediate section 12. In this case, the compartment base 1 is essentially in the form of a glass plate 17, which is in the form of a peripheral profile 18 composed of metal, or a hard, load-bearing plastic. As can be seen more clearly in FIG. 1, the profile 18 has two cutouts on each side edge of the compartment base 1, into which a connecting body 19 made of a tough plastic material which can be deformed slightly, such as Delrin, is inserted.

[0050] FIG. 6 shows a perspective view of the connecting body 19. Starting from a top panel 20 which has grooves on

its top face so that it can be handled more easily, two limbs **21** extend downwards and between them bound a cutout or groove **22** with a cross section that is matched to the cross section of the second pin **11**. The size of the groove **22** is such that the second pin **11** is clamped in it and can be rotated subject to friction, and it is slightly tapered in its lower area so that, although it is possible to push the pin **11** downwards in the groove **22**, it can, however, not fall out of the groove **22** when a user is supporting the compartment base **1** by hand, in order to move it to a raised rest position.

[0051] In their lower, distal area, the two limbs **21** are each lengthened at the side by a tongue **23** that, together with the top panel **20** holds the side edge of the compartment base **1** clamped in.

[0052] As already mentioned, a locking device is expedient in order to secure the supporting arms **8** in the raised position. One example of a locking apparatus such as this will now be described with reference to the FIGS. 7 and 8. FIG. 7 shows a plan view of the front right-hand corner of the compartment base **1**, on whose lower face a locking device such as this is disposed. A locking device that is a mirror image of that shown in FIG. 7 is located on the left-hand front corner of the compartment base.

[0053] FIG. 8 shows a side view of the corner and of the locking device. A short pin **25** extends downwards from the profile **18** that forms the side edge of the compartment base **1**, and is fitted with a tongue **26** that is flexible in the direction of the arrow P. Starting from the pin **25**, the tongue **26** successively has a section **27** (which is parallel to the side edge of the compartment base **1** in its destressed position shown in FIG. 7), a section **28** (which runs obliquely outward at an acute angle to the side edge), a locking section in the form of a stop surface **29** (which is at right angles to the side edge) and an operating section **30**. In the illustrated position, the stop surface **29** prevents the supporting arm **8** from rotating in the direction of the arrows P2 in FIG. 8, and thus holds the compartment base **1** in the raised position. If a user wishes to lower the compartment base, then it is sufficient to push the operating section **30** slightly to the side, upwards in FIG. 7, for the stop surface **29** to release the supporting arm **8**. There is no need to operate the locking device when the compartment base **1** is being raised, because the supporting arm **8** automatically pushes the oblique section **28** sideways during raising, until the upper rest position is reached and the stop surface **29** latches in behind the supporting arm **8** in the position shown in FIG. 7.

[0054] Since the supporting arms **8**, which engage in opposite side walls **2** of the refrigerator housing, can be moved independently of one another, it is possible for a user to raise the supporting arms **8** further on one sidewall, the right-hand sidewall in FIG. 9, from the position of the compartment base **1** shown by solid lines in FIG. 3, in which the intermediate sections **12** of the supporting arms **8** are oriented horizontally, while he allows them to return to their low position on the opposite sidewall. This allows the naturally sloping position of the compartment base **1**, a front view of which is shown in FIG. 9, to be set. When round objects such as cans and bottles are stored horizontally, this position also allows these objects to gather on one side of the compartment base **1**. The higher, free area of the compartment base **1** can thus be continually replenished, and when-

ever the lowermost container is removed from a compartment base, this ensures that this is only that container which has already been located on the compartment base for the longest time, and which is supposedly the best cooled.

[0055] If a user needs to inhibit this capability to use an inclined position, then this can be achieved with the aid of supporting arms **8'** which are coupled in pairs, as is shown in FIG. 10. In this case, a supporting arm on the right-hand side wall and an opposite supporting arm on the left-hand side wall **2** are integrally connected by a rod which extends underneath the compartment base **1**, so that they can only be raised and lowered together.

[0056] Single supporting arms **8** and supporting arms **8'** which are connected in pairs may be delivered as accessories for optional use by a user with the refrigerator according to the invention, so that each user can decide for himself whether or not he wishes to use the inclined position capability.

[0057] FIG. 11 shows an alternative way to connect the supporting arm **8** to the compartment base **1**, on the basis of a section parallel to its side edge. If the material of the compartment base **1** or its frame profile **18** has a certain amount of elasticity, then it is possible to replace the connecting body **19** by the integral solution described here, in which the limbs **21** which bound the groove **22** for holding the second pin **11** are integrally formed on the compartment base **1** or on the frame **18**.

[0058] A further modification of the suspension device for the compartment base **1** is shown in the form of a side view in FIG. 12, analogously to the illustrations in FIGS. 2 and 3. This modification differs from the refinement shown in FIG. 2 only by the presence of a third supporting arm **8** on each side edge of the compartment base **1**. If the compartment base **1** shown in FIG. 12 is in this case raised from the position shown in the solid lines, then this third supporting arm prevents the front and rear supporting arms from having the capability to pivot in different directions, starting from the intermediate position, in which the intermediate sections **12** of the supporting arms **8** are in a horizontal position. This therefore prevents a user inadvertently setting the compartment base **1** in a position in which it slopes forwards or to the rear and in which there is a risk of refrigerated items falling out or falling over. This modification is thus particularly highly suitable for adapting the heights of the compartment bases in a loaded cabinet refrigerator to the particular requirements.

[0059] In this case as well, a user can simply choose whether he wishes to use or inhibit the inclined position capability by in each case at least one third of the blind holes **7** on each sidewall of the refrigerator housing being disposed in a horizontal row, and by the compartment bases being provided with a corresponding number of cutouts **22** on each side edge. Depending on whether the user fits supporting arms **8** to two or more of the blind holes **7** and cutouts **22**, he can determine whether the inclined position is or is not possible.

[0060] FIG. 13 shows a perspective view of a simplified modification of the suspension device for the compartment base **1**, in which in each case only one supporting arm **8** that can pivot is provided on each side edge of the compartment base **1**. The second supporting arm is replaced by a rigid pin

31, which can be moved backwards and forwards horizontally in the direction of the arrow **P3** in an elongated hole **32** which is formed on the side wall of the refrigerator housing. In this refinement, the height of that area of the compartment base which is supported by the pin **31** and faces the rear wall **3** of the refrigerator housing is fixed, and only the front area can be moved between a horizontal position and a sloping position, or between two positions which slope in different directions.

We claim:

1. A refrigerator, comprising:
 - a housing defining and surrounding an internal area and having walls;
 - at least one compartment base mountable in said internal area at different heights on said walls of said housing; and
 - supporting arms mounting said compartment base to said walls, each of said supporting arms being connected to one of said walls such that said supporting arms pivot about a first axis and further connected to said compartment base such that said supporting arms can pivot about a second axis being offset with respect to said first axis.
2. The refrigerator according to claim 1, further comprising a suspension device, one of said supporting arms which can pivot and said suspension device which can be moved horizontally are provided on each side edge of said compartment base.
3. The refrigerator according to claim 1, wherein two of said supporting arms which can pivot include a front supporting arm and a rear supporting arm are provided on each side edge of said compartment base, and said compartment base is able to assume an upper rest position, in which said second axis runs above said first axis of each of said supporting arms, a lower rest position in which said second axis runs below said first axis of each of said supporting arms, and at least one oblique rest position in which said second axis of said front supporting arm runs below said first axis, and said second axis of said rear supporting arm runs above said first axis or said second axis of said front supporting arm runs above said first axis, and said second axis of said rear supporting arm runs below said first axis.
4. The refrigerator according to claim 1, wherein at least three of said supporting arms which can pivot are provided on each side edge of said compartment base.

5. The refrigerator according to claim 1, wherein at least some of said supporting arms are disposed on a first side edge of said compartment base and can be moved to a different rest position than others of said supporting arms which are fitted to an opposite second side edge.

6. The refrigerator according to claim 1, wherein said supporting arms, which are fitted on opposite side edges of said compartment base, are each connected to one another in pairs.

7. The refrigerator according to claim 1, further comprising a holding apparatus for holding refrigerated items is fitted to at least one of a front edge and a rear edge of said compartment base.

8. The refrigerator according to claim 3, wherein when each of said supporting arms is in an upper rest position, said second axis is located closer to a rear wall of said internal area than said first axis.

9. The refrigerator according to claim 1, further comprising at least one device (**25, 26, 27, 28, 29, 30**) for locking a respective one of said supporting arms at least in a raised position.

10. The refrigerator according to claim 9, wherein:

said walls having openings formed therein;

said compartment base has cutouts formed therein; and

each of said supporting arms has a first pin for engaging in one of said openings in a respective one of said walls, a second pin for engaging in a respective one of said cutouts in said compartment base, and an intermediate section, which is angled with respect to said first and second pins and connects said first and second pins.

11. The refrigerator according to claim 10, wherein said device for locking has a tongue, said tongue can be moved elastically and has a stop surface for supporting a face of said intermediate section which faces a rear wall of said housing.

12. The refrigerator according to claim 10, wherein said respective cutout is open at a bottom, and said second pin is clamped in said respective cutout.

13. The refrigerator according to claim 12, further comprising a plastic body plugged into said compartment base and said respective cutout is formed in said plastic body.

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