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(54) **A HOME APPLIANCE HAVING A HINGE WITH A SUPPORT ARM**

HAUSHALTGERÄT UMFASSEND EIN SCHARNIER MIT TRAGARM

APPAREIL DOMESTIQUE COMPORTANT UNE CHARNIÈRE AVEC BRAS DE SUPPORT

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(56) References cited:
EP-A2- 0 927 804 EP-B1- 1 506 342
DE-A1-102010 039 743 US-A- 6 070 300

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Description

TECHNICAL FIELD

[0001] The present invention relates to a home appliance, particularly a cooling device.

PRIOR ART

[0002] In home appliances in cabinet form and particularly in cooling devices, hinges are utilized which are connected to the cabinet body through the bottom and top of the door for opening the door by rotating. By means of the work performed, the hinges in thick plate form are begun to be designed in different forms for providing assembly facility and for bringing advantages like less material usage. As can be seen in the patent application EP1506342A2, the invention relates to a door support part for a home appliance in cabinet form and comprises a carrier arm and a pin forming tab outwardly from the carrier arm; and characterized in that it extends from the carrier arm in an extension of the bearing pin in an opposite direction to the first direction for the home appliance. On the carrier arm, there is a socket made of plastic so as to engage onto the pin. The end part of the carrier arm opposite to the socket is formed in a short and narrow latch form, this latch has a high bending hardness by means of a pressed groove. The latch is utilized for being pushed into by means of a positive lock into housing on the casing. After the latch is placed to the housing, the carrier arm is connected to the casing by means of a bolt.

[0003] In the patent application DE19825979A1 which is another embodiment, the invention has at least one door support having a plug-in part and a corresponding socket part made in one piece with a housing part. The plug-in part fits telescopically in the socket part and is held on all sides, so that transverse tilting forces are resisted. The refrigerator has a housing with door mountings for one or more doors. At least one door mounting has a plug-in part with a corresponding socket part made in one piece with a housing part, in which the plug-in part fits telescopically, and which holds the plug-in part on all sides. The length of the telescopic overlap of the plug-in part in the socket part is such that the socket part resists tilting forces transverse to the insertion direction transferable from the door via the plug-in part to the socket part.

[0004] US 6 070 300 A discloses a refrigerator door supporting structure, comprising a fixation bracket disposed at a top door.

[0005] EP 0 927 804 A1 discloses a mounting piece for connecting a door to a housing, whereas the mounting piece comprises a positioning pin.

OBJECT OF INVENTION

[0006] The object of the present invention is to provide a home appliance, particularly a cooling device, with a

low-cost support arm having a bottom hinge for a refrigerator door and which can be assembled in an easy manner.

[0007] In order to realize said object and the objects which are to be deduced from the detailed description below, the present invention is a home appliance, particularly a cooling device, having a heat insulated body forming a cabinet; a door hinged to said body; a connection plate provided on the body and having an assembly hole; and a hinge with a support arm with an assembly hole from one end connected to the connection plate and from other end mounted to the door. Accordingly, said support arm is characterized in that at least one fixation tab is provided on the support arm, and at least one fixation hole provided on the connection plate such that the fixation tab rests therein; and the fixation hole is positioned on the connection plate such that the assembly holes are being aligned with each other when the fixation tab is rested in the fixation hole. Thus, the movement of the assembly hole of the support arm inside the fixation hole axis is prevented.

[0008] In a preferred embodiment of the present invention, the connection plate comprises at least one positioning tab provided at a vicinity of the fixation hole; and the support arm comprises at least one positioning hole, wherein the positioning tab is disposed, at a vicinity of the fixation tab. Thus, the radial deviations of the assembly holes with respect to the axis where the fixation tab and the fixation hole are provided are prevented.

[0009] According to the invention, the fixation tab is embodied outwardly in an "r" shape from the support arm's surface contacting the connection plate and the fixation tab comprises at least one seating part pressing to the vicinity of the fixation hole on the connection plate. Thus, the disengagement of the fixation tab from the fixation hole during assembly is prevented.

[0010] In another preferred embodiment of the present invention, the fixation tab is provided at the end of the support arm. Thus, the placement of the fixation tab to the fixation hole can be performed in an easier manner when compared with the case where the fixation tab is at a different position.

[0011] According to the invention, the support arm extends from the door to the body at the lower alignment of the body. Thus, the support arm is connected to a body base.

[0012] In another preferred embodiment of the present invention, the support arm belongs to a bottom hinge.

[0013] In another preferred embodiment of the present invention, the support arm comprises at least one wing provided in the form of a tab towards the ground from the surface thereof facing the floor along at least one long edge of the support arm. Thus, the strength of the support arm is improved.

[0014] In another preferred embodiment of the present invention, the support arm comprises at least one bearing pin which is substantially vertical to the support arm's surface which is in connection to the connection plate

and whereon at least one hinge bearing is positioned. Thus, the door is seated on the hinge bearing.

[0015] In another preferred embodiment of the present invention, the support arm comprises at least one adjustment hole whose two ends are exposed and which is connected to the foot at a vicinity of the bearing pin. Thus, when a cover is seated onto the support arm, the foot can be adjusted at the required height.

[0016] In another preferred embodiment of the present invention a liner is provided in said body and an insulation material is provided between the body and the liner and at least one cardboard is provided between the insulation material and the body in order to prevent leakage of the insulation material through openings provided on the body and wherein the connection plate comprises at least one clearance tab provided at the vicinity of the fixation hole and configured so as to form a passage gap between the cardboard and the connection plate. This passage gap is suited for receiving the fixation tab. That is, preferably the fixation tab is situated within the passage gap and preferably the fixation tab will not contact the cardboard during and after the assembly of the support arm. In this way the fixation tab can be inserted into the fixation hole without being obstructed by the cardboard, the sealing material or other parts. In particular, the fixation tab cannot damage the cardboard, the sealing material or other parts when being inserted into the fixation hole.

[0017] In another preferred embodiment of the present invention the clearance tab is obtained as a result of bending a piece which is formed during opening of the fixation hole. Thus, the clearance tab can be formed during the production of the connection plate without the need for an additional process.

[0018] In another preferred embodiment of the present invention the connection plate comprises at least one elevation provided at the vicinity of the fixation hole. Thus, the cardboard extends on the clearance tab and on the elevation.

[0019] In another preferred embodiment of the present invention the connection plate comprises at least one seating part, whereon the fixation tab is placed, between the fixation hole and the elevation. Thus, the fixation tab completely sits on the connection plate.

[0020] In another preferred embodiment of the present invention a hinge bearing for disposing the door on the support arm is provided and a foot for transferring the weight of the door to the ground is provided and the support arm comprises an adjustment hole wherein the foot is disposed and a bearing housing having a hollow cylindrical form wherein the hinge bearing is housed, said bearing housing being positioned in an essentially coaxial manner with the adjustment hole. Due to this coaxial design the weight of the door can be transferred onto the foot and hence on the ground without causing any bending moments to the support arm.

[0021] In another preferred embodiment of the present invention the bearing housing is provided at a vicinity of the end of the support arm. Thus, the support arm is

extending outwardly from the door in a parallel manner with respect to the ground and the aesthetical appearance is not deteriorated.

[0022] In another preferred embodiment of the present invention the support arm is made of zinc-aluminum based alloyed material in a manner that the adjustment hole and the bearing housing are coaxial. Thus, when the door is seated to the hinge bearing, a depression is not occurring.

[0023] In another preferred embodiment of the present invention the hinge bearing has a hollow cylindrical structure in a compliant form to the bearing housing. Thus, simplified production and assembly is facilitated. Preferably, the hinge bearing is pushed onto the bearing housing.

BRIEF DESCRIPTION OF THE FIGURES

[0024]

- In Figure 1, a representative view of cooling device where the subject matter support arm will be utilized is given.
- In Figure 2, a representative view of the subject matter support arm together with the pieces the support arm will be connected thereto is given.
- In Figure 3, a representative view of the subject matter support arm is given, where the support arm is in assembled form to a body part.
- In Figure 4, another representative view of the subject matter support arm together with the pieces the support arm will be connected thereto is given.
- In Figure 5, another representative view of the subject matter support arm is given, where the support arm is in assembled form to a body part.
- In Figure 6, a representative view of a support arm is given.
- In Figure 7, a representative view of a connection plate is given.
- In Figure 8, a representative view of a connection plate and a cardboard is given prior to the application of insulation material.
- In Figure 9, a representative view of a connection plate and a cardboard is given after the application of insulation material.
- In Figure 10, a representative view of a support arm and of a connection plate in assembled form is given.
- In Figure 11, another representative view of the support arm and of the connection plate of Fig. 10 in assembled form is given.
- In Figure 12, a representative view of a hinge in dismantled form is given.
- In Figure 13, a top view of the support arm of Fig. 12

is given.

THE DETAILED DESCRIPTION OF THE INVENTION

[0025] In this detailed description, the home appliance including the subject matter support arm 40 is explained with references to examples without forming any restrictive effect in order to make the subject more understandable.

[0026] The embodiment according to the present invention comprises a support arm 40 of a hinge 30 embodied in order to be utilized in the connection of the door 20 to the body 10 for a home appliance and preferably for a cooling device having a heat insulated body 10 in cabinet form. The support arm 40 is assembled by being joined with a connection plate 50 provided in the body part 11 of the body 10. The support arm 40 is embodied in an arm form whose at least one long edge is bent in wing 46 form for increasing the strength thereof. A bearing pin 45 is provided which is embodied essentially vertically with respect to the support arm 40 where the hinge bearing 80, where the door 20 will be placed, is positioned at one end of the support arm 40. The first one of the two holes, provided at the vicinity of the intermediate part of the support arm 40, is the adjustment hole 44 where the foot 60 is provided, supporting the support arm 40 while the support arm 40 is carrying the weight of the door 20, and when the support arm 40 is connected to the connection plate 50, the two ends of the hole are provided at a bare region. Thus, the foot 60 can be adjusted to the desired height. The other hole is the assembly hole 43 providing connection of the support arm 40 to the connection plate 50 by means of at least one connection member 70. At the other end of the support arm 40, a seating part 411 is obtained and a fixation tab 41 embodied in an "r" like form. There is a positioning hole 42 provided at the vicinity of the fixation tab 41. In the connection plate 50 embodied in a compliant manner to the structure of the support arm 40, there is a fixation hole 51 wherein the fixation tab 41 will be placed, and a positioning tab 52 and an assembly hole 53 are embodied which will be connected to the positioning hole 42 at the continuation thereof.

[0027] While the connection of the support arm 40 to the connection plate 50 is being realized, first of all, the fixation tab 41 provided on the support arm 40 is placed to the fixation hole 51 provided on the connection plate 50. By means of the seating part 411 provided on the fixation tab 41, the fixation tab 41 is prevented from disengaging from the fixation hole 51 by means of engagement onto the connection plate 50. Afterwards, the positioning tab 52, provided on the connection plate 50, is placed to the positioning hole 42 provided on the support arm 40. As a result of these two movements, the assembly holes 43, 53, provided on the support arm 40 and on the connection plate 50, are provided to correspond to each other. Afterwards, connection through the assembly holes 43, 53 is realized by means of the connection

member 70. The foot 60, having a cylindrical grooved part 62 where a groove is formed on the side surface thereof, is placed to the adjustment hole 44 from the grooved part 62 thereof 60, and by being rotated, the foot 60 is adjusted to the height where the contact of the seating part 63, provided at the shoe 61 part on one end, to the floor is realized. The shoe 61 is provided so as to have a structure compliant to a key edge.

[0028] An embodiment of the invention relating to an easier and safer assembly of the home appliance by forming a passage gap between a cardboard and the connection plate is illustrated in the Figures 6-11.

[0029] In this detailed embodiment, the cooling device has a body 10, a liner 90 provided inside the body 10 and an insulation material 100 is provided between the body 10 and the liner 90.

[0030] As can be seen in Figure 6, at one end of the support arm 40, a bearing pin 45 is provided essentially embodied in a vertical manner with respect to the support arm 40. The hinge bearing 80, to be connected to the door 20, is positioned on said bearing pin 45, e.g. the hinge bearing 80 is pushed onto the bearing pin. There is an adjustment hole 44 adjacent to the bearing pin 45 into which a foot 60 can be connected. An assembly hole 43 is positioned at a vicinity of the middle region of the support arm 40 and a centering pin 48 is positioned at the continuation of the support arm 40. At the other end of the support arm 40, a fixation tab 41 and a seating part 411 are obtained embodied in an "r" like manner. As can be seen in Figure 7, in the connection plate 50 embodied in a compliant manner to the structure of the support arm 40, there is a fixation hole 51 wherein the fixation tab 41 will be placed; and at the continuation, a centering hole 57 and an assembly hole 53 are embodied. The centering pin 48 will engage the centering hole 57 and the assembly hole 43 will be aligned with the assembly hole 53 in the assembled form.

[0031] As will be seen in Figure 10 and 11, while the connection of the support arm 40 to the connection plate 50 is being realized, first of all, the fixation tab 41, provided on the support arm 40, is placed to the fixation hole 51 provided on the connection plate 50. By means of the seating part 411 provided on the fixation tab 41, the fixation tab 41 is prevented from being accidentally removed through the fixation hole 51 as a result of fixation onto the connection plate 50. Afterwards, the centering pin 48, provided on the support arm 40, is inserted into the centering hole 57 provided on the connection plate 50. As a result of these two movements, the assembly holes 43, 53, provided on the support arm 40 and on the connection plate 50, are aligned with each other. Afterwards, connection is realized through the assembly holes 43, 53 by means of a connection member.

[0032] Insulation foam, expanding during the drying process, is utilized as insulation material 100 between the body 10 and the liner 90. As on the connection plate 50, in some regions of the body 10, there are openings formed due to the production methods. Due to the ex-

pansion of the insulation material 100, cardboard 110 is placed between the body 10 and the insulation material 100 as illustrated in Figure 8, in order to prevent overflows through said openings. As can be seen in Figure 9, the openings are covered by pressing the cardboard 100 towards the body 10 as a result of the expansion of the insulation material 100. A gap is preferable between the connection plate 50 and the cardboard 110 for passing the fixation tab 41 provided at the support arm 40 through the fixation hole 51 provided on the connection plate 50 and for providing connection of the seating part 411 provided on the fixation tab 41 and the seating part 54 provided at a vicinity of the fixation hole 51. In order to meet said need, a clearance tab 55 is provided at a vicinity of the fixation hole 51 on the connection plate 50 and embodied in tab form extending from the connection plate 50 towards the cardboard 110. A passage gap 120 is formed between the connection plate 50 and the cardboard 110 extending between the elevation 56 embodied on said connection plate 50 and the clearance tab 55 also embodied on said connection plate 50. Thus, while the cardboard 110 prevents insulation material 100 from leaking through openings of the body 10, the passage gap 120 still allows the fixation tab 41 to be pushed into the fixation hole 51 without interfering with the cardboard 110.

[0033] Figures 12 and 13 show a different embodiment of a hinge to be used in a home appliance according to the invention.

[0034] With reference to Figures 12 and 13, the hinge 30, which is in dismantled form, comprises a hinge bearing 80 where the door 20 is seated; a support arm 40 having a bearing housing 47 where the hinge bearing 80 is positioned at one end and an adjustment hole 44 provided inside the bearing housing 47; a foot 60 placed into the adjustment hole 44. The bearing housing 47 is essentially embodied in a vertical manner with respect to the support arm 40. The support arm 40 comprises a fixation tab 41 embodied in "r" shape at the end opposite to the bearing housing 47, and a positioning hole 42 embodied at a vicinity of the fixation tab 41. At a vicinity of the middle section of the support arm 40, an assembly hole 43 is positioned providing connection of the support arm 40 to the connection plate 50 by means of a connection member. The foot 60 comprises a seating part 63 and a grooved part 62 extending in an upward vertical manner from the middle section of the seating part 63. The bearing housing 47 on which the hinge bearing 80 is pushed onto is coaxial with the adjustment hole 44. In this way, forces resulting from the weight of the door 20 will be transferred directly to the foot 60 without causing bending moments on the support arm 40.

[0035] The protection scope of the present invention is set forth in the annexed claims and cannot be restricted to the illustrative disclosures given above, under the detailed description. It is because a person skilled in the relevant art can obviously produce similar embodiments under the light of the foregoing disclosures, without de-

parting from the main principles of the present invention, as defined by the claims.

REFERENCE NUMBERS

[0036]

	10 body
	11 body part
5	20 door
	30 hinge
	40 support arm
	41 fixation tab
	411 seating part
10	42 positioning hole
	43 assembly hole
	44 adjustment hole
	45 bearing pin
	46 wing
15	47 bearing housing
	48 centering pin
	50 connection plate
	51 fixation hole
	52 positioning tab
20	53 assembly hole
	54 seating part
	55 clearance tab
25	56 elevation
	57 centering hole
30	60 foot
	61 shoe
	62 grooved part
	63 seating part
	70 connection member
35	80 hinge bearing
	90 liner
	100 insulation material
	110 cardboard
40	120 passage gap

Claims

1. A home appliance, particularly a cooling device, having a heat insulated body (10) forming a cabinet; a door (20) hinged to said body (10); a connection plate (50) provided on the body (10) and having a first assembly hole (53); and a hinge (30) with a support arm (40) with a second assembly hole (43) from one end connected to the connection plate (50) and from other end mounted to the door (20), wherein at least one fixation tab (41) is provided on the support arm (40), and at least one fixation hole (51) is provided on the connection plate (50) such that the fixation tab (41) rests therein, wherein the support arm (40) extends from the door (20) to the body (10) at the lower alignment of the body (10) and wherein the support arm (40) is connected to a body base, **char-**

acterized in that the fixation hole (51) is positioned on the connection plate (50) such that the assembly holes (43, 53) are being aligned with each other when the fixation tab (41) is rested in the fixation hole (51), and that the fixation tab (41) is embodied outwardly in an "r" shape from the support arm's (40) surface contacting to the connection plate (50) and the fixation tab (41) comprises at least one seating part (411) pressing to the vicinity of the fixation hole (51) on the connection plate (50).

2. A home appliance according to claim 1, **wherein** the connection plate (50) comprises at least one positioning tab (52) provided at a vicinity of the fixation hole (51); and the support arm (40) comprises at least one positioning hole (42), wherein the positioning tab (52) is disposed, at a vicinity of the fixation tab (41).
3. A home appliance according to any one of the preceding claims, **wherein** the fixation tab (41) is provided at the end of the support arm (40).
4. A home appliance according to any one of the preceding claims, **wherein** the support arm (40) comprises at least one wing (46) provided in the form of a tab towards the ground from the surface thereof facing the floor along at least one long edge of the support arm (40).
5. A home appliance according to any one of the preceding claims, **wherein** the support arm (40) comprises at least one bearing pin (45) which is substantially vertical to the support arm's (40) surface which is in connection to the connection plate (50) and whereon at least one hinge bearing (80) is positioned.
6. A home appliance according to any one of the preceding claims, **wherein** the support arm (40) comprises at least one adjustment hole (44) whose two ends are exposed and which is connected to the foot (60) at a vicinity of the bearing pin (45).
7. A home appliance according to any one of the preceding claims, **wherein** a liner (90) is provided in said body (10) and an insulation material (100) is provided between the body (10) and the liner (90) and at least one cardboard (110) is provided between the insulation material (100) and the body (10) in order to prevent leakage of the insulation material (100) through openings provided on the body (10) and wherein the connection plate (50) comprises at least one clearance tab (55) provided at the vicinity of the fixation hole (51) and configured so as to form a passage gap (120) between the cardboard (110) and the connection plate (50).

8. A home appliance according to claim 7, **wherein** the connection plate (50) comprises at least one elevation (56) provided at the vicinity of the fixation hole (51).
9. A home appliance according to claim 8, **wherein** the connection plate (50) comprises at least one seating part (54), where to the fixation tab (41) is placed, between the fixation hole (51) and the elevation (56).
10. A home appliance according to any one of the preceding claims, **wherein** a hinge bearing (80) for disposing the door (20) on the support arm (40) is provided and a foot (60) for transferring the weight of the door (20) to the ground is provided and the support arm (40) comprises an adjustment hole (44) wherein the foot (60) is disposed and a bearing housing (47) having a hollow cylindrical form wherein the hinge bearing (80) is housed, said bearing housing (47) being positioned in an essentially coaxial manner with the adjustment hole (44).
11. A home appliance according to claim 10, **wherein** the bearing housing (47) is provided at a vicinity of the end of the support arm (40).
12. A home appliance according to claim 10 or 11, **wherein** the hinge bearing (80) has a hollow cylindrical structure in a compliant form to the bearing housing (47).

Patentansprüche

1. Haushaltsgesät, insbesondere KÜhlvorrichtung, mit einem ein Gehäuse bildenden, wärmegeedämmten Hauptteil (10), einer an den Hauptteil (10) angelenkten Tür (20), einer an dem Hauptteil (10) vorgesehene Verbindungsplatte (50) mit einer ersten Montagebohrung (53) und einem Scharnier (30) mit einem Haltearm (40) mit einer zweiten Montagebohrung (43), der an einem Ende mit der Verbindungsplatte (50) verbunden und am anderen Ende an der Tür (20) angebracht ist, wobei mindestens eine Befestigungszunge (41) an dem Haltearm (40) und mindestens eine Befestigungsbohrung (51) so an der Verbindungsplatte (50) vorgesehen ist, dass sie die Befestigungszunge (41) aufnimmt, wobei der Haltearm (40) an der unteren Ausrichtung des Hauptteils (10) von der Tür (20) bis zum Hauptteil (10) verläuft und mit einem Sockel des Hauptteils verbunden ist, **dadurch gekennzeichnet, dass** die Befestigungsbohrung (51) so an der Verbindungsplatte (50) angeordnet ist, dass die Montagebohrungen (43, 53) miteinander fluchten, wenn die Befestigungszunge (41) in der Befestigungsbohrung (51) aufgenommen ist, und dass die Befestigungszunge (41) von der Oberfläche des Haltearms (40) aus, die die Verbindungsplatte (50) berührt, nach unten verläuft.

- dungsplatte (50) berührt, nach außen hin eine "r"-Form aufweist und mindestens einen Anliegeteil (411) umfasst, der in der Nähe der Befestigungsbohrung (51) an die Verbindungsplatte (50) drückt.
2. Haushaltsgerät nach Anspruch 1, wobei die Verbindungsplatte (50) mindestens eine Positionierzunge (52), die in der Nähe der Befestigungsbohrung (51) vorgesehen ist, und der Haltearm (40) mindestens eine Positionierbohrung (42), in der die Positionierzunge (52) angeordnet ist, in der Nähe der Befestigungszunge (41) umfasst. 10
 3. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei die Befestigungszunge (41) am Ende des Haltearms (40) vorgesehen ist. 15
 4. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei der Haltearm (40) mindestens einen Flügel (46) umfasst, der in Form einer Zunge vorgesehen ist, die von seiner dem Fußboden zugewandten Fläche aus zumindest an einer langen Kante des Haltearms (40) entlang zum Boden hin verläuft. 20
 5. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei der Haltearm (40) mindestens einen Lagerstift (45) umfasst, der im Wesentlichen senkrecht zu der Fläche des Haltearms (40) verläuft, die mit der Verbindungsplatte (50) verbunden ist, und an dem mindestens ein Scharnierlager (80) angeordnet ist. 25
 6. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei der Haltearm (40) mindestens eine Justierbohrung (44) umfasst, deren beide Enden freiliegen und die in der Nähe des Lagerstifts (45) mit dem Fuß (60) verbunden ist. 30
 7. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei in dem Hauptteil (10) ein Behälter (90) und zwischen dem Hauptteil (10) und dem Behälter (90) ein Dämmmaterial (100) vorgesehen ist und zwischen dem Dämmmaterial (100) und dem Hauptteil (10) mindestens eine Pappe (110) vorgesehen ist, um ein Austreten des Dämmmaterials (100) durch am Hauptteil (10) vorgesehene Öffnungen zu verhindern, und wobei die Verbindungsplatte (50) mindestens eine Abstandszunge (55) umfasst, die in der Nähe der Befestigungsbohrung (51) vorgesehen und so konfiguriert ist, dass zwischen der Pappe (110) und der Verbindungsplatte (50) ein Durchgangsspalt (120) gebildet wird. 40
 8. Haushaltsgerät nach Anspruch 7, wobei die Verbindungsplatte (50) mindestens eine Erhebung (56) umfasst, die in der Nähe der Befestigungsbohrung (51) vorgesehen ist. 45
 9. Haushaltsgerät nach Anspruch 8, wobei die Verbindungsplatte (50) zwischen der Befestigungsbohrung (51) und der Erhebung (56) mindestens einen Anliegeteil (54) umfasst, an dem die Befestigungszunge (41) angeordnet ist. 50
 10. Haushaltsgerät nach einem der vorhergehenden Ansprüche, wobei ein Scharnierlager (80) zum Anordnen der Tür (20) an dem Haltearm (40) und ein Fuß (60) zum Übertragen des Gewichts der Tür (20) auf den Boden vorgesehen ist und der Haltearm (40) eine Justierbohrung (44), in der der Fuß (60) angeordnet ist, und ein Lagergehäuse (47) von hohlzylindrischer Form umfasst, in dem das Scharnierlager (80) untergebracht ist, wobei das Lagergehäuse (47) im Wesentlichen koaxial mit der Justierbohrung (44) angeordnet ist. 55
 11. Haushaltsgerät nach Anspruch 10, wobei das Lagergehäuse (47) in der Nähe des Endes des Haltearms (40) vorgesehen ist.
 12. Haushaltsgerät nach Anspruch 10 oder 11, wobei das Scharnierlager (80) eine hohlzylindrische Konstruktion aufweist, deren Form dem Lagergehäuse (47) entspricht.

Revendications

1. Appareil ménager, en particulier un dispositif de refroidissement, comportant un corps à isolation thermique (10) formant un meuble ; une porte (20) articulée par charnière sur ledit corps (10) ; une plaque de raccordement (50) se trouvant sur le corps (10) et présentant un premier trou de montage (53) ; et une charnière (30) dotée d'un bras de support (40) pourvu d'un second trou de montage (43) depuis une extrémité reliée à la plaque de raccordement (50) et depuis l'autre extrémité montée sur la porte (20), dans lequel au moins une patte de fixation (41) se trouve sur le bras de support (40), et au moins un trou de fixation (51) est ménagé sur la plaque de raccordement (50) de manière que la patte de fixation (41) repose dans celui-ci, dans lequel le bras de support (40) s'étend de la porte (20) au corps (10) dans l'alignement inférieur du corps (10) et dans lequel le bras de support (40) est relié à une base de corps, **caractérisé en ce que** le trou de fixation (51) est positionné sur la plaque de raccordement (50) de manière que les trous de montage (43, 53) soient alignés entre eux lorsque la patte de fixation (41) est posée dans le trou de fixation (51), et **en ce que** la patte de fixation (41) est réalisée vers l'extérieur selon une forme de « r », depuis la surface du bras de support (40) entrant en contact avec la plaque de raccordement (50) et la patte de fixation (41) comprend au moins une partie d'appui (411) appuyant

au voisinage du trou de fixation (51) sur la plaque de raccordement (50).

2. Appareil ménager selon la revendication 1, dans lequel la plaque de raccordement (50) comprend au moins une patte de positionnement (52) se trouvant au voisinage du trou de fixation (51) ; et le bras de support (40) comprend au moins un trou de positionnement (42), dans lequel est disposée la patte de positionnement (52), au voisinage de la patte de fixation (41). 5
3. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel la patte de fixation (41) se trouve à l'extrémité du bras de support (40). 10
4. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel le bras de support (40) comprend au moins une aile (46) se présentant sous la forme d'une patte en direction de la terre, depuis sa surface orientée vers le sol, le long d'au moins un bord long du bras de support (40). 15
5. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel le bras de support (40) comprend au moins un axe de palier (45) qui est sensiblement vertical par rapport à la surface du bras de support (40) qui est en liaison avec la plaque de raccordement (50) et sur lequel est positionné au moins un palier d'articulation (80). 20
6. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel le bras de support (40) comprend au moins un trou de réglage (44) dont les extrémités sont apparentes et qui est relié au pied (60) au voisinage de l'axe de palier (45). 25
7. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel une chemise (90) se trouve dans ledit corps (10) et un matériau isolant (100) se trouve entre le corps (10) et la chemise (90) et au moins un carton (110) se trouve entre le matériau isolant (100) et le corps (10) afin d'éviter une fuite du matériau isolant (100) à travers des ouvertures ménagées sur le corps (10) et dans lequel la plaque de raccordement (50) comprend au moins une patte d'espacement (55) se trouvant au voisinage du trou de fixation (51) et conçue de manière à former un intervalle de passage (120) entre le carton (110) et la plaque de raccordement (50). 30
8. Appareil ménager selon la revendication 7, dans lequel la plaque de raccordement (50) comprend au moins une élévation (56) se trouvant au voisinage du trou de fixation (51). 35
9. Appareil ménager selon la revendication 8, dans le-

quel la plaque de raccordement (50) comprend au moins une partie d'appui (54) sur laquelle est placée la patte de fixation (41), entre le trou de fixation (51) et l'élévation (56).

10. Appareil ménager selon l'une quelconque des revendications précédentes, dans lequel un palier d'articulation (80) permettant de disposer la porte (20) sur le bras de support (40) est mis en place et un pied (60) permettant de transférer le poids de la porte (20) sur le sol est mis en place et le bras de support (40) comprend un trou de réglage (44) dans lequel est disposé le pied (60) et un logement de palier (47) présentant une forme cylindrique creuse dans lequel est logé le palier d'articulation (80), ledit logement de palier (47) étant positionné de manière sensiblement coaxiale au trou de réglage (44). 40
11. Appareil ménager selon la revendication 10, dans lequel le logement de palier (47) se trouve au voisinage de l'extrémité du bras de support (40). 45
12. Appareil ménager selon la revendication 10 ou 11, dans lequel le palier d'articulation (80) possède une structure cylindrique creuse conforme à la forme du logement de palier (47). 50

Fig. 1

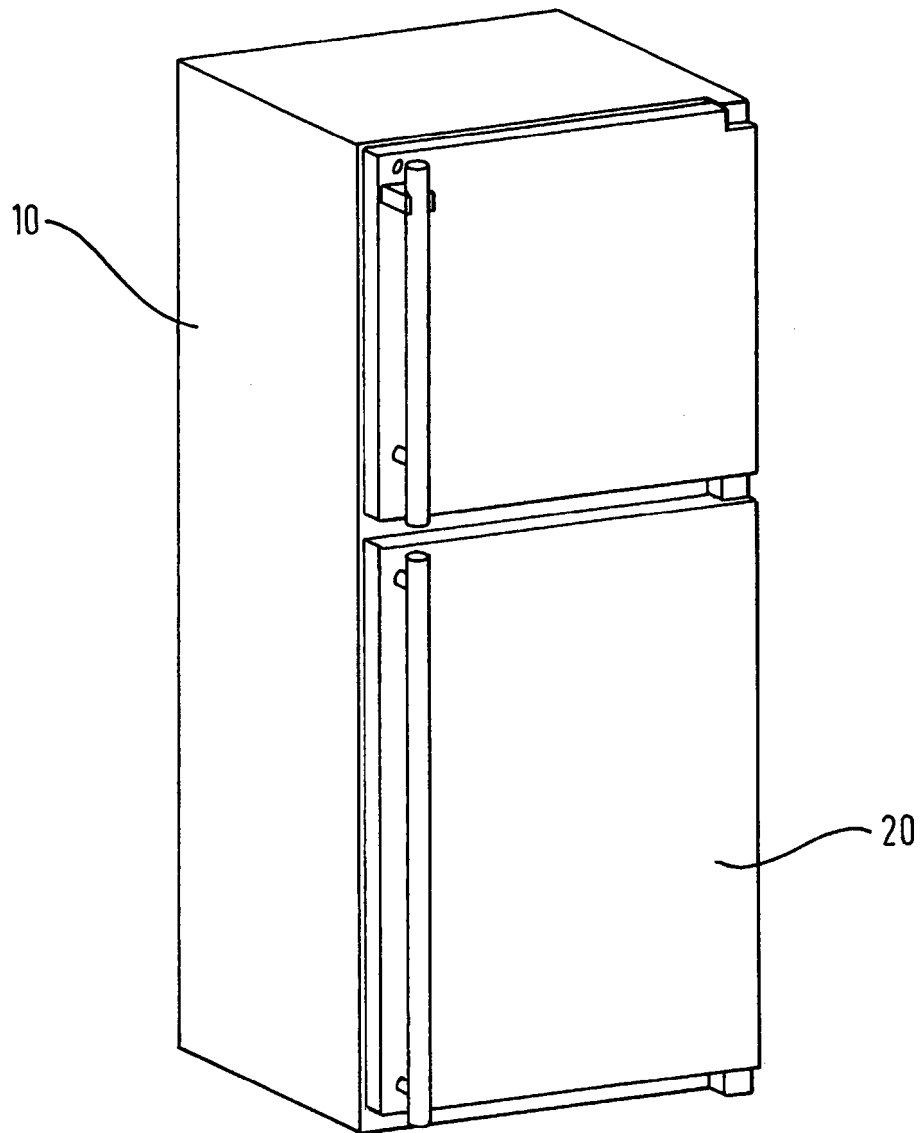


Fig. 2

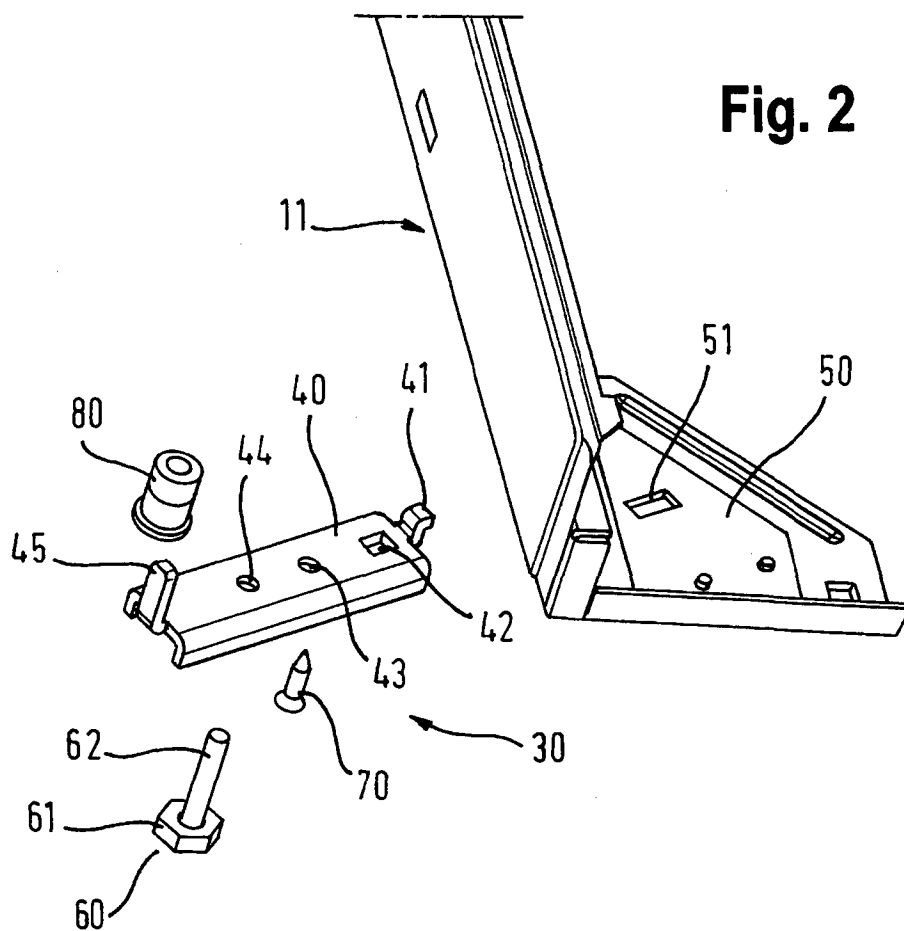


Fig. 3

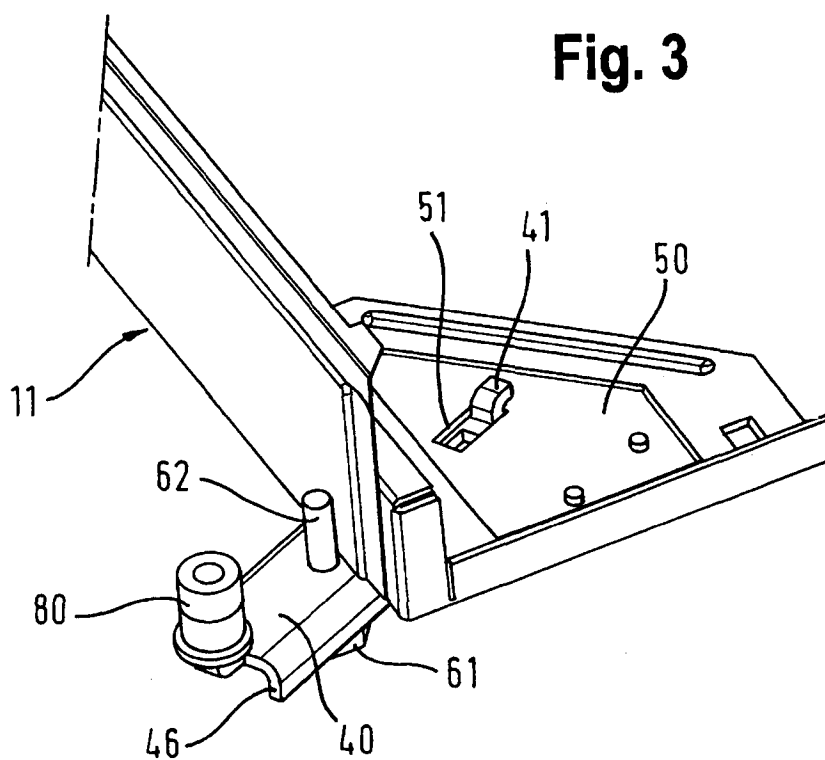


Fig. 4

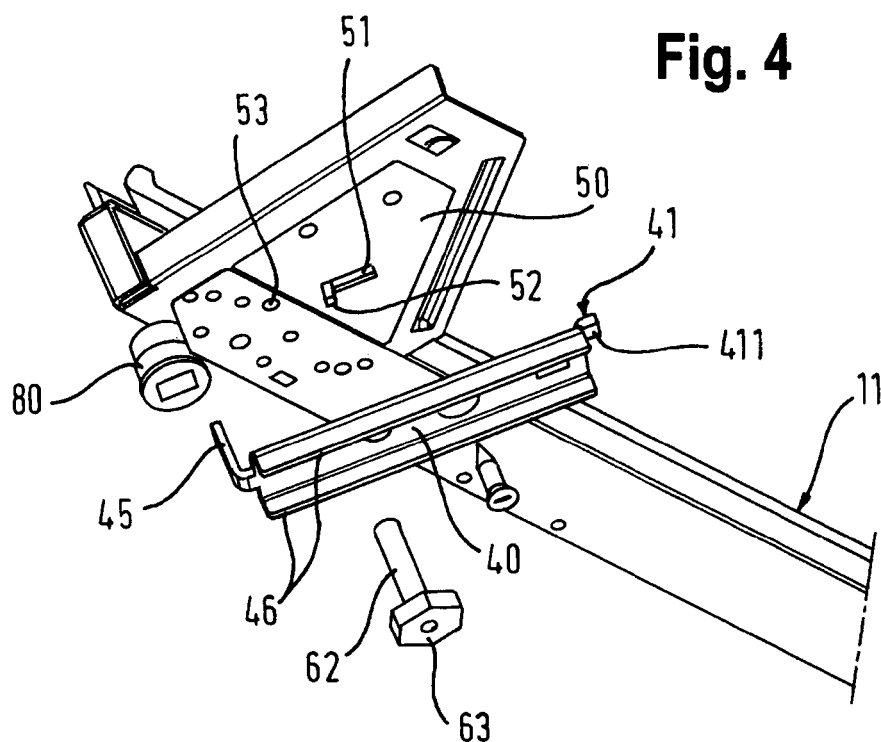


Fig. 5

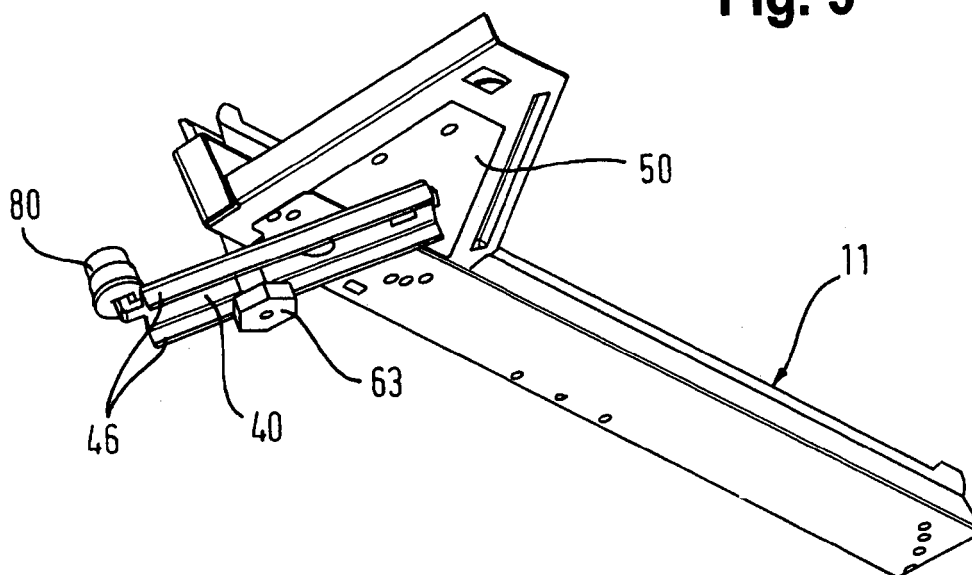


Fig. 6

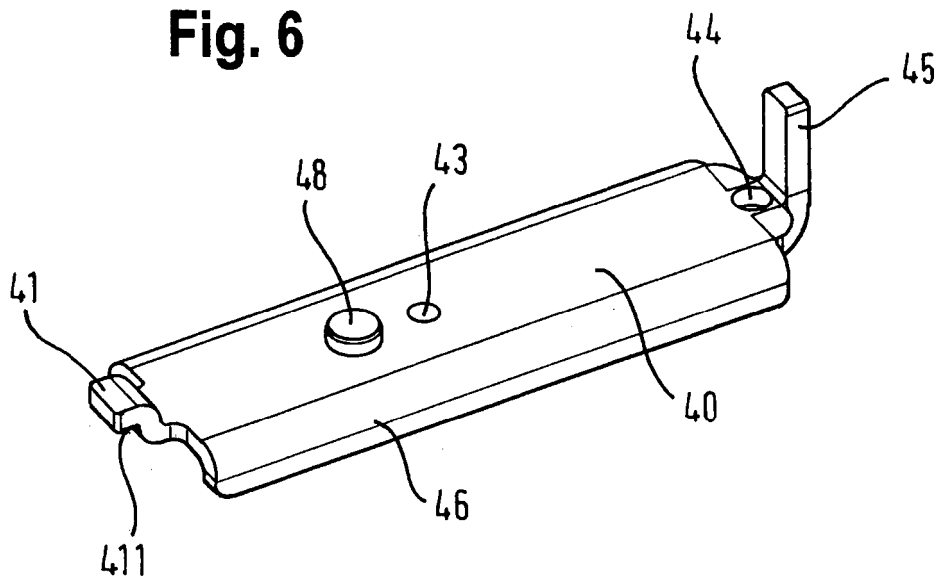


Fig. 7

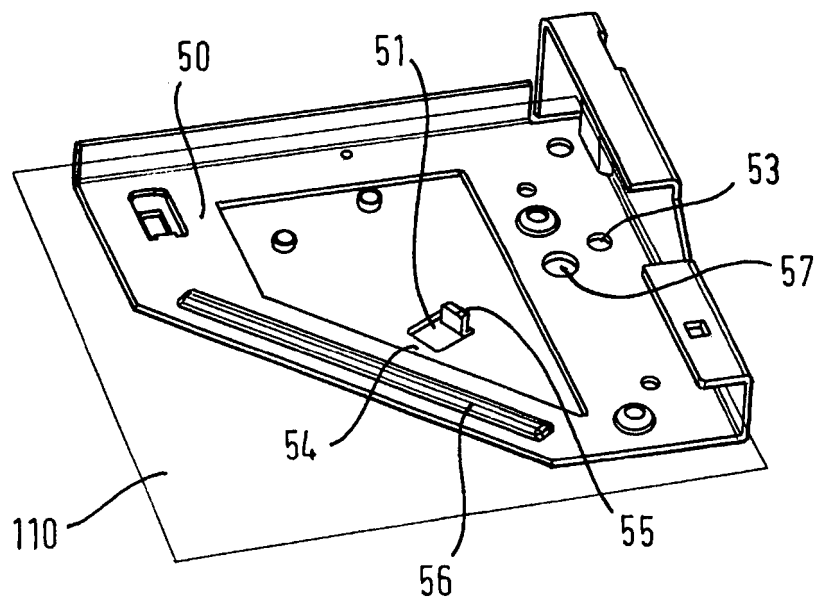


Fig. 8

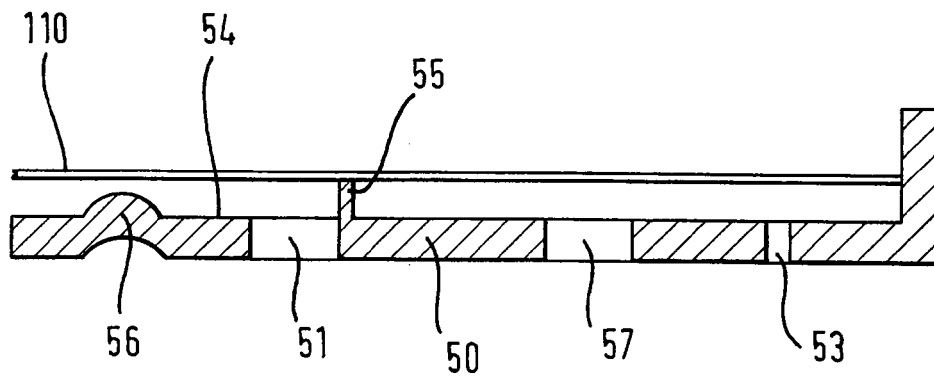


Fig. 9

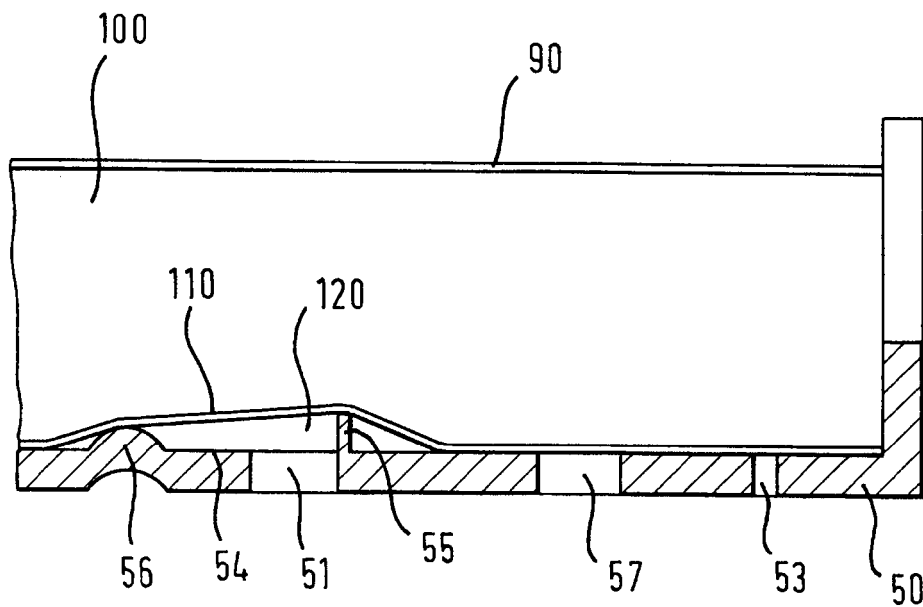


Fig. 10

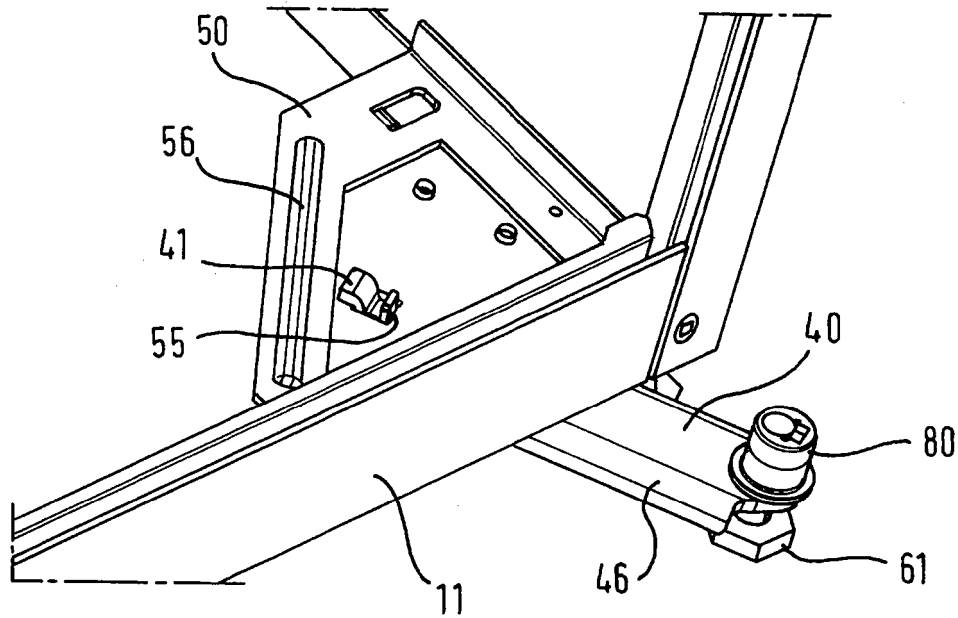


Fig.11

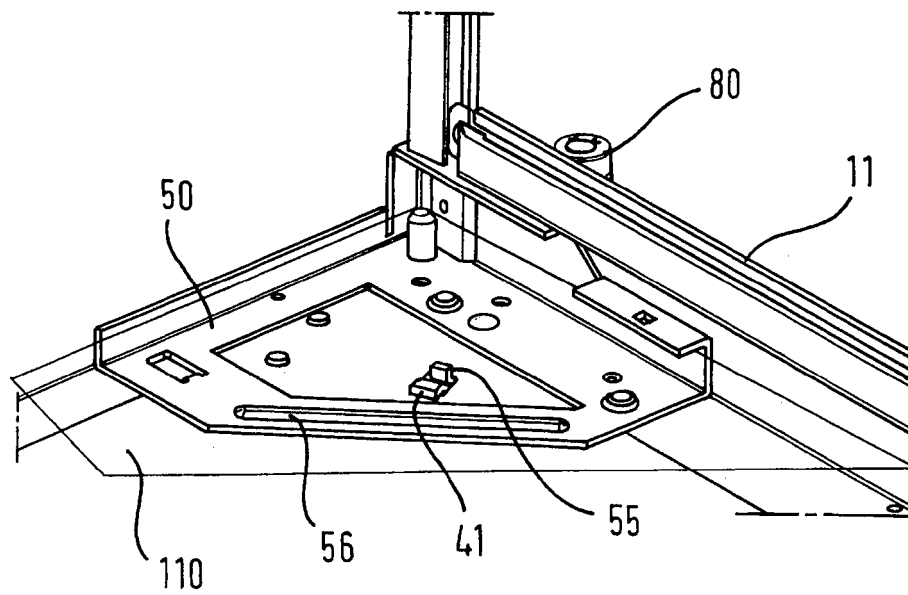


Fig. 12

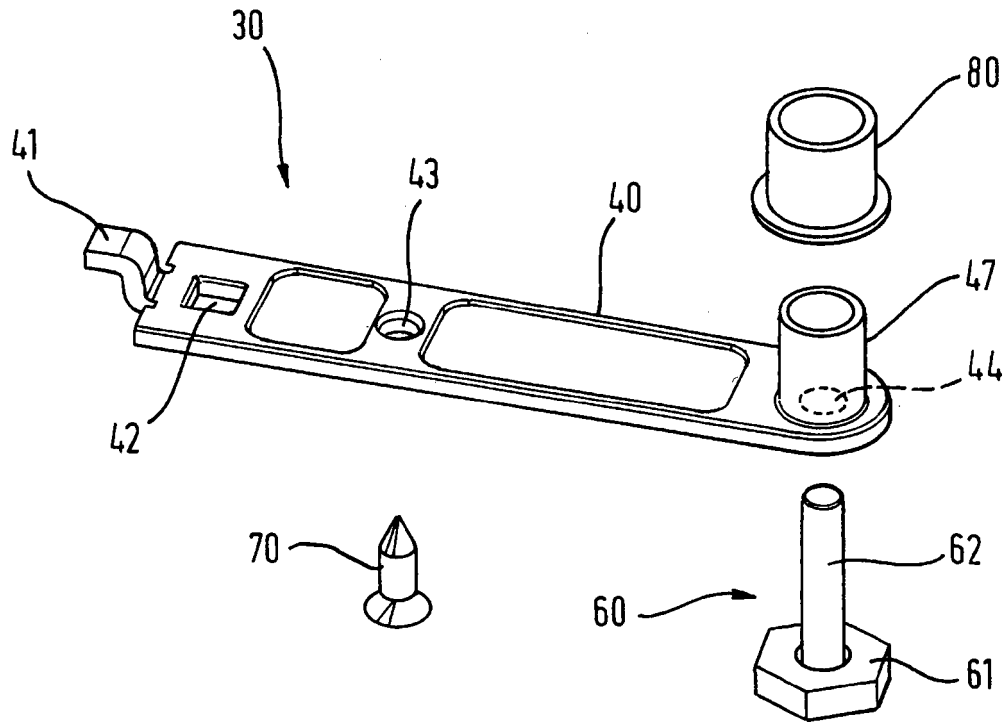
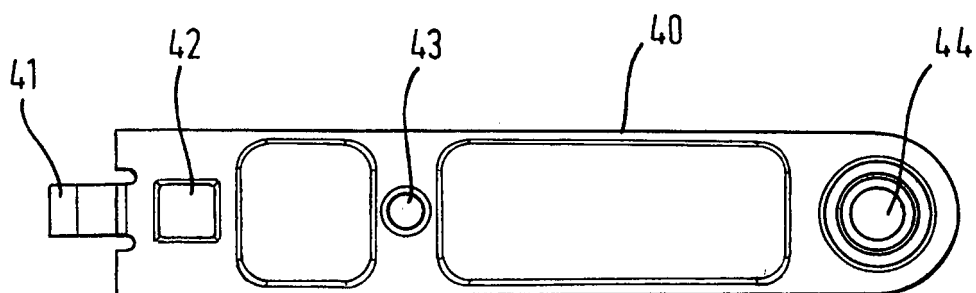


Fig.13



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1506342 A2 [0002]
- DE 19825979 A1 [0003]
- US 6070300 A [0004]
- EP 0927804 A1 [0005]