



Europäisches Patentamt
European Patent Office
Office européen des brevets



Publication number: **0 539 558 A1**

EUROPEAN PATENT APPLICATION
published in accordance with Art.
158(3) EPC

Application number: **92910258.0**

Int. Cl.⁵: **F25D 23/02, A47B 95/02,
E05B 1/00**

Date of filing: **12.05.92**

International application number:
PCT/ES92/00037

International publication number:
WO 92/20981 (26.11.92 92/29)

Priority: **13.05.91 ES 9101457**

Applicant: **BS ELECTRODOMESTICOS, S.A.**
Aparto 68
E-31080 Pamplona(ES)

Date of publication of application:
05.05.93 Bulletin 93/18

Inventor: **GARCIA SANTAMARIA, Salvador**
Bartolomé de Carranza, 18
E-31008 Pamplona(ES)

Designated Contracting States:
**AT BE CH DE DK ES FR GB GR IT LI LU MC
NL SE**

Representative: **Ungria Lopez, Javier et al**
Avda. Ramon y Cajal, 78
E-28043 Madrid (ES)

REFRIGERATING APPARATUS.

The refrigerating apparatus is of the type comprising at least one thermoinsulating door, with sunken handles (4) on the left side and on the right side in order to make possible the opening in one direction of rotation or the other. The handle (4) on

the hinged side is sealed by a cap or cover element (14) which prevent the access to the handle. The handles are arranged at the frame (3) of the door (1) in one of the horizontal edges of said frame, thereby defining a front wall portion of the handle.

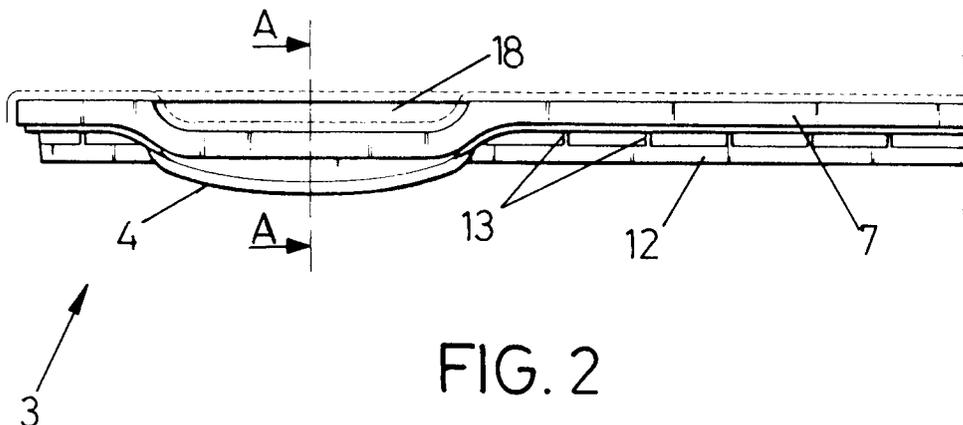


FIG. 2

EP 0 539 558 A1

OBJECT OF THE INVENTION

As is expressed in the title of this specification, the present invention refers to a refrigerator door pull, which has a series of relevant features advantageous over the ones presently used in this type of apparatus.

Refrigerator doors are formed by an outer metal panel and an inner plastic one, there being insulating material between the two. The top and bottom edges have ornamental flashings that are fastened between screws.

The object of the invention consists of these ornamental profiles including hollows to form gripping elements to open the doors where they are installed, since the front of the refrigerator can include different doors, with the particularity that these gripping elements can be used on refrigerators opening to the left or to the right. The cavity or hollow foreseen for the handle and that is to be used remains hidden and covered up by a cover.

DESCRIPTION OF THE INVENTION

In general lines, in order to obtain the aims proposed by the above section, the refrigerator door pull is determined by a cavity made in each one of the end areas of the ornamental profile, determining an upward wall for access and gripping of the user's fingers. Upon these cavities existing in both ends the door can be mounted to open to the left or to the right, as we have indicated above.

The ornamental profile and acting as a pull has in the area of the cavities a "U"-shaped section of unequal branches and whose ends are turned inward in order to fit in the edge of the door, the former also being fastened with screws.

These ornamental profiles can be placed on the top edge of a door and on the bottom of the one placed on top, effecting the opening upon reversing the position of one's fingers, respectively. The pulls can also be mounted in a parallel position if desired, in other words, placed on the top edges, or on the bottom ones, as applicable.

The covers that close the cavity of the pull that is not to be used because the door opens on the opposite side to where the cavity is located, fits in counterforms established on the ornamental profile in order to remain totally secured. This cover also includes some teeth orthogonal to the rear wing thereof, to lock behind the overturned portion of the branches of the "U" shaped cross section of the ornamental profile.

With this arrangement, the top edge of the ornamental profile, or more specifically the front vertical wing or flange of the same, interrupts its horizontal course to deflect parallel and shapes the

opening that permits insertion of one's fingers, thus continuing until the cavity of the other side is reached, sealing off the cover.

In order to provide a better understanding of the features of the invention and forming an integral part of this specification, some sheets of drawings are attached in whose figures with an illustrative and non-restrictive manner the following has been represented:

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1.- It is a raised view of a refrigerator that includes two doors provided with pulls in accordance with the invention.

Figure 2.- It is a partial raised view of the ornamental profile that fits in the top edge of the bottom door of the refrigerator of figure 1 and that includes the pull for opening.

Figure 3.- It is a bottom plan view of what is shown in figure 2.

Figure 4.- It is a top plan view of what is shown in figure 2.

Figure 5.- It is a raised rear view of figure 2 and which also corresponds to the plan view of figure 4.

Figure 6.- It is a section along the cutting line A-A of figure 2.

Figure 7.- It is a section along the cutting line C-C of figure 5.

Figure 8.- It is a section along the cutting line D-D of figure 5.

Figure 9.- It is a partial section along cutting line F-F of figure 3.

Figure 10.- It is a section along cutting line B-B of figure 4.

Figure 11.- It is a partial section along cutting line E-E of figure 3.

Figure 12.- It is a raised view of the cover insertable in the cavity of the ornamental profile that is not to be used as a pull itself.

Figure 13.- It is a bottom plan view of what has been shown in figure 12.

Figure 14.- It is a top plan view of what has been shown in figure 12.

Figure 15.- It is a raised rear view of the same cover.

Figure 16.- It is a section along cutting line G-G of figure 13.

Figure 17.- It is a cross section of the ornamental profile with the cover mounted on the recess that is not to be made unusable.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Making reference to the numbering used in the figures and more specifically in connection with

figures 1 to 11, we can see the structure that the ornamental profile has which is to be secured in the top or bottom edge of the doors 1 and 2 of the refrigerator shown in figure 1 as an example. Each one of these ornamental profiles has been referred to in general with no. 3 and they have a hollow or cavity (4) that permits access of the user's fingers in the door opening operation, pulling the wall upward (5) coincident with the front branch of the "U"-shaped section that the profile (3) has in the area of the cavity (4) as is clearly seen in figure 6 which is a section along cutting line A-A of figure 2. The rear branch of this "U"-shaped section has been referred to as no. 6, both having a respective extension (7) and (8) that turns inward to facilitate coupling to the door (1) or (2.)

The front flange (7) covers the edge of the front plate of the refrigerator door, in the area of the cavity (4), this flange continuing all along the profile, as is clearly seen in figure 2.

In the top view of the ornamental profile (3), just as is shown in figure 4, we can see the cavity (4) and the upward wall (5), materialized by the front branch of the "U"-shaped section of the ornamental profile (3) that defines the gripping element to act as a "pull" itself. We can also see as number (9) one of the end holes for anchoring by means of top screws the ornamental profile (3) to the rest of the door. The metal panel that defines the visible surface of doors (1) or (2), remains pressed between the downward flange (7) and a close wall (10) parallel to the reinforcement ribs (11) (see figures 7 to 9.)

In the rear part of the ornamental profile (3) in a downward position close to the overturned flange (8) of the "U"-shaped section of branch (6) of the cavity (4), there is another downward wall (12.) Between walls (10) and (12) there are some transversal ribs (13) that are equidistant along the profile and remain eliminated in the areas of the cavities (4.)

Now making reference to figures 12 to 17, we can see the structure of the cover generally referred to as number (14) and which as we have said before is to close the cavity (4) that is not to be used as a pull itself. In figure 1 we can see this cover (14) placed on the right part of the refrigerator and on the top door (2) as well as on the bottom door (1), since these doors open to the right.

The cover (14) covers the top and side of the cavity (4), thus it has a top horizontal wall (15) and a main wall (16) that descends from its front edge and that is finished in an arched manner on its ends (17) to remain located coplanar to the flange (7) of the ornamental profile (3) in the area defined by the front notch (18) in figure 2. This notch (18) and what we have called the descending wall (16)

have the same geometry thus they complement each other.

Parallel to the descending wall (16), the cover (14) also has a rear wing (19), thus determining a reversed "U"-shaped cross section in the assembly position of the cover, just as is shown in figure 17.

The cover (14) is mounted in a sliding manner vertically upon having guide means defined by the triangular vertical projections that are introduced in the cavity (4), backing to its inner contour. The sideflaps (22) have this same task for side immobilization.

There are also some means for locking the cover (14), defined by the teeth (23) which are orthogonal to the rear wing (19), which are located behind the edge of the overturned flange (8) of the ornamental profile (3), precisely in the area where the latter has some notches (24) (see figure 5.)

When the cover (14) is in the assembled position, as is shown in figure 17, it is impossible to have access to the inner part of the ascending wall (5), in other words to the inside of the cavity (4) by the "U"-shaped cross section of branch (16) of the cover (14) preventing it.

In the event that the pulls of doors (1) and (2) coincide, as is in the example shown in figure 1, access to the cavity (4) is facilitated since the notch (18) of entry is doubled, for opening the top door (2) as well as the bottom door (1.)

Claims

1. Refrigerator, especially a home refrigerator with at least one thermal insulated door that has a handle hollowed to the right and another to the left for opening and closing the door, that is characterized because the hollowed handle (4) placed on the hinged side of the door (1) has a covering (14) that prevents access to the hollowed handle (4.)
2. Refrigerator, especially a home refrigerator with at least one thermal insulated door that has a handled hollowed to the right and another to the left for opening and closing the door, which is characterized because the handles (4) are placed in one part, surrounding the frame (3) of one of the horizontal edges of the door (1.)
3. Refrigerator, according to either claim 1 or 2, which is characterized because the hollowed handle (4) placed in the frame of the hinged side of the door, is provided with a cover (14) that prevents access to the hollowed handle (4.)

4. Refrigerator, according to any of claims 1 to 3, which is characterized because the handles (4) include a portion of wall that serves as a grip (5) and that covers the hollowed handle (4) partially in the front. 5
5. Refrigerator, according to claims 1, 3 or 4, which is characterized because the cover (14) located in the hollowed handle (4) ends flush – ing with this handle (4.) 10
6. Refrigerator, according to one of the claims 1, 3, 4 or 5, that is characterized because the cover (14) is joined, being separable, to the handle (4.) 15
7. Refrigerator, according to one of claims 1 or 2 that is characterized because on neighboring superimposed doors (1) (2), the hollowed handles (4) are arranged opposite each other with vertical access, in such a way that the opening access to the grip portion (5) of the hollowed handle (4) increased (4.) 20

25

30

35

40

45

50

55

4

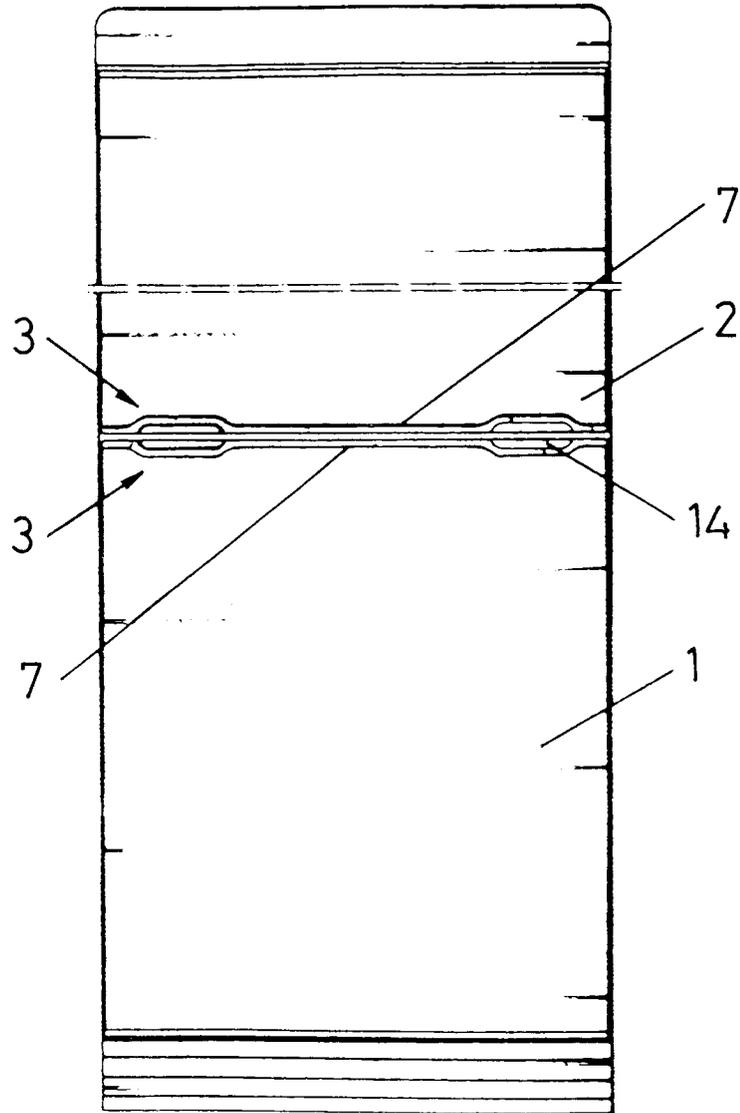


FIG. 1

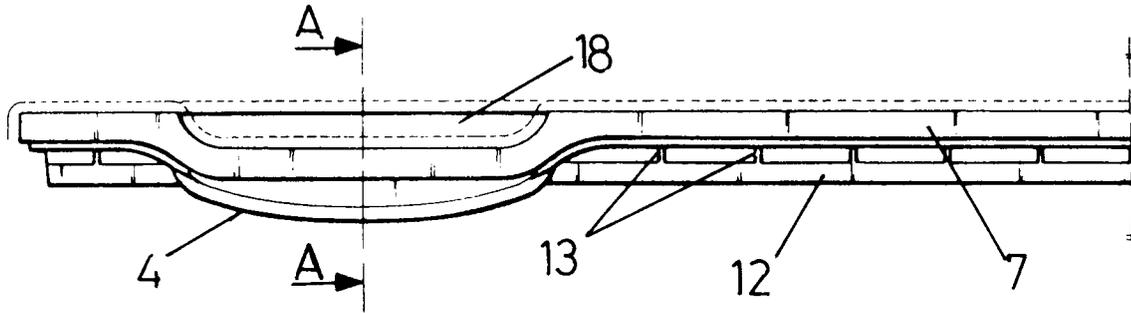


FIG. 2

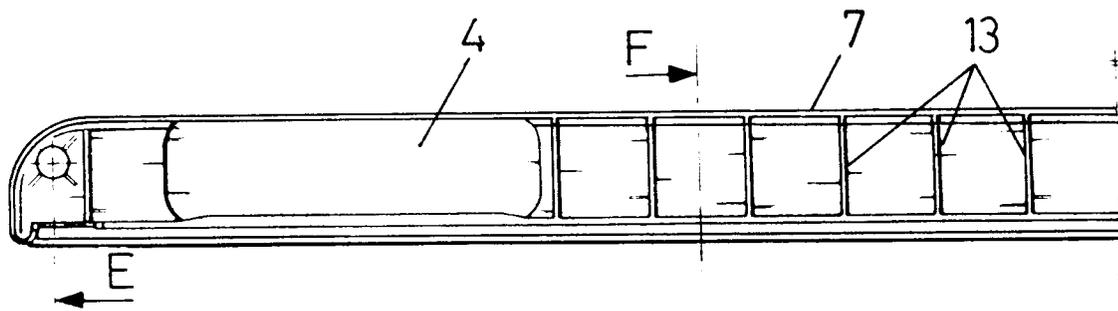


FIG. 3

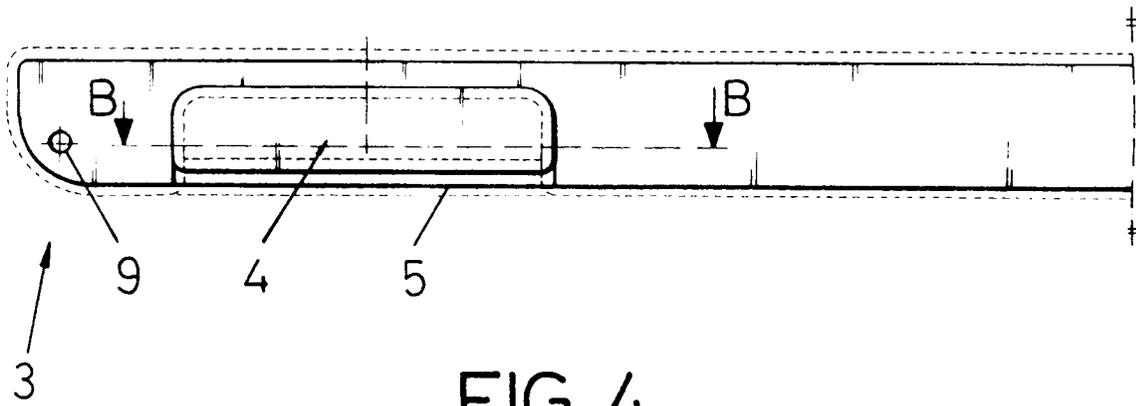


FIG. 4

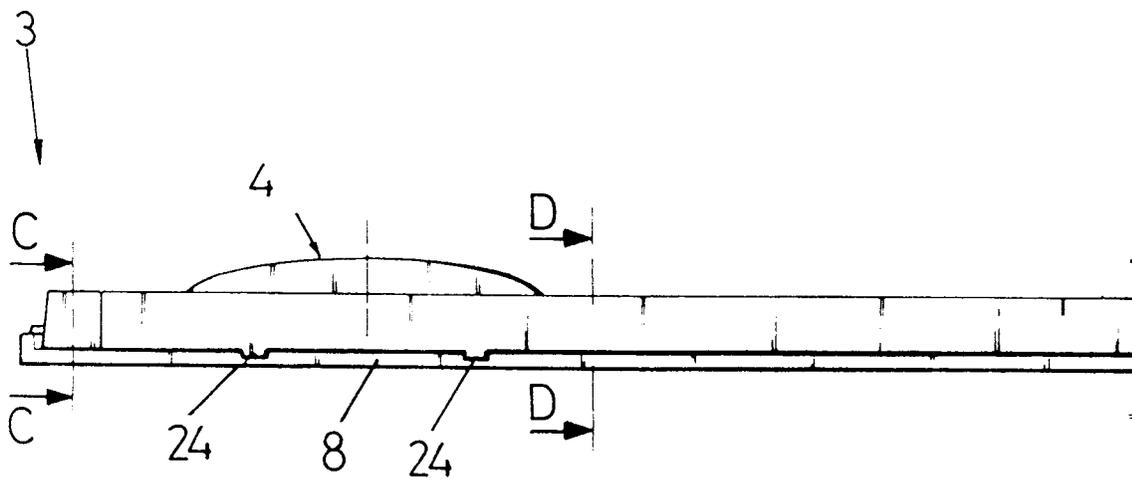


FIG. 5

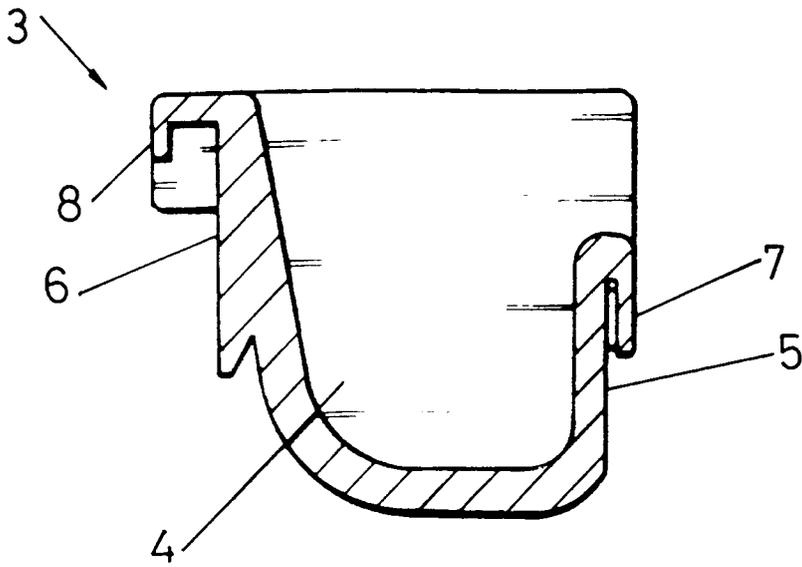


FIG. 6
A-A

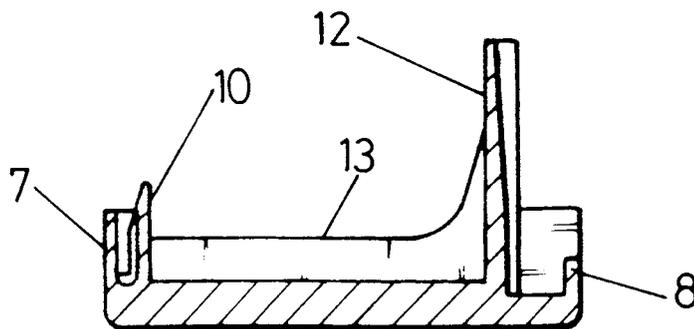


FIG. 7
C-C

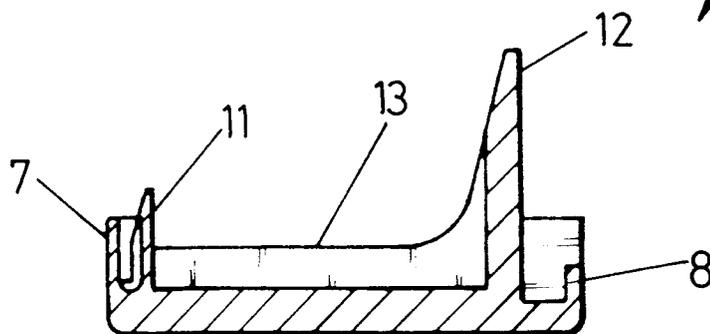
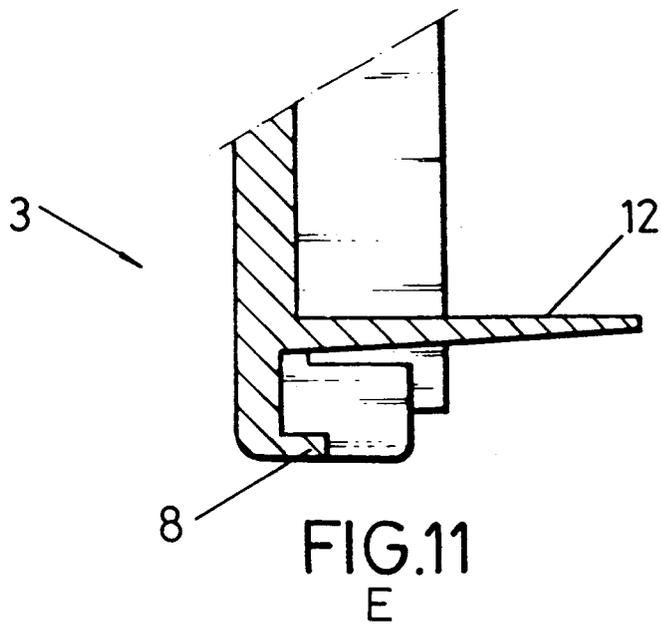
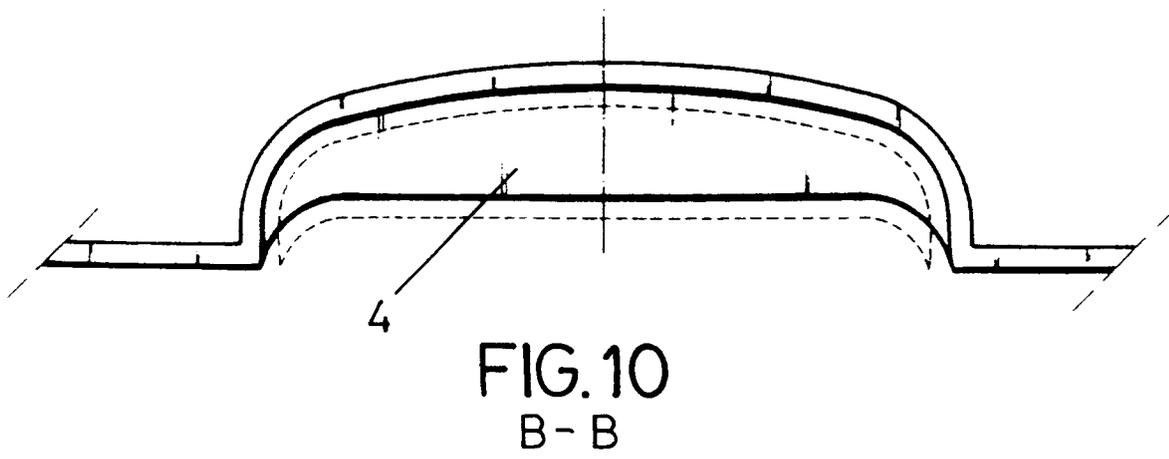
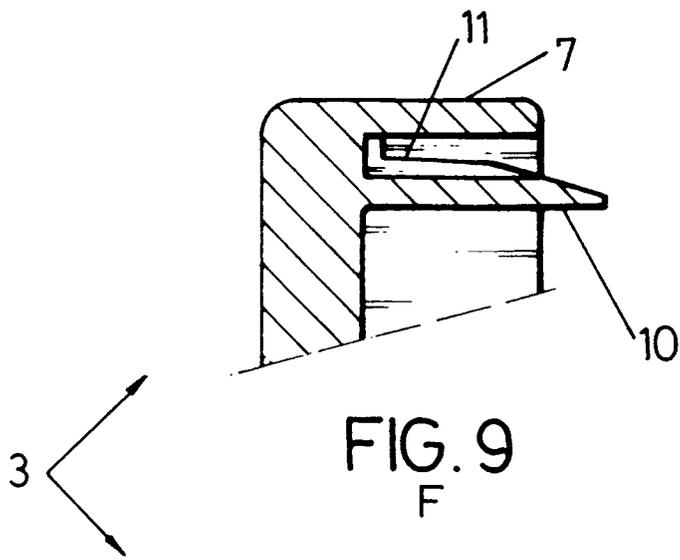


FIG. 8
D-D



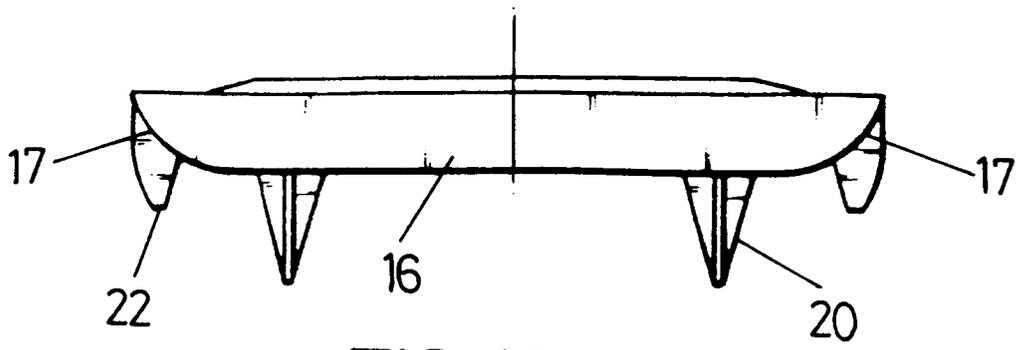


FIG. 12

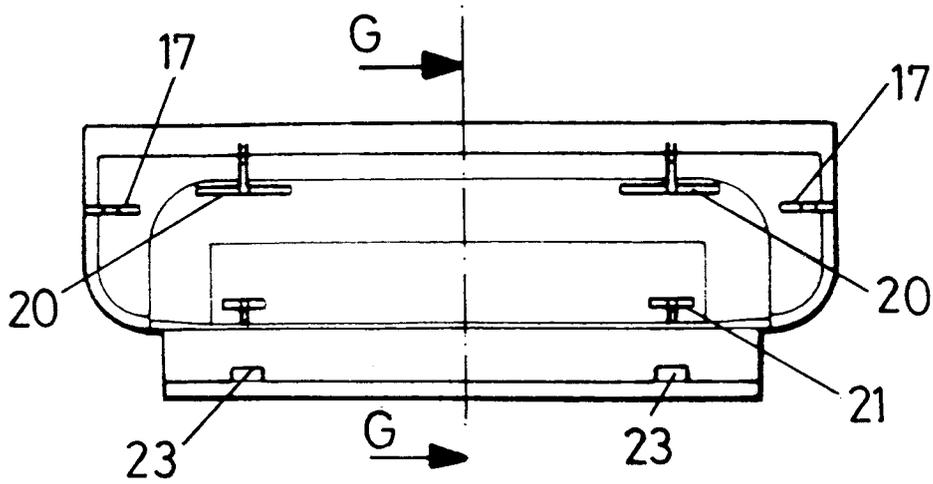
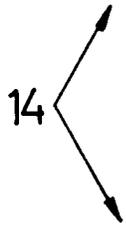


FIG. 13

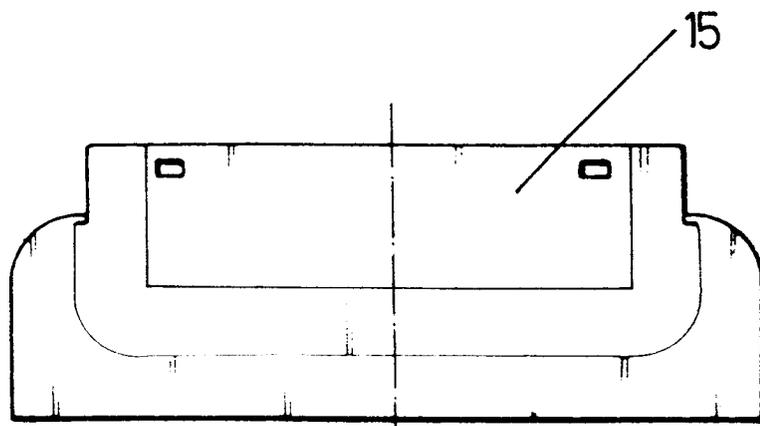


FIG. 14

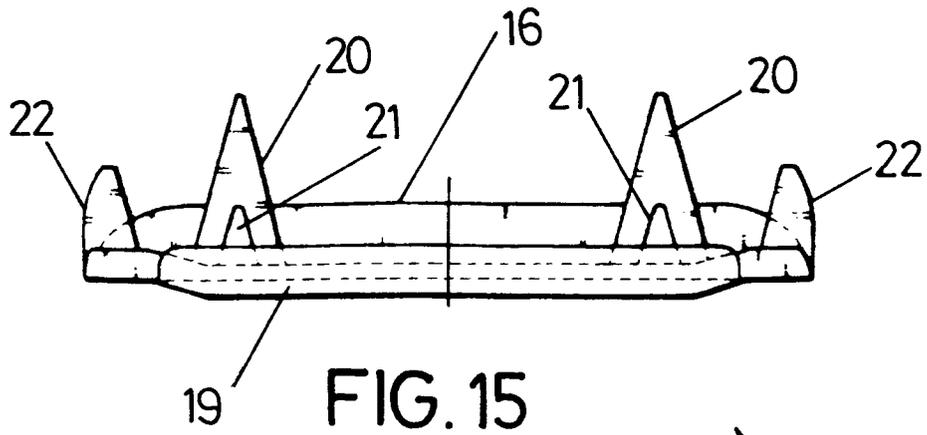


FIG. 15

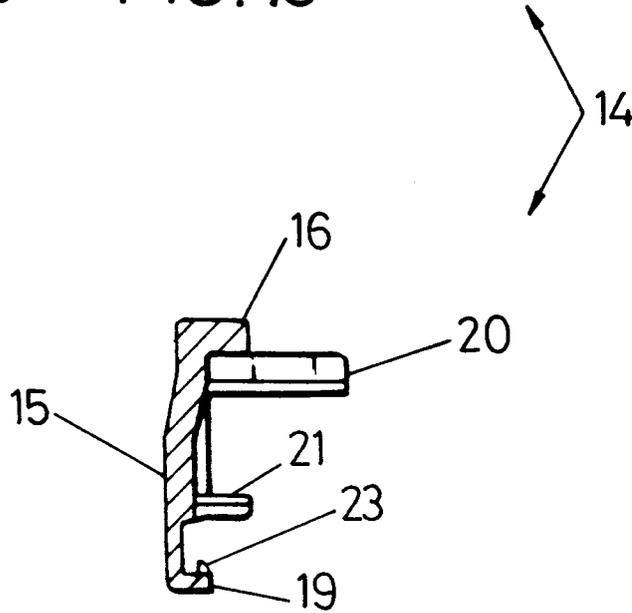


FIG. 16
G-G

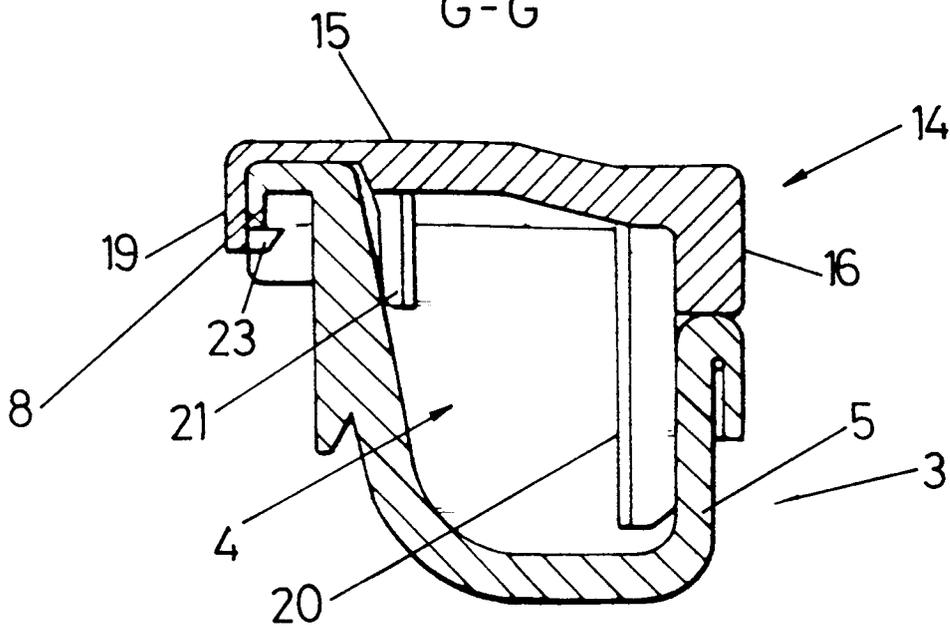


FIG. 17

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 92/00037

A. CLASSIFICATION OF SUBJECT MATTER Int.Cl. 5 F 25 D 23/02 A 47 B 95/02 E 05 B 1/00 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) Int.Cl. 5 F 25 D E 06 B A 47 B E 05 B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A 4486981 (BILLEN) 11 December 1984 see column 1, line 49 - line 68; figures 1-4	1
A	CH,A, 416001 (FORSTER) 13 January 1967	
A	DE,A, 2262640 (LICENTIA) 27 June 1974	
A	US,A,4662114 (SUTTLES) 5 May 1987	
A	US,A,3662492 (BRADLEY) 16 May 1972	
A	US,A,3634971 (KESLING) 18 January 1972	
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 17 August 1992 (17.08.92)		Date of mailing of the international search report 7 October 1992 (07.10.92)
Name and mailing address of the ISA/ European Patent Office Facsimile No.		Authorized officer Telephone No.