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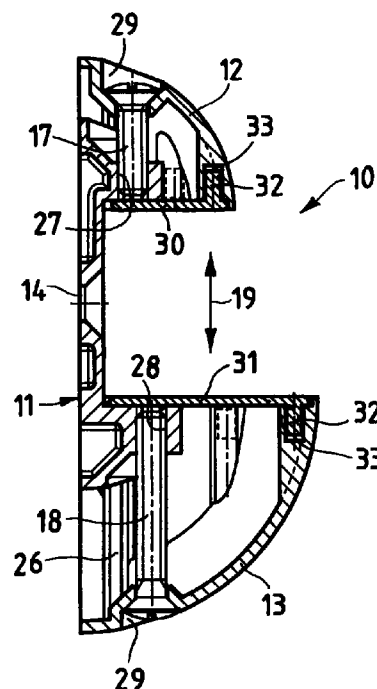
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(54) **Double-adjustment shelf carrier means**

(57) A shelf carrier means comprises a suitable wall-fastening base element (11) which can be submitted to horizontal adjustment movements in accordance with the directions shown by arrow (15) and oscillation adjustment movements around its fastening point according to the directions shown by arrow (16). On said base element mutually opposite, mutually spaced apart clamp elements (12, 13) are provided for clamping a shelf (20, 21). Said clamp elements can be independently adjusted in vertical direction according to the directions shown by arrow (19), hence with possibility of being moved towards, or apart from, each other.

Fig.4



EP 0 726 044 A1

Description

The present invention relates to double-adjustment carrier means for shelves, i.e., capable of being adjusted in its horizontal, as well as vertical, position, in order to install the shelf in a properly horizontally levelled position and at the desired level.

For the sake of simplicity, said carrier means for shelves is referred to in the following as to "shelf carrier means".

Several types of shelf carrier means are known, which are constituted by supporting means (arms, brackets or other types of supporting means) suitable for being fastened onto a wall -- and on which a carrier plane (i.e., the shelf) is mounted and fastened.

In general, one pair of said shelf carrier means are fastened onto a wall, with a certain distance between them, and then on them the shelf is installed and fastened in its turn.

The greatest difficulty which one meets when installing said shelf carrier means consists in mutually positioning both shelf carrier means in the proper way, in such a way that the shelf results to be exactly level led in horizontal direction, and at the desired level from floor, also relatively to other previously existing interior decoration elements.

The purpose of the present invention is of solving the above said drawback by providing a shelf carrier means with several possibilities of adjustment, such that the supported shelf can be easily installed in a perfectly horizontal position, and, possibly, also at the desired level, and immediately fastened in its so adjusted position even if the position of each of both mutually spaced apart shelf carrier means fastened onto a wall is not the exactly correct position which is necessary for that purpose.

The above purpose is achieved by a shelf carrier means displaying the features shown in the appended claims.

The structural and functional characteristics of the instant invention and the advantages it offers over the prior art will be clear from a study into the following disclosure, referred to the accompanying drawings, which display an exemplifying shelf carrier means according to the present invention.

In the drawings:

- Figure 1 shows a front elevation view of the shelf carrier means according to the instant invention;
- Figure 2 shows a side elevation view;
- Figure 3 shows a plan view;
- Figure 4 shows a sectional view illustrating the shelf carrier means according to Figures 1-3 with its clamp elements being in their maximal opening position;
- Figure 5 shows a similar sectional view to Figure 4, illustrating the shelf carrier means with its clamp elements being in their maximal closure position.

-- Figure 6 shows a front elevation view illustrating one pair of shelf carrier means according to the instant invention from which an object-supporting shelf extends;

-- Figure 7 shows a front elevation view illustrating one single shelf carrier means according to the instant invention carrying an object-supporting shelf;

-- Figure 8 shows a front elevation view of the base element of the shelf carrier means according to the instant invention;

-- Figure 9 shows a bottom plan view of the base element of Figure 8;

-- Figure 10 shows a top plan view of the base element of Figure 8;

-- Figure 11 shows a side elevation view of the base element of Figure 8;

-- Figure 12 shows a side elevation view of the rear side of the base element of Figure 8;

-- Figure 13 shows a sectional view taken along the section plane XIII-XIII of Figure 12;

-- Figure 14 shows a sectional view taken along the section plane XIV-XIV of Figure 8;

-- Figure 15 shows a sectional view taken along the section plane XV-XV of Figure 8;

-- Figure 16 shows a sectional view taken along the section plane XVI-XVI of Figure 8;

-- Figure 17 shows a front elevation view illustrating one only of both clamp elements of the shelf carrier means according to the instant invention with the other clamp element being structurally the same, but with different dimensions;

-- Figure 18 shows a side elevation view of the clamp of Figure 17;

-- Figure 19 shows a top plan view of the clamp of Figure 17, from which the closing lid was removed;

-- Figure 20 shows an elevation view of the rear side of the clamp of Figure 17;

-- Figure 21 shows a sectional view taken along the section plane XXI-XXI of Figure 19; and

-- Figure 22 shows a sectional view taken along the section plane XXII-XXII of Figure 19.

Referring first to Figures 1-5 of the drawings, the shelf carrier means according to the present invention is generally indicated with the reference numeral (10) and is structurally formed by three mutually connected elements: a base element (11), an upper clamp element (12) and a lower clamp element (13).

As one will clearly see from the drawings, the clamp elements (12, 13) are partially spherical (i.e., they have the shape of 1/4 of a hollow sphere) and preferably, although not necessarily, the upper clamp element (12) is smaller than the lower clamp element (13).

The base element (11) is provided with a central slot (14) which enables it to be fastened onto a wall by means of a screw or an expansion fastener (not displayed in the figures), therefore with possibility of performing adjustment movements in horizontal direction,

according to the directions of arrow (15), and oscillation movements in the directions of arrow (16) (Figure 1).

The clamp elements (12, 13) are mounted on the base element (11) by means of respective screws (17, 18) (Figures 4, 5) which allow said clamp elements to be independently adjusted in the vertical direction, according to the directions of arrow (19) (Figures 1, 2).

In this way, a supporting plane (shelf) (20) positioned between the clamp elements (12, 13) of two shelf carrier means (10) fastened onto a support wall at a certain distance from each other, as shown in Figure 6, can be easily adjusted in a perfectly horizontal position by independently adjusting the position of the clamp elements (12, 13) of both shelf carrier means (10), precluding from whether the base elements of said pairs of clamp elements (12, 13) are correctly positioned relatively to each other, or not.

Of course, the horizontal adjustment (i.e., levelling) of a shelf (21) installed on one shelf carrier means (10) only (Figure 7) will be carried out by adjusting the position of the base element (11), and the vertical adjustment, or alignment with other interior decoration pieces, can be carried out by acting on clamp element (12, 13).

The structure of the base element (11) is displayed in detail in Figures 9-16.

More precisely, said base element (11) comprises a plate (22) from whose top and bottom sides two pairs of anchoring teeth (23, 24) extend and define, together with the same plate (22), guides (25) for the clamp elements (12, 13), which get coupled with them by means of wings (26) they are purposely provided with (Figures 19-21).

Through the respective centre of each of teeth (23, 24) respective threaded bores (27, 28) are provided which engage screws (17, 18) which are used in order to perform the vertical adjustment of the respective positions of clamp elements (12, 13) according to arrow (19).

As one will clearly see from Figures 4, 5 and 19-22 of the drawings, such screws (17, 18) extend through the bores (29) provided through the clamp elements (12, 13) and engage said threaded bores (27, 28) provided in the base element (11), thus realizing an operative connection between said three elements, i.e., the base element (11) and the clamp elements (12, 13).

The clamp elements (12, 13) are furthermore provided with respective closing lids (30, 31) constrained by means of pins (32) which are pressure fitted inside bores (33) provided in said clamp elements (12, 13).

The purpose mentioned in the preamble to the disclosure is thus achieved.

Claims

1. Shelf carrier means characterized in that it comprises a suitable base element (11) capable of being fastened onto a support wall with mutually opposite, mutually spaced apart clamp elements (12, 13) being provided on said base element (11)

which can be each independently adjusted in vertical position according to the directions of arrow (19), hence with possibility of being moved towards, or apart from, each other.

2. Shelf carrier means according to claim 1, characterized in that said base element (11) is fastened onto a wall with possibility of being adjusted in its horizontal position according to the directions of arrow (15) and of performing oscillation adjustment movements around its fastening point according to the directions shown by arrow (16), thanks to a slot (14) through which the wall fastening means extends.
3. Shelf carrier means according to claim 1, characterized in that said base element (11) comprises a plate (22) from whose top and bottom sides two pairs of anchoring teeth (23, 24) extend which define, in cooperation with said plate, guides (25) for the clamp elements (12, 13), which clamp elements are engaged within said guides by getting coupled by means of wings (26) they are purposely provided with.
4. Shelf carrier means according to claim 3, characterized in that in the centre of each of said teeth (23, 24) respective threaded bores (27, 28) are provided which are designed to get into engagement with vertical adjustment screws (17, 18) which adjustment screws (17, 18) cause said clamp elements (12, 13) to perform vertical adjustment movements according to arrow (19), with said screws (17, 18) extending through bores (29) provided through said clamp elements (12, 13) to get into engagement with the above said threaded bores (27, 28) provided in the base element (11), thus realizing an operative connection between components (11, 12 and 13).
5. Shelf carrier means according to claim 1, characterized in that said clamp elements (12, 13) are of partially spherical shape.
6. Shelf carrier means according to claim 5, characterized in that said partially spherical clamp elements (12, 13) are hollow and are provided with respective closing lids (30, 31) constrained by means of pins (32) which are pressure fitted inside bores (33) provided in said clamp elements (12, 13).

Fig.1

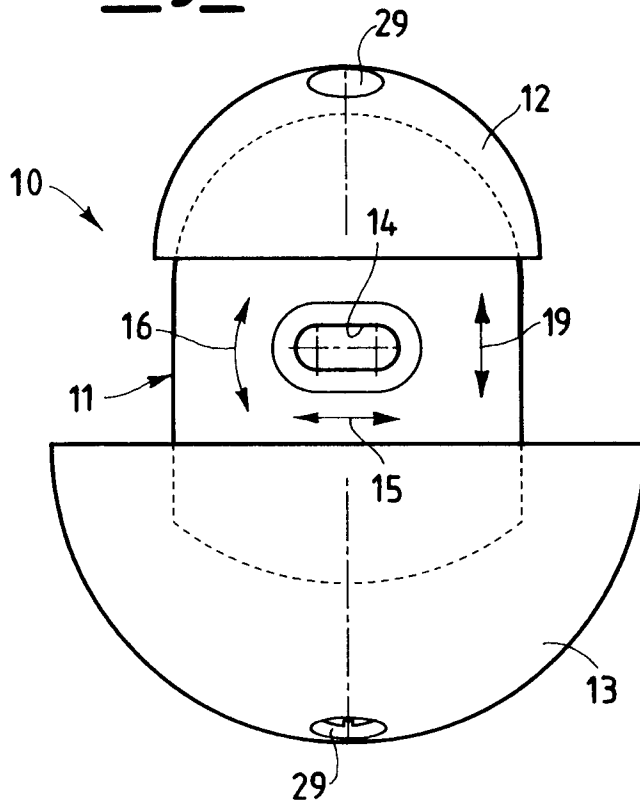


Fig.2

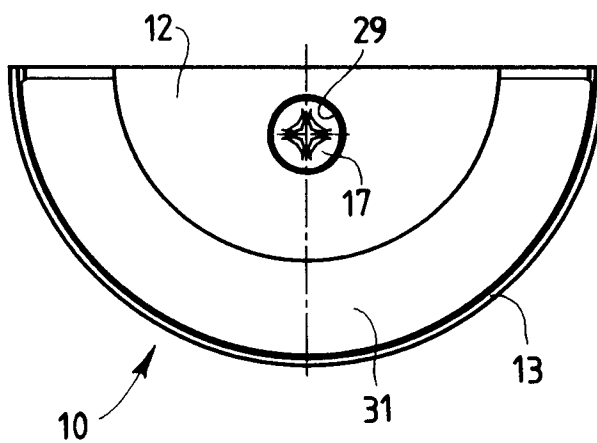
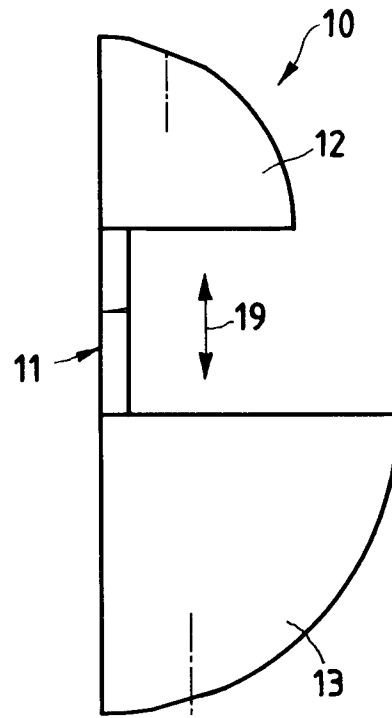


Fig.3

Fig.4

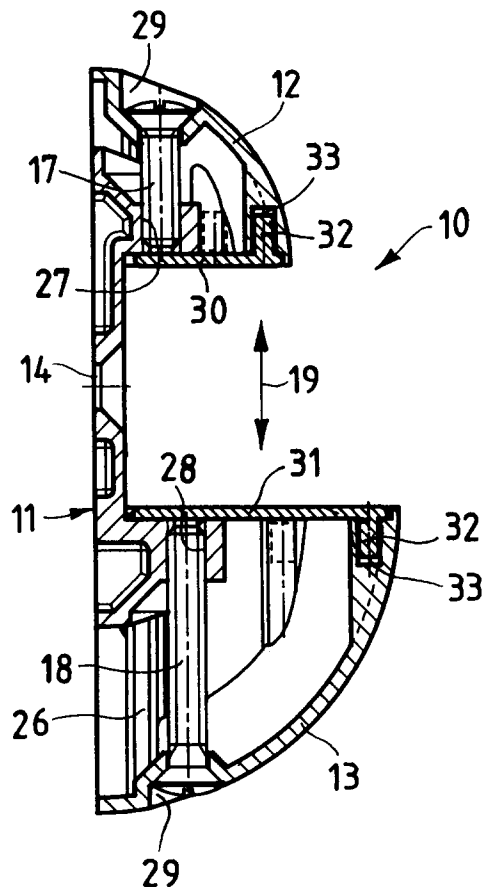


Fig.5

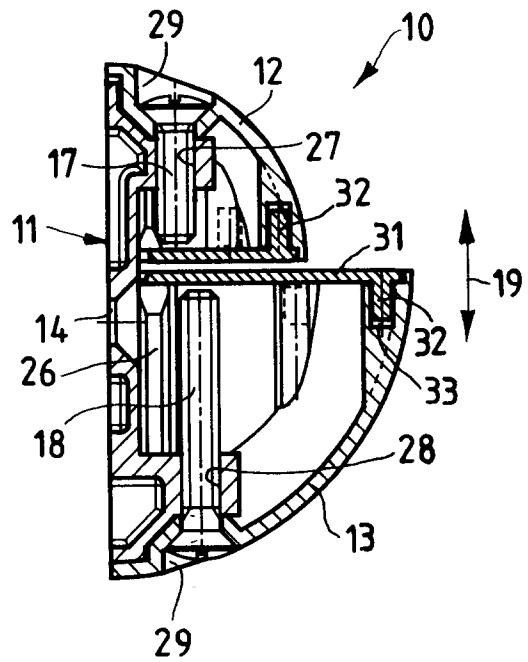


Fig.6

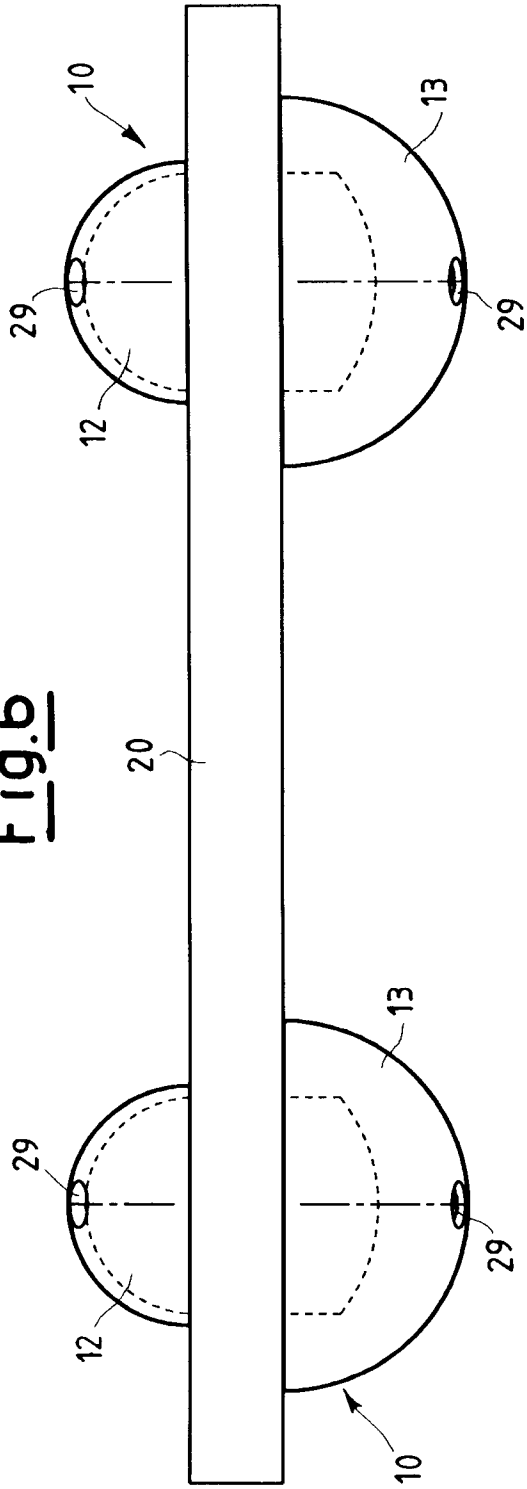


Fig.7

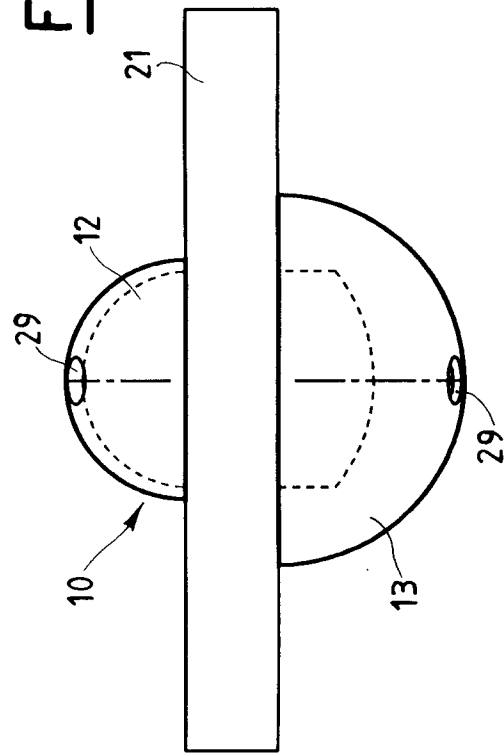


Fig.9

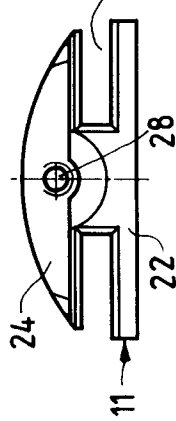


Fig.8

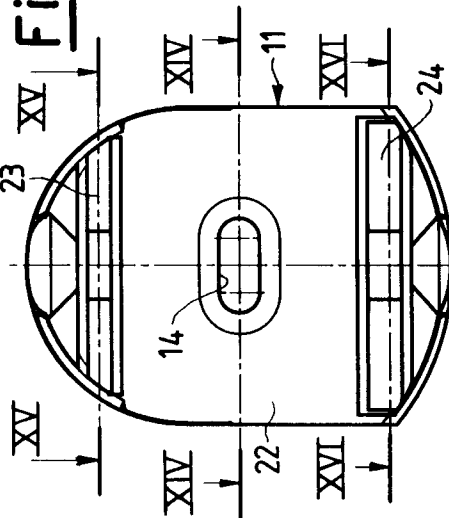


Fig.10

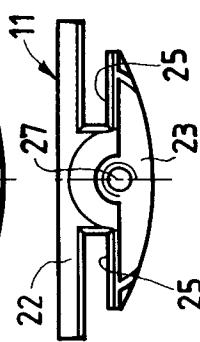


Fig.15



Fig.16



Fig.11

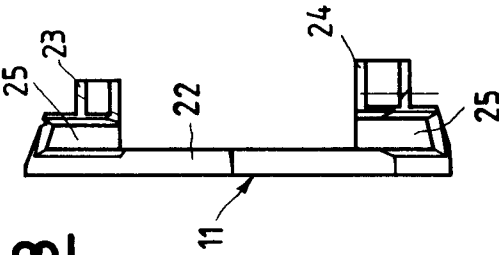


Fig.13

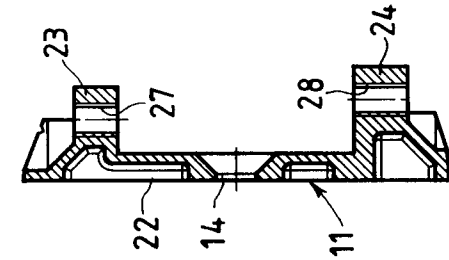


Fig.14

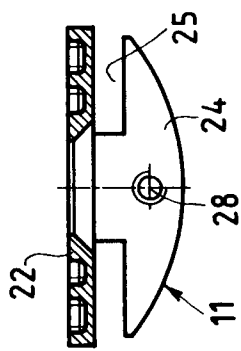
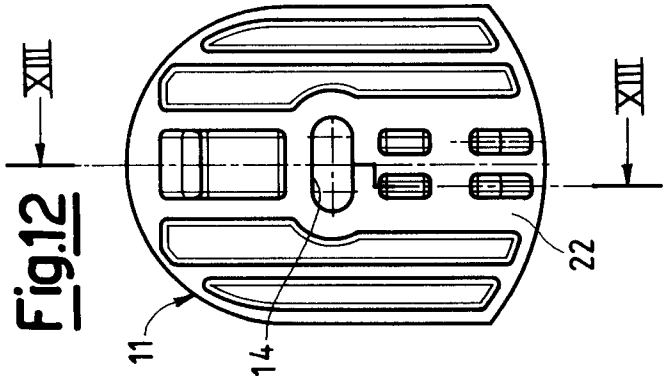
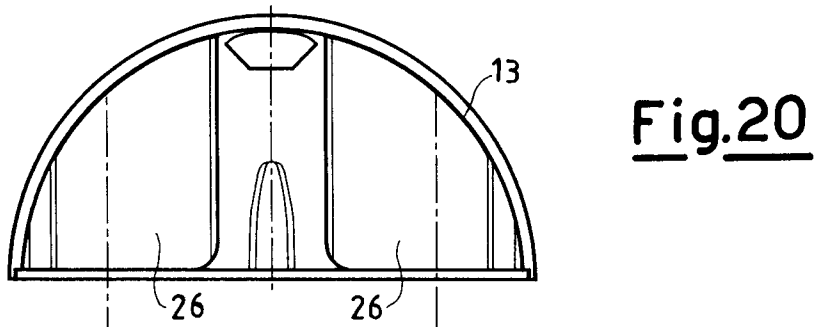
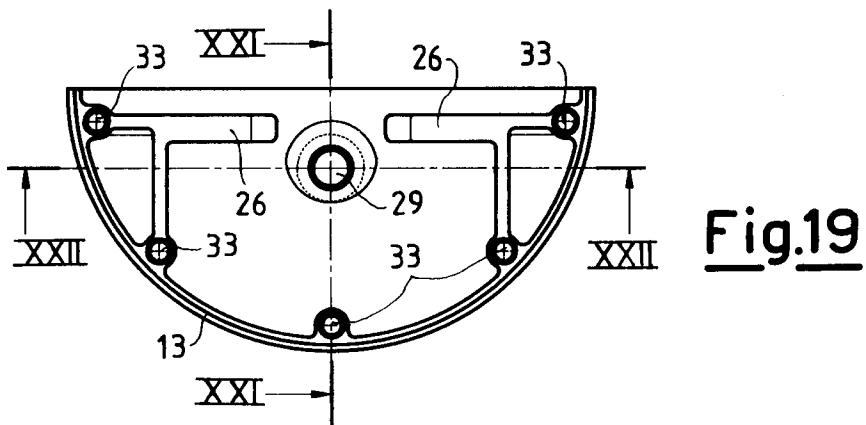
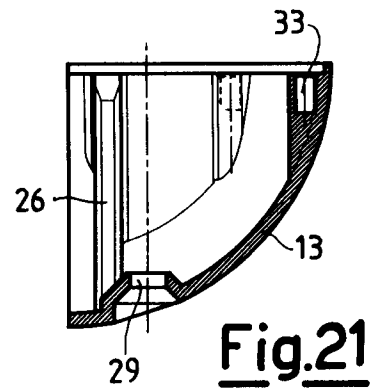
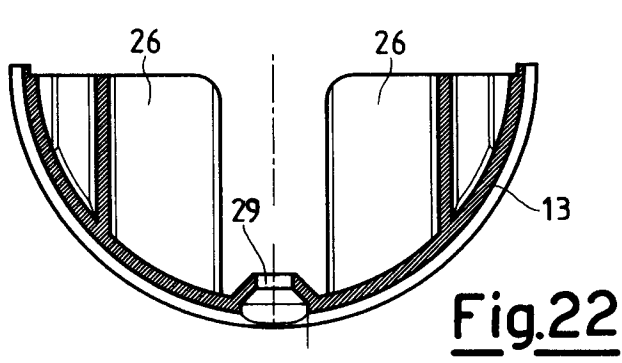
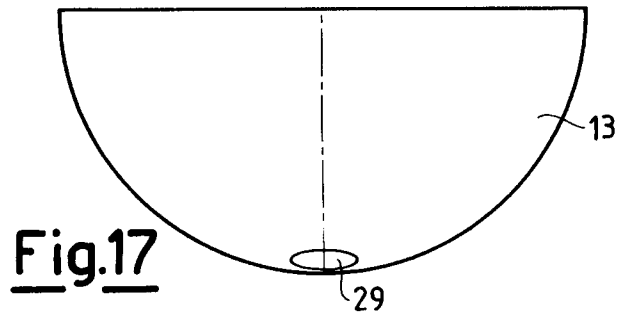


Fig.12







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EUROPEAN SEARCH REPORT

Application Number
EP 96 20 0261

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y A	DE-U-89 06 646 (ALDEGHI LUIGI S.P.A.) * claims 2,4; figures 1-3 * ---	1 3,4	A47B96/06
Y A	EP-A-0 383 213 (BAJO TRADING ANSTALT) * abstract; figure 1 * -----	1 3,4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		20 May 1996	Jones, C
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