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(54) **A flexible material container for granular products, provided with a dispensing device**

(57) An airtight container of flexible material particularly for granular or powder products, obtained by successive folding and welding of a sheet material, and having a substantially parallelepiped shape, with two reinforcing plates (7) disposed inside two opposite side walls (6) thereof, the container being provided with a dispensing device (10) on one of said side walls (6), said dispensing device comprising a flap (12) punched in said plate (7) that can be opened outward by pulling on a tab (15) of said sheet material of the container, which covers said flap (12).

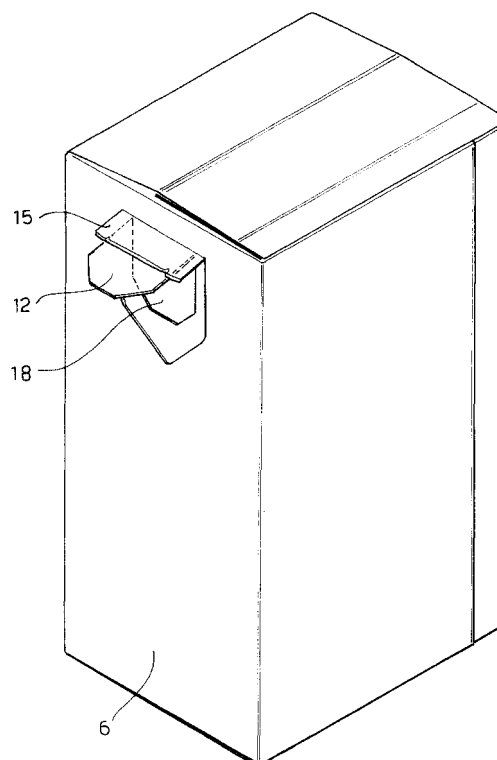


FIG. 4

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Description

[0001] The present invention refers to a container in flexible material, in particular of the airtight type, for granular or powder products, provided with a product dispensing device.

[0002] Flexible sheet material containers, for example of the so-called gusset type, are widely known and are used to package products of various types, for example food products, such as granular and powder products, or in any case products of a solid consistency.

[0003] They are made of a single-layer or multi-layer material, with one or both outer surfaces heat-weldable, for example of polyethylene. The package is obtained, in a per se known manner, by successive folds, making transverse and longitudinal welds between superimposed parts of the heat-weldable layers.

[0004] A drawback of these containers is that they do not retain their shape, normally parallelepiped, if they are not vacuum packed and, in any case, if vacuum packed they tend to go limp or collapse after opening.

[0005] To overcome this drawback, containers stiffened with a base plate and a cover plate have been proposed, which solve the problem of the container going limp.

[0006] In a container of said type, the cover plate is normally a small frame that involves the perimeter of the container, so as to leave a wide opening for access to the product following lifting of a cover fitted on the container.

[0007] The presence of said frame can form an obstacle to removal of the product, whether this takes place by means of a spoon, which may knock against the edge of the frame as it is removed, or by tipping of the container, in that the product tends to collect behind the frame, thus obstructing regular dispensing thereof.

[0008] The object of the invention is to eliminate the above-mentioned drawbacks, and in particular to provide a flexible container of the above-mentioned type, with reinforcing plates able to prevent it from going limp, provided with a device for dispensing of the product.

[0009] Another object of the invention is to provide such a container that is completely airtight before opening.

[0010] These objects are achieved by the flexible container according to the invention, which has the characteristics of appended independent claim 1.

[0011] Advantageous embodiments of the flexible container with a dispensing device for the product according to the invention are apparent from the dependent claims.

[0012] Essentially, a flexible material container according to the invention has two reinforcing plates, advantageously of plastic material, inside two opposite side walls of the container, and the product dispensing device is disposed on one of said walls, a punching being provided therein that allows outward opening of a flap, through which the product can be dispensed.

[0013] In one embodiment, the flap is extracted with upward rotation, so as to define a window through which the product can be poured.

[0014] According to another embodiment, such a flap is extracted with a downward rotation and is shaped so as to define a sort of mouth or channel through which the product can easily be poured. In practice, in this case, the flap is connected by means of side walls to the corresponding wall of the container, to define the above-mentioned channel for discharge of the product.

[0015] Further characteristics of the invention will be made clearer by the detailed description that follows, referring to purely exemplary and therefore non-limiting embodiments thereof, illustrated in the appended drawings, in which:

Figure 1 is a diagrammatic, axonometric view of a container, with the dispenser in the closed position, according to a first embodiment of the invention;

Figures 2 and 3 are sections taken respectively along the planes II-II and III-III of Figure 1;

Figure 4 is an axonometric view, like that in Figure 1, with the dispenser in the open position of use, and with the outer tab shown partially for the sake of clarity;

Figure 5 is a front elevational view of the wall of the container with the dispenser in the closed position, taken from the outside of the container, according to a second embodiment of the invention;

Figure 6 is an elevational view of the same wall shown in Figure 5, but taken from the inside of the container;

Figure 7 is an axonometric view of the portion of container wall with the dispenser in the open position of use;

Figures 8 and 9 are sections taken respectively along planes VIII-VIII and IX-IX of Figures 5 and 7, showing the dispenser in the closed and open position, respectively;

Figure 10 is an axonometric view of the portion of container wall with the dispenser in a third embodiment, the dispenser being shown open; and

Figure 11 is a sectional view taken along the plane XI-XI of Figure 10.

[0016] With reference to said figures, and for now to Figures 1 and 4, a container of flexible material for granular products, provided with a dispensing device according to a first embodiment of the invention will be described.

[0017] Said container, indicated as whole with reference numeral 1, is made of flexible sheet material, with one or more layers, for example heat-weldable on at least one side.

[0018] The container 1 is obtained, according to a per se known method, by folding along vertical fold lines 2, corresponding to its vertical corners, and by making a vertical or longitudinal fold 3, which is disposed on a vertical face of the container, in particular near one of said vertical comers 2, so as to merge therewith. Subsequently a bottom horizontal or transverse weld 4, which is then folded and welded onto the bottom wall of the container, and a top horizontal or transversal weld 5 are made, thus obtaining the container as shown in Figures 1 and 4.

[0019] Before formation of the container 1, respective substantially rigid reinforcement plates 7 (visible in particular in the cutaway view in Figure 1), serving to strengthen the container, are disposed inside its opposite sides or side walls 6, ensuring that the upright condition is maintained.

[0020] The plates 7 can be formed from any suitable material, but they are advantageously made of plastic material, with a barrier effect, so as to be able to be heat welded inside the flexible sheet material forming the container. Alternatively, the plates 7 can be made of cardboard with a layer with a barrier effect and glued to the sheet material.

[0021] To allow dispensing of the product, according to the invention, a dispensing device, designated as a whole by reference numeral 10, disposed on one of said side walls 6 of the container, is provided.

[0022] The dispenser 10 is substantially obtained by making in the reinforcing plate 7 a punching 11 which defines a flap 12 that can be opened outward, rotating around a hinge axis 13.

[0023] A further punching 14, with a complete or broken cut, is provided on the sheet material of the wall 6 of the container, at a position corresponding to said flap 12.

[0024] The punching 14 could coincide, at least in part, with the punching 11, but to keep the flap 12 completely covered before use, and thus ensure that the container is airtight, it is preferred to make the punching 14 in the sheet material outside the perimeter of the flap 12. In practice, therefore, the punching 14 is disposed outside the punching 11, producing a tab 15 of sheet material (see in particular Figure 4), having a terminal gripping edge 16 disposed at the bottom in the embodiment in figures 1 and 4, such as to facilitate opening of the flap 12.

[0025] For this purpose, said gripping edge 16 is not fixed in any way to the corresponding plate 7, so as to be able to be raised easily during opening of the container. To facilitate detachment of the tab 15 from the plate 7, a layer of easy-open material 17 is applied between the borders of the two punchings 11 and 14, so as to weaken the weld holding between the sheet ma-

terial and the plate 7, in order to facilitate detachment during opening.

[0026] In contrast, in the area of the flap 12, a stable coupling is provided, at least along the perimeter of the punching 11, between the sheet material of the container and the plate 7, so as to avoid detachment of the tab 15 from the flap 12.

[0027] To bring the dispenser 10 into the opening position, it is sufficient to grip the gripping edge 16 and pull outward. In this manner the tab 15 is caused to peel away in the area affected by the easy-open material 17, and the flap 12, which remains constrained to the tab 15, is consequently raised, as shown schematically in Figure 4, thus causing an opening 18 in the top part of the wall 6 of the container, through which a granular or powder product contained in the container 1 can be poured.

[0028] For re-closing of the dispenser 10, it is sufficient to lower the flap 12, which remains wedged with a slight interference in the corresponding plate 7.

[0029] In order for closing of the flap to be better ensured, an adhesive that allows the sheet material of the tab 15 to be reapplied tightly to plate 7 can be disposed in the area 17 where the layer of easy-open material is provided.

[0030] The embodiment of the dispensing device shown in Figures 5 to 9 will now be described, using the same reference numerals employed in the description of the embodiment in Figures 1 to 4, to indicate like or corresponding parts.

[0031] According to said embodiment, punching of the flap 12 and of the corresponding tab 15 takes place in exactly the same manner as in the embodiment in Figures 1 to 4, with the sole difference that the flap 12 in this case opens with a downward rotation, so that the position of the hinge axis 13 is inverted with respect to that shown in Figure 1.

[0032] Opening of the dispenser 10 thus takes place in the same manner as described with reference to Figures 1 to 4, with the sole difference that pulling on the gripping edge 16 causes lowering, instead of raising, of the flap 12.

[0033] In this case respective dispenser side walls 21 of a sufficiently elastic material are provided at the vertical edges 20 of the flap 12 and when the dispenser 10 is closed are disposed inside the container 1, in a substantially wide apart position with respect to the flap, as shown in Figure 6.

[0034] When the dispenser 10 is in the open state, said dispenser side walls 21 are disposed in a position substantially at right angles to the plane of the flap 12, thus defining a channel through which the product contained in the container 1 can be poured.

[0035] To allow the flap to be blocked at a certain angle of opening on said flexible dispenser side wall, respective notches 22 are provided which, during extraction of said dispenser side walls from the container, that is during opening of the flap 12, come to engage with

the upper edge 23 of the opening 18 which is formed in the plate 7, thus holding the flap open in a stable condition.

[0036] In order to close the flap 12 again, inward pressure is exerted thereon so that the elastic yielding of the dispenser side walls 21 causes disengagement of said notches 22 from the upper edge 23 of the opening 18, and thus the return of the dispenser side walls inside the container 1, in the position shown in Figure 6.

[0037] The embodiment illustrated in Figures 10 and 11 differs from that of Figures 5 and 9 solely in that said flexible dispenser side walls 21 in this case are made by means of respective gussets that join the vertical side edges 20 of the flap 12 to the corresponding vertical edges 25 of the opening 18 made in the plate 7.

[0038] Operation of the dispenser 10 of Figures 10 and 11 is substantially the same as that of Figures 5 to 9, with the difference that said dispenser side walls 21, when the dispenser is in the closed state, fold in a gusset inside said opening 18.

[0039] From what is described above the advantages of the invention are evident, in that it provides a dispenser device for flexible containers that allows easy dispensing of the granular or powder product contained in said containers.

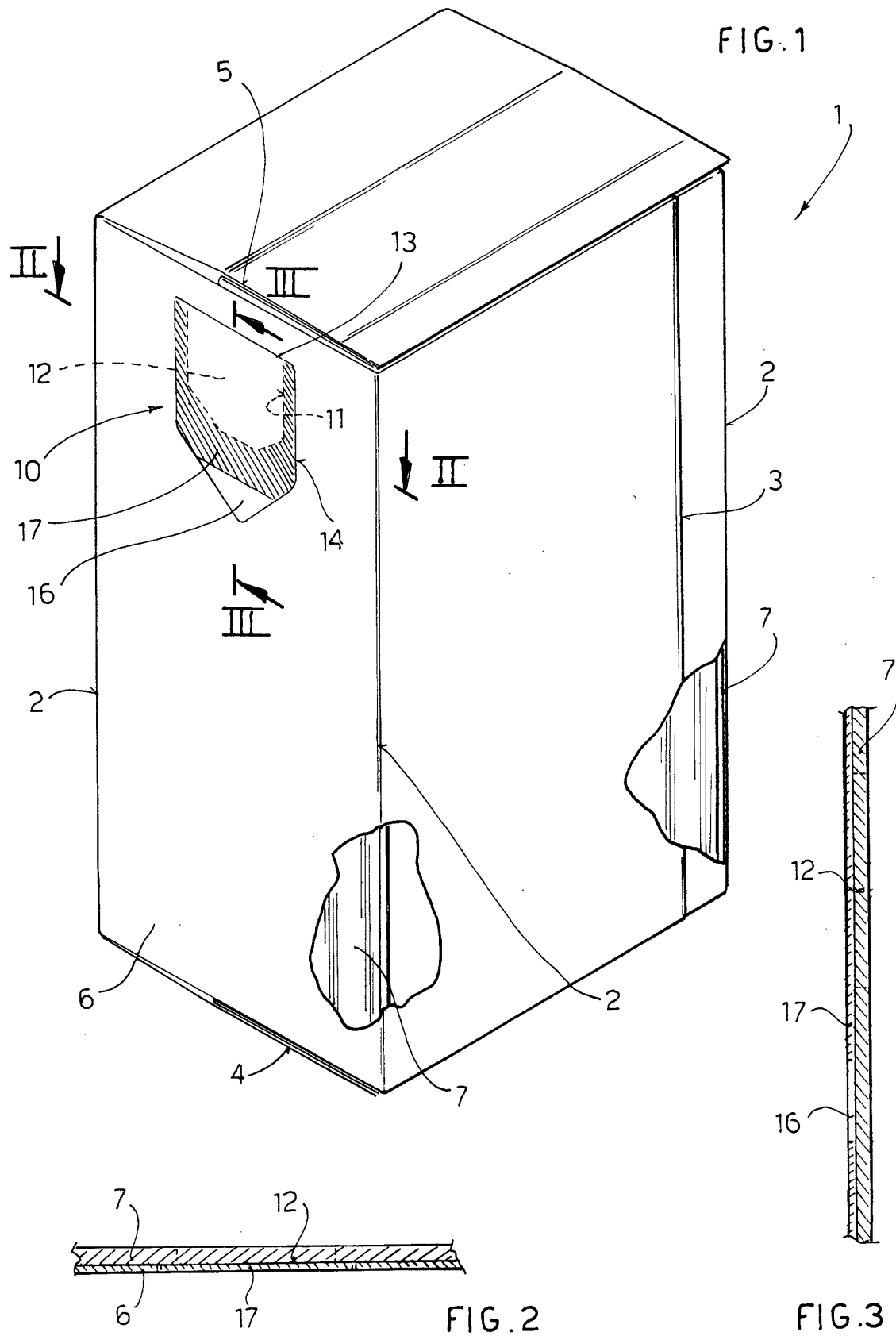
[0040] Naturally the invention is not to be considered limited to the embodiments described previously and illustrated in the appended drawings, but numerous modifications of detail within the reach of a person skilled in the art can be made thereto, without departing from the scope of the invention as defined in the appended claims.

Claims

1. A container of flexible material, obtained by successive folding and welding of sheet material, such as to confer upon the container (1) a substantially parallelepiped shape, reinforcing plates (7) being provided respectively inside two opposite facing side walls (6) of said container (1), **characterized in that** at one of said side walls (6) a dispensing device (10) is provided, comprising a flap (12) punched in said plate (7), which can be opened outward by pulling on a tab (15) of said sheet material of the container, which covers said flap (12).
2. A container according to claim 1, **characterized in that** said tab (15) has a terminal gripping edge (16), not constrained to said plate (7).
3. A container according to claim 1 or 2, **characterized in that** said tab (15) of sheet material is punched along a line (14) that encloses a punching line (11) of said flap (12) in said plate (7), so that between said punchings (11, 14) an area (17) of coupling between said tab (15) and the plate (7) be-

neath is formed.

4. A container according to claim 3, **characterized in that** in said area (17), between the sheet material of the tab (15) and the plate (7) a layer of easy-open material able to facilitate detachment of the tab (15) from the plate (7) in said area is provided.
5. A container according to claim 3, **characterized in that** in said area (17) a layer of adhesive is applied that allows said tab (15) of sheet material to be re-applied.
6. A container according to any one of the preceding claims, **characterized in that** said flap (12) can be opened outward by means of rotation about a hinge axis (13) however oriented on said side wall (6) of the container (1).
7. A container according to claim 6, **characterized in that** said hinge axis (13) is horizontal and allows upward rotation of the flap (12).
8. A container according to claim 6, **characterized in that** said hinge axis (13) is horizontal and allows downward rotation of said flap (12).
9. A container according to claim 8, **characterized in that** respective dispenser side walls (21) able, together with said flap (12), to form a channel for discharge of the product are joined to the vertical edges (20) of said flap (12).
10. A container according to claim 9, **characterized in that** said dispenser side walls (21) are elastic and are disposed inside the container (1) in the closed state and have respective notches (22) able to engage with the upper edge (23) of an opening (18) made in the plate (7) to block the flap (12) at an established angle of opening.
11. A container according to claim 9, **characterized in that** said dispenser side walls (21) are gusset walls connecting the vertical edges (20) of the flap (12) to the corresponding vertical edges (25) of an opening (18) made in the plate (7).



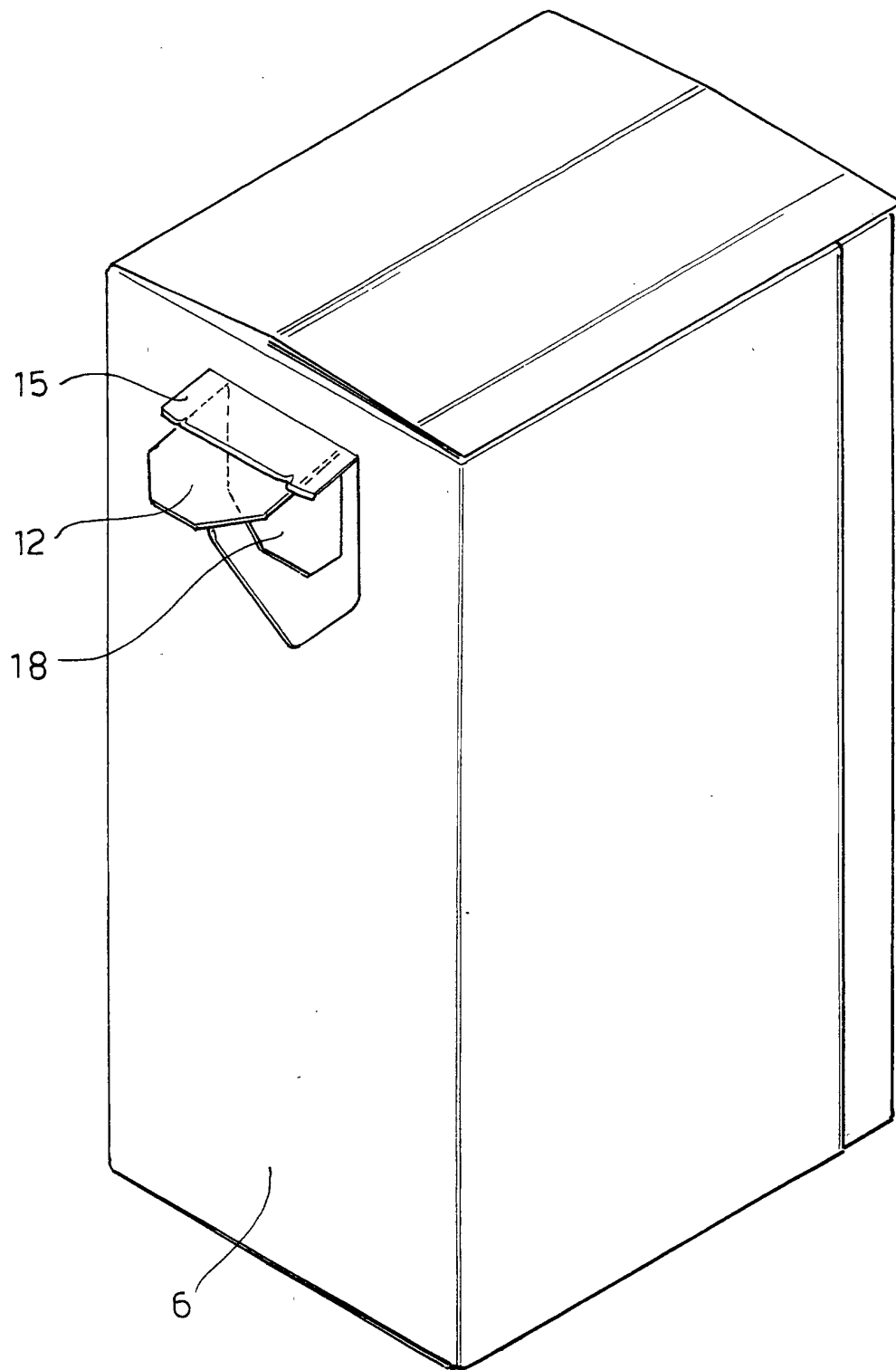


FIG. 4

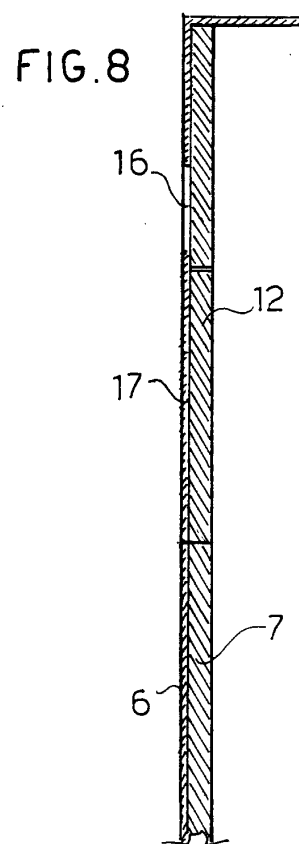
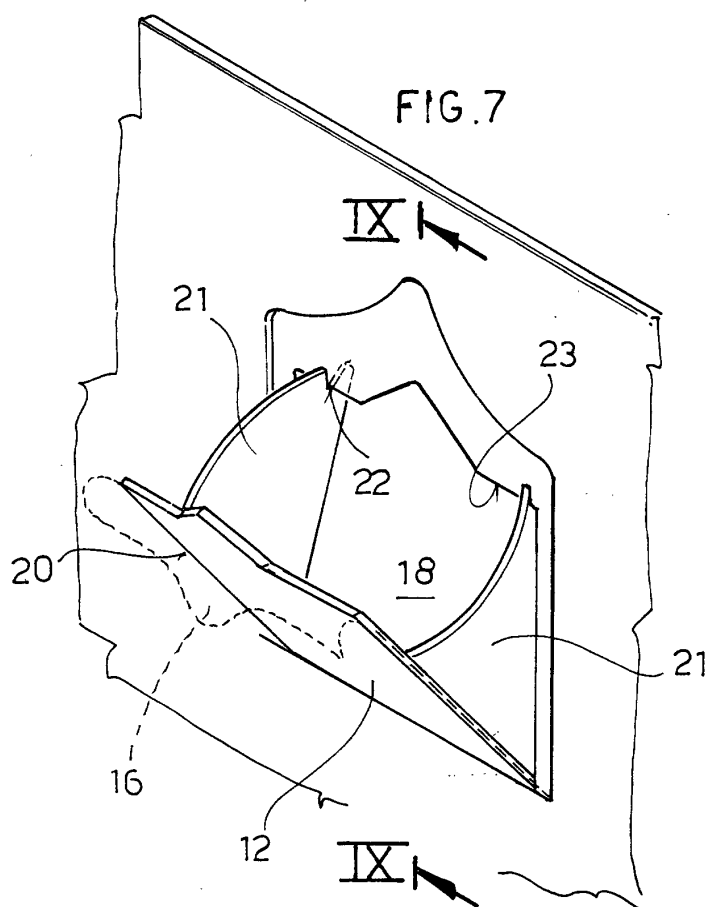
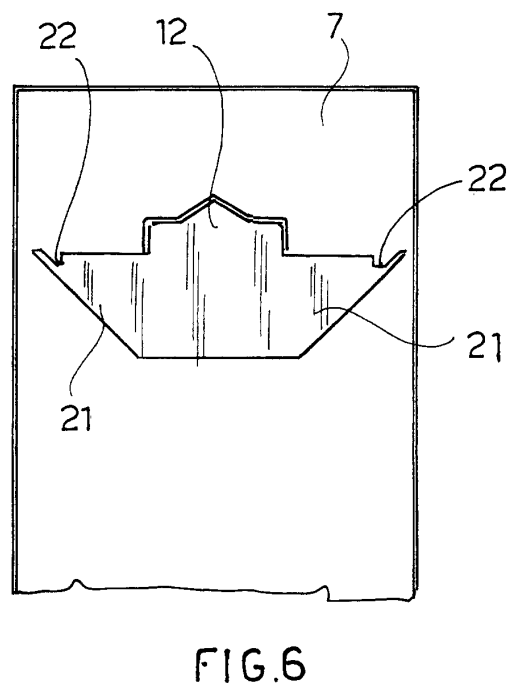
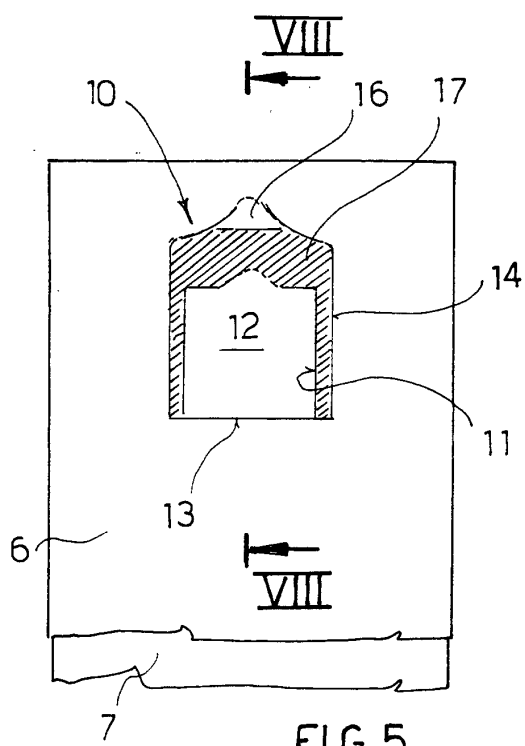


FIG. 9

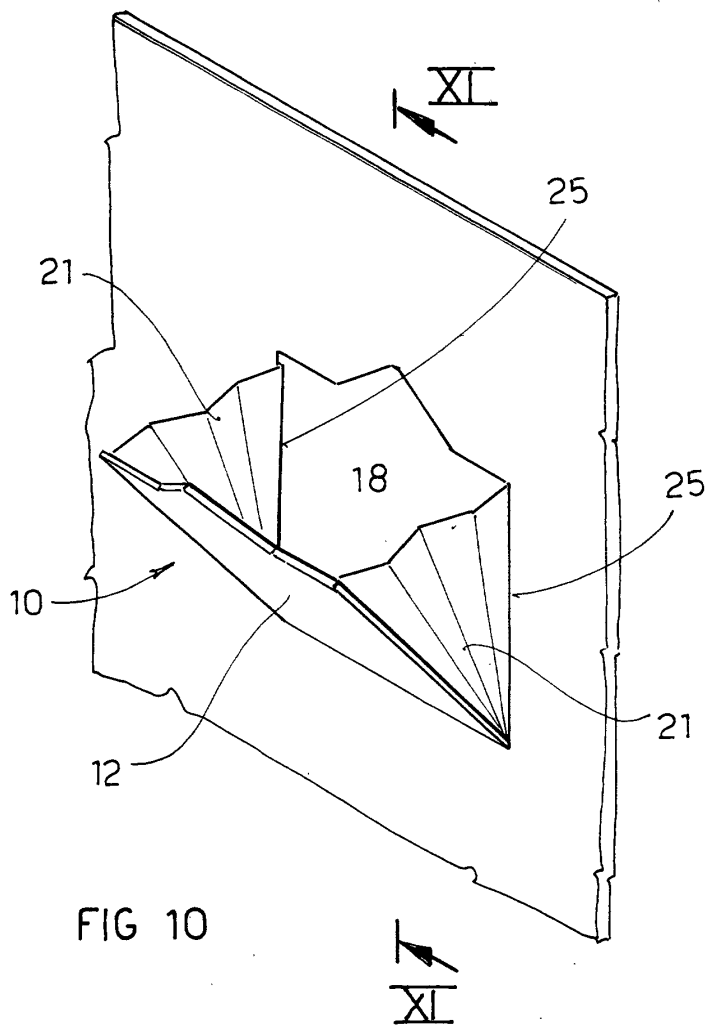
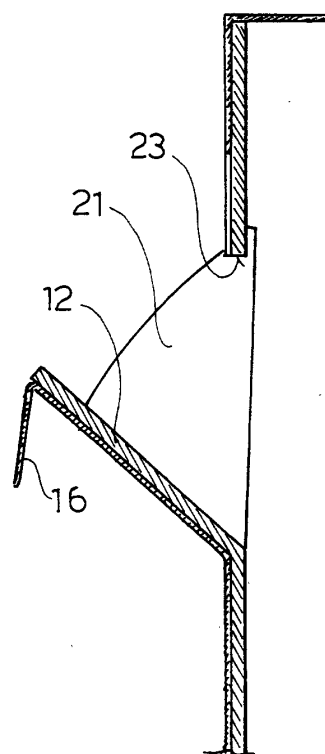


FIG 10

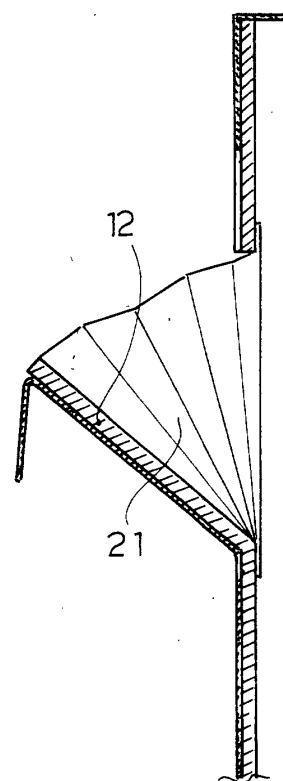


FIG. 11



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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 7003

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 September 2001	Examiner SERRANO GALARRAGA, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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