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(54) **Dispensing apparatus**

(57) A display assembly 2 includes a substantially planar base member 4 which is inclined and held in position by suitable means. An elongate support rail 6 is secured to the base member 4 at a front end thereof. The support rail is arranged to pivotally and releasably engage a plurality of upwardly extending support members 8 which releasably engage respective side pieces 10. Respective elongate channels 12 are defined by the

base member 4 and a pair of adjacent side pieces 10, within which channels a stack of products (not shown) may be arranged. A carriage device 14 is arranged behind the stack of products and is arranged to move forward under gravity to shunt the products forward in the channels when products are removed from the front end thereof.

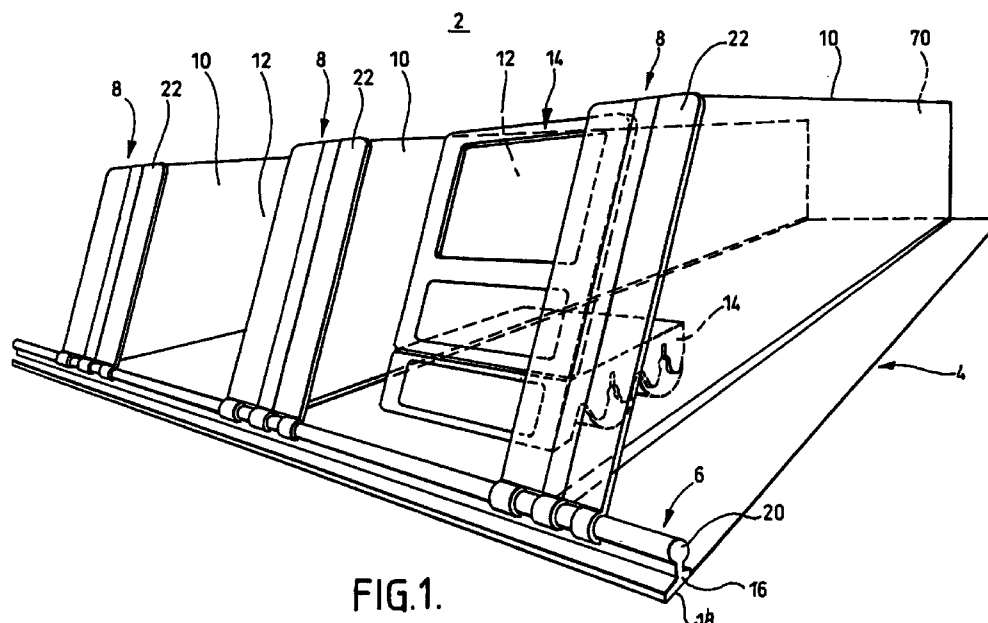


FIG.1.

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Description

[0001] This invention relates to a dispensing apparatus and particularly, although not exclusively, relates to the dispense of food or non-food products in a retail outlet. The invention also provides a method of assembling A dispensing apparatus, a kit and a method of dispensing products.

[0002] Gravity feed dispensing apparatus are well-known for dispensing products, for example packaged food items or non-food items such as womens' tights or other goods presented in relatively small packages. A known apparatus may simply comprise an inclined chute in which a line of products to be dispensed is arranged. When the forward-most product is removed from the chute, the remaining products shunt forward due to gravity acting upon them.

[0003] Known apparatus lack versatility. For example, the chutes themselves may have fixed dimensions making it difficult to adapt them for dispensing larger or smaller products. Also the angle of inclination of the chute may be fixed or, even if it may be possible to adjust the angle, expensive customized fabrication of components of the apparatus may be necessary to achieve this. Furthermore, known apparatus may be difficult and/or time-consuming to assemble.

[0004] It is an object of the present invention to address problems associated with known dispensing apparatus.

[0005] According to a first aspect of the present invention, there is provided a dispensing apparatus for dispensing products, the apparatus comprising a guide means which is defined, at least in part, by an upwardly extending divider means and a base, wherein said divider means includes a support means which is pivotally mounted so that the angle of the support means relative to said base can be varied.

[0006] Said guide means is preferably upwardly inclined and is suitably arranged to guide movement, suitably also to contain, a multiplicity of products to be dispensed which products may be the same size and/or shape. Said products may be arranged in line with one another, for example in a stack. The products may be food or non-food products. They may have a width in the range 2 cm to 40 cm, preferably 5 cm to 30 cm, more preferably 5 cm to 15 cm.

[0007] Said support means may be pivotable through an angle of at least 15°, suitably at least 30°, preferably at least 45°, more preferably at least 90° and especially 150° or more. The support means may be pivotable through an angle of less than 270°.

[0008] Said support means preferably includes means for supporting, preferably for releasably securing, a divider wall of said divider means. Said support means preferably includes a male or female part arranged to engage a part, for example the other one of a female or male part, associated with said divider wall. Preferably, said female part comprises a channel which

is suitably fixed relative to said support means and which is suitably arranged to face rearwardly in use. Preferably, said support means includes an elongate channel for engagement with said divider wall which channel suitably extends substantially tangentially away from a pivot axis about which said support means is pivotable. One of said support means or said divider wall preferably includes detent means and the other includes a corresponding opening for releasably securing the two parts together. Said detent means may suitably comprise one or more projections, suitably arranged within the channel of the support means (when provided), arranged to engage one or more corresponding openings provided in said divider wall.

[0009] Means may be provided for securing said divider wall in position towards a rear end thereof. Said means may comprise cooperable male and female elements.

[0010] Said support means may include means for securing a display sign. Such means may comprise a male or female element arranged to be releasably engaged with the other one of a female or male element associated with the display sign. Preferably, said support means includes a female element.

[0011] Said support means preferably includes first securement means for releasably securing it relative to the base. Said first securement means is preferably a component of a hinge means. Said first securement means is preferably provided adjacent, suitably along, a lower end of said support means which lower end preferably extends substantially horizontally in use.

[0012] Said support means may be arranged to be releasably secured relative to the base, for example by engagement of a male element fixed relative to one of either said support means or said base with a female element fixed relative to the other one of either said support means or said base. Preferably, said support means includes said female element.

[0013] Said support means is preferably movable relative to said base in the direction of an axis about which it is pivotally mounted.

[0014] Said support means is preferably a unitary member manufacturable by injection moulding.

[0015] Said divider means may include an intermediate member via which said support means may be secured relative to the base. Said intermediate member preferably includes a planar surface which is arranged to be secured to the base by suitable means which may comprise adhesive or magnetic means. Advantageously, said intermediate member is secured to the base using a method which does not involve any penetration of the base.

[0016] Said intermediate member preferably includes a male or female element for cooperation with the other one of a female or male element associated with said support means. Preferably, said intermediate member includes a male element which suitably has a part-circular cross-section. Said intermediate member

preferably has a substantially constant cross-section along its extent.

[0017] Said intermediate member is preferably a unitary member manufacturable by extrusion.

[0018] Preferably, said apparatus includes a plurality of upwardly extending divider means which may independently be as described in any statement herein. Where the apparatus includes an intermediate member as described, a plurality of support means may be associated therewith and, suitably, the distance between adjacent support means may be adjustable, preferably by simply sliding respective support members over a surface fixed relative to the base.

[0019] Preferably, adjacent divider means define, with the base, a channel in which products may be arranged. The width of the channel is suitably adjustable so that the width of an exit mouth of the channel is slightly less than the width of the products.

[0020] Said apparatus suitably includes at least 2, preferably at least 3, more preferably at least 4, especially at least 5 channels as described. Means, for example a carriage device, may be associated with one or more channels for urging the contents thereof towards the front thereof.

[0021] According to a second aspect of the invention, there is provided a method of assembling a dispensing apparatus, the method comprising pivotally mounting a support means relative to a base, securing a divider means to the support means so that it extends upwardly away from said base and defines, with the support means and/or said base, a part of a guide means for products to be dispensed by the apparatus.

[0022] Preferably, said support means is arranged so that it may define a range of angles relative to said base. Said divider means may define a fixed, unadjustable angle.

[0023] The method preferably includes pivotally mounting a plurality of said support means as described so that adjacent divider means define a channel for products.

[0024] According to a third aspect of the invention, there is provided a kit comprising a plurality of support means as described herein, optionally together with an intermediate member as described herein.

[0025] The kit may also include a plurality of divider means which are suitably substantially planar sheets of plastics material.

[0026] According to a fourth aspect, there is provided a method of dispensing products using an apparatus as described herein.

[0027] Any feature of any aspect of any invention or embodiment described herein may be combined with any feature of any aspect of any other invention or embodiment described herein.

[0028] Specific embodiments of the invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a schematic perspective view of a part of a dispensing apparatus including a display assembly and a carriage device;

Figure 2 is a front elevation of a support member of the assembly;

Figure 3 is a side view of the support member in the direction of arrow III in figure 2;

Figure 4 is a rear elevation of the support member;

Figure 5 is a schematic side view of the support member engaged with a support rail so as to define an acute angle to the vertical and a side piece for engagement with the support member;

Figure 6 is a view similar to figure 5, except the support member extends vertically; and

Figure 7 is a rear perspective, exploded, partially cut-away view of the support member and side piece and a front mountable display sign.

[0029] Referring to figure 1, the display assembly 2 includes a substantially planar base member 4 which is inclined and held in position by suitable means. An elongate support rail 6 is secured to the base member 4 at a front end thereof. The support rail is arranged to pivotally and releasably engage a plurality of upwardly extending support members 8 which releasably engage respective side pieces 10. Respective elongate channels 12 are defined by the base member 4 and a pair of adjacent side pieces 10, within which channels a stack of products (not shown) may be arranged. A carriage device 14 is arranged behind the stack of products and is arranged to move forward under gravity to shunt the products forward in the channels when products are removed from the front end thereof.

[0030] The apparatus is described in further detail below.

[0031] The base member 4 may be made of wood, plastics or metal. It may be supported by any suitable means and inclined at any desired angle.

[0032] The support rail 6 suitably comprises a plastics extrusion. It includes a base part 16 having a planar lower surface 18 and a head part 20 which has a generally circular cross-section. The support rail may be secured to the base member 4 by suitable means, the nature of which may be selected depending upon the material from which the base member is made. For example, if the base member is made of metal, magnetic means may be provided. If, however, the base member is made from wood or plastics, then the support rail may be secured in place using double-sided adhesive tape. Advantageously, no drilling of the base member is needed to enable the support rail to be secured in position.

[0033] The support members 8 are as shown in figures 2 to 7. Each comprises a planar rectangular web 22, at a lower end of which are arranged five aligned arcuate support tabs 24, 26, 28, 30, 32 wherein tabs 24, 28, 30 are superimposed on each other and tabs 26, 30 are also superimposed on each other. The tabs together define a circular cross-section opening within which the head 20 can fit. The support members 8 can be snap engaged with (and easily disengaged from) the support rail 6. Alternatively, they could simply be arranged to be slidably engaged with the rail. When engaged with the rail, the support members can be pivoted thereabout.

[0034] The support members 8 include an elongate rearwardly-open centrally-positioned upwardly-extending channel 40, defined by spaced apart trapezium-shaped planar members 42, 44. Two pairs 46, 48 of opposing pips 50 extend into the channel 40.

[0035] The channel 40 is arranged to releasably engage side pieces 10. The side pieces 10 comprise planar pieces of plastics sheet material within which openings 60 are arranged so that, when a side piece is arranged within a channel 40, the pips 50 engage the openings 60 thereby to secure the side pieces to the support member 8.

[0036] The side pieces 10 may be shaped according to the angle defined between the support member 8 and base member 4. For example, if a support member 8 is inclined as shown in figure 5, then front edge 62 may define substantially the same angle of inclination relative to bottom edge 64 as the angle of inclination of the support member 8 relative to the base member 4. Thus, where a support member 8 defines an angle of about 90° to the base member 4, a side piece 10 may be shaped as shown in figure 6.

[0037] A rear part 66 of the side pieces 10 may include an opening 68 which is arranged to releasably engage another support rail (similar to support rail 6) positioned towards the rear of the planar base member 4. Such an arrangement may substantially prevent rear ends 70 of the side pieces 10 from moving.

[0038] The support members 8 also include shaped openings 80 accessible from the front thereof and arranged to releasably engage a front mountable display sign 82. The sign 82 includes two pairs of resilient lugs 84 (only an upper pair of which is shown in figure 7). The sign 82 is arranged to be snap releasably-engaged with the support member 8 so that it projects substantially perpendicularly therefrom. The sign 82 can be of any suitable size or shape and is suitably for indicating promotional or other identifying information concerning a product contained in an adjacent channel of the display apparatus.

[0039] The carriage device 14 may be as described in Applicant's UK application number 98 10476.3 the contents of which are incorporated herein by reference.

[0040] The display apparatus may be assembled as follows.

[0041] Firstly, base member 4 is arranged at the desired angle of inclination. Then, rail 6 is secured in position. The support members 8 are then engaged with the rail 6 and spaced apart a desired distance so that the width of the respective channels 12 defined is such that a product to be contained within a particular channel 12 can rest against the rear of the support members. The angle of the support members 8 relative to base member 4 is selected and then suitably shaped side pieces 10 are engaged with the support members and also with a rear rail 6 (when provided as described above).

[0042] Any number of channels 12 may be defined simply by using more or fewer members 8 and associated side pieces 10. Also, a plurality of arrays of channels of the type shown in figure 1, may be provided one above the other.

[0043] Advantageously, the display assembly may be relatively versatile and/or easy to manufacture. Support members 8 can be made from plastics by injection moulding; rail 6 may be made from plastics by extrusion. It should be appreciated that rails 6 and members 8 can be used irrespective of the desired angle to be defined between support members and base members and irrespective of the width of the channels required. Whilst side piece 10 needs to be customized according to the angle, this is relatively cheap to do. Also, the length and/or height of the side pieces can readily be selected according to the desired configuration of the channels to be formed thereby.

[0044] The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

[0045] All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

[0046] Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0047] The invention is not restricted to the details of the foregoing embodiment(s). The invention extends, to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Claims

tus.

1. A dispensing apparatus for dispensing products, the apparatus comprising a guide means which is defined, at least in part, by an upwardly extending divider means and a base, wherein said divider means includes a support means which is pivotally mounted so that the angle of the support means relative to said base can be varied. 5
2. Apparatus according to claim 1, wherein said support means includes means for releasably securing a divider wall of said divider means. 10
3. Apparatus according to claim 2, wherein said support means includes an elongate channel for engagement with said divider wall which channel extends substantially tangentially away from a pivot axis about which said support means is pivotally mounted. 15 20
4. Apparatus according to any preceding claim, wherein said support means includes first securement means along a lower end thereof, wherein said first securement means is a component of a hinge means and wherein said support means is movable relative to said base in the direction of an axis about which it is pivotally mounted. 25
5. Apparatus according to any preceding claim, wherein said support means is a unitary member manufacturable by injection moulding. 30
6. Apparatus according to any preceding claim, wherein said divider means includes an intermediate member via which said support means may be secured relative to the base using a method which does not involve any penetration of the base. 35
7. Apparatus according to claim 6, wherein a plurality of support means is associated with said intermediate member and the distance between adjacent support means is adjustable by sliding respective support members over a surface fixed relative to the base. 40 45
8. Apparatus according to any preceding claim, wherein means is associated with said guide means for urging the contents thereof towards the front thereof. 50
9. A method of assembling a dispensing apparatus, the method comprising pivotally mounting a support means relative to a base, securing a divider wall to the support means so that it extends upwardly away from said base and defines, with the support means and/or said base, a part of a guide means for products to be dispensed by the apparatus. 55
10. A method according to claim 9, which comprising securing an intermediate member relative to the base by a method which does not involve any penetration of the base, releasably securing a plurality of support means relative to said intermediate member and releasably securing a plurality of divider walls to said support means.
11. A kit for assembly of a dispensing device according to any of claims 1 to 8 or for use in a method according to claim 9 or claim 10, the kit comprising a base, a plurality of support means arranged to be secured relative to the base, a plurality of divider walls arranged to be secured to said support means so that, when assembled, said base, support means and divider walls define a plurality of channels in which products may be arranged.

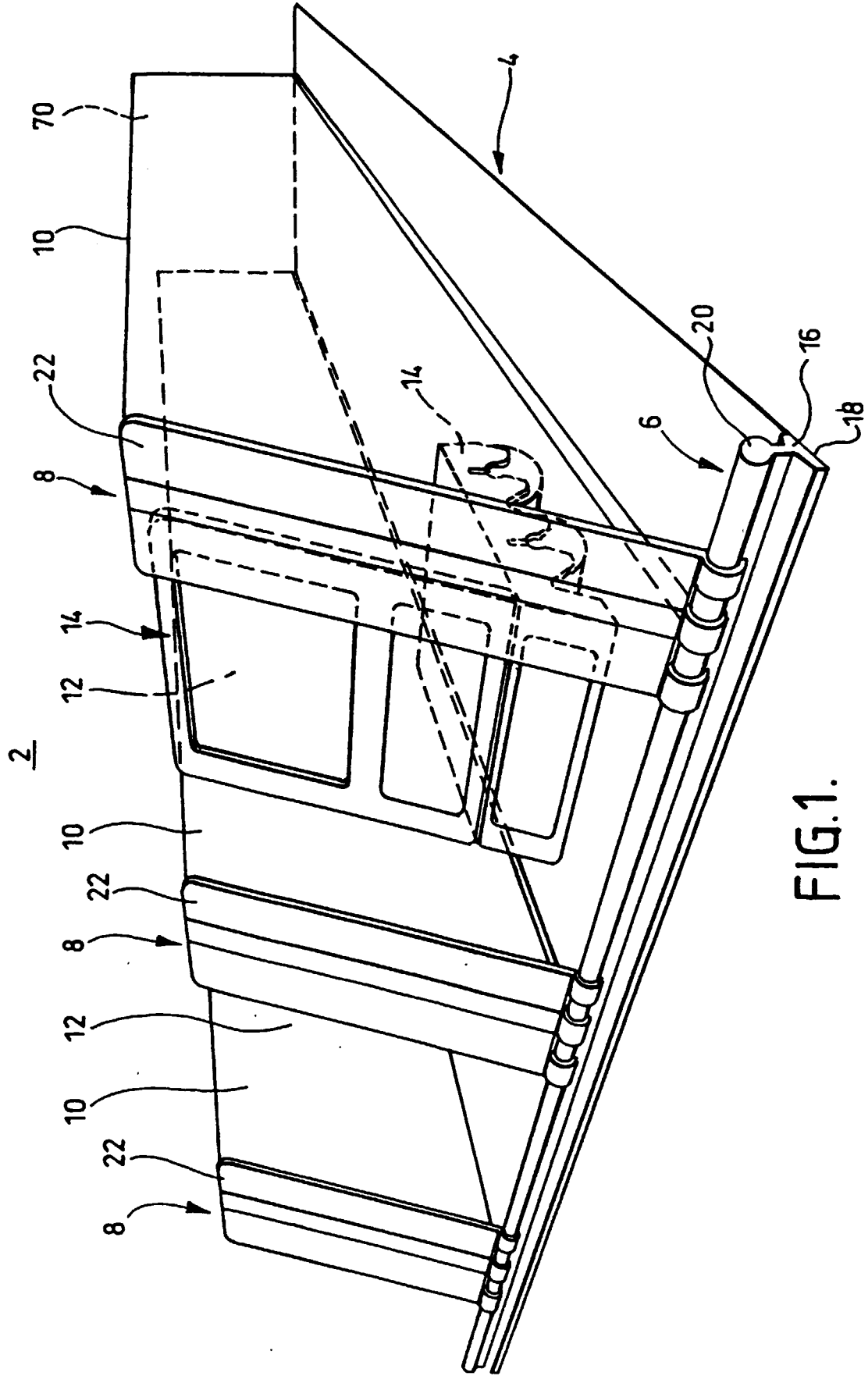
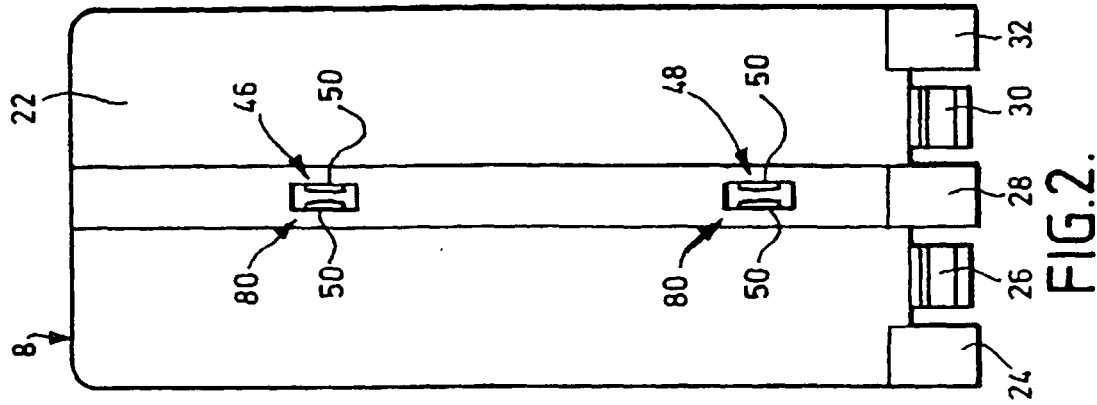
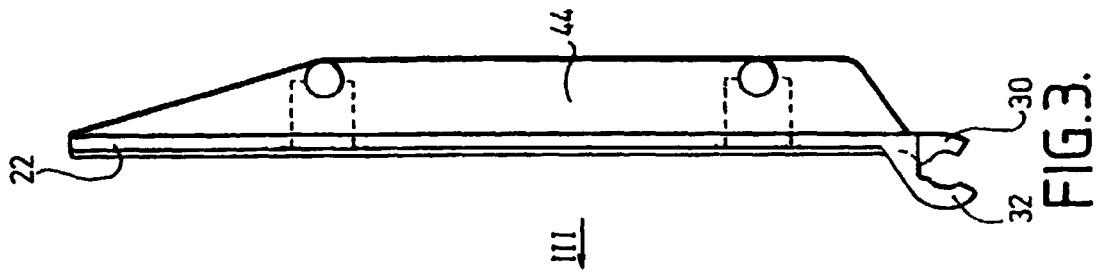
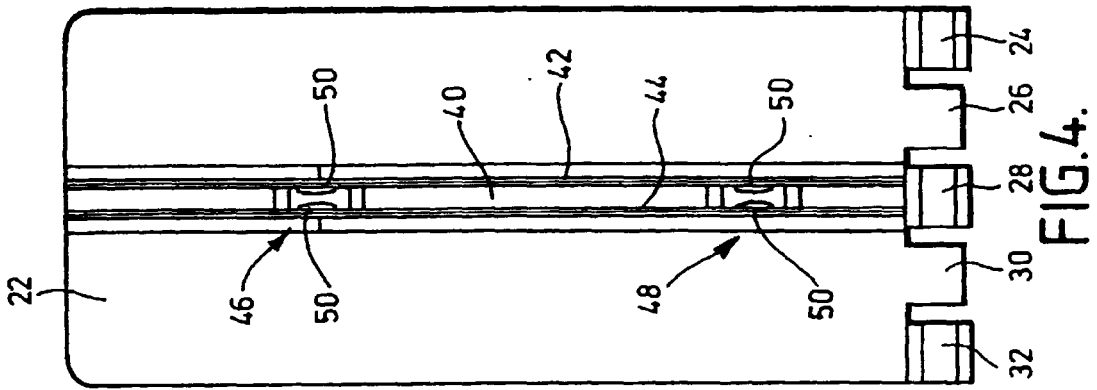
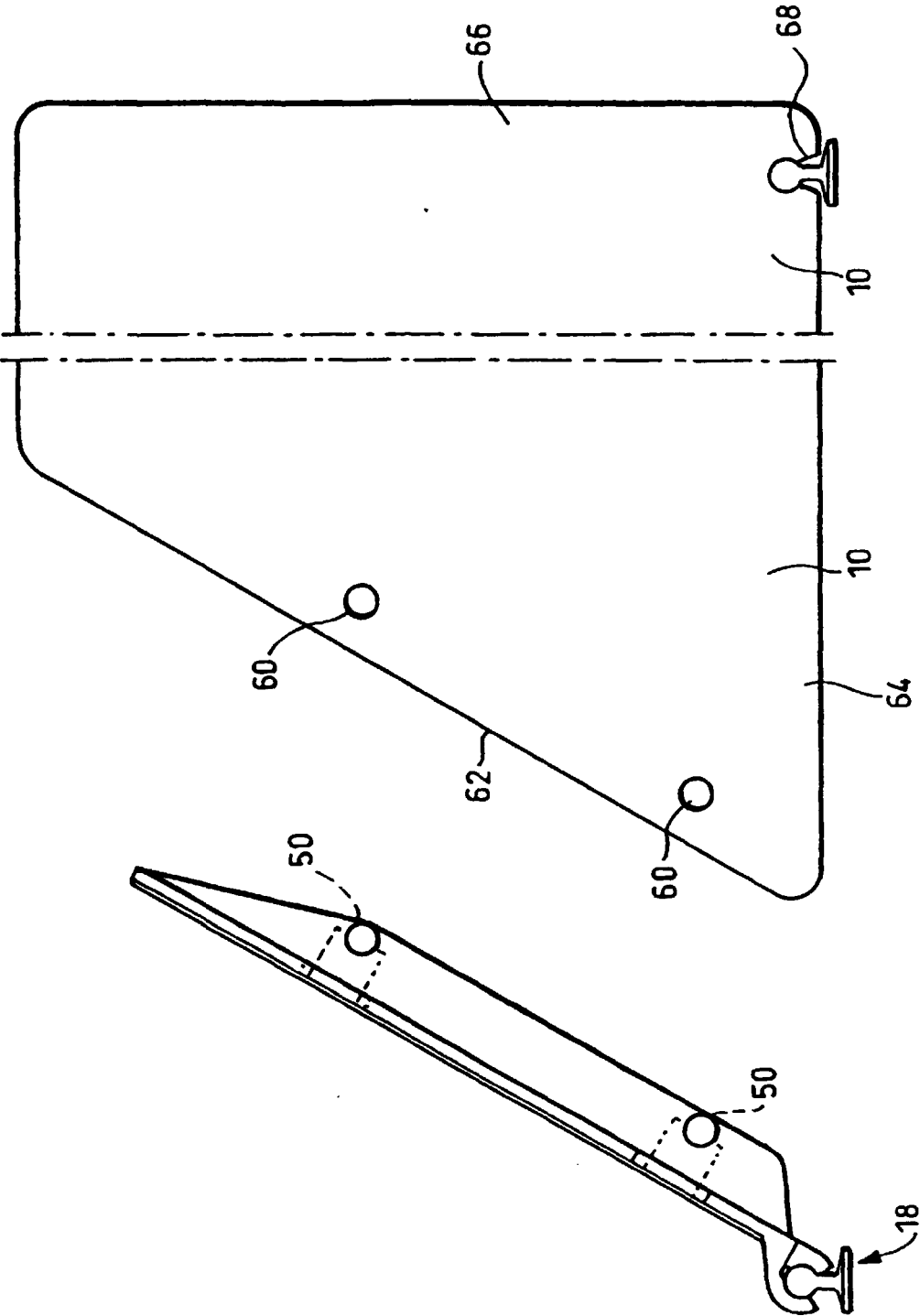
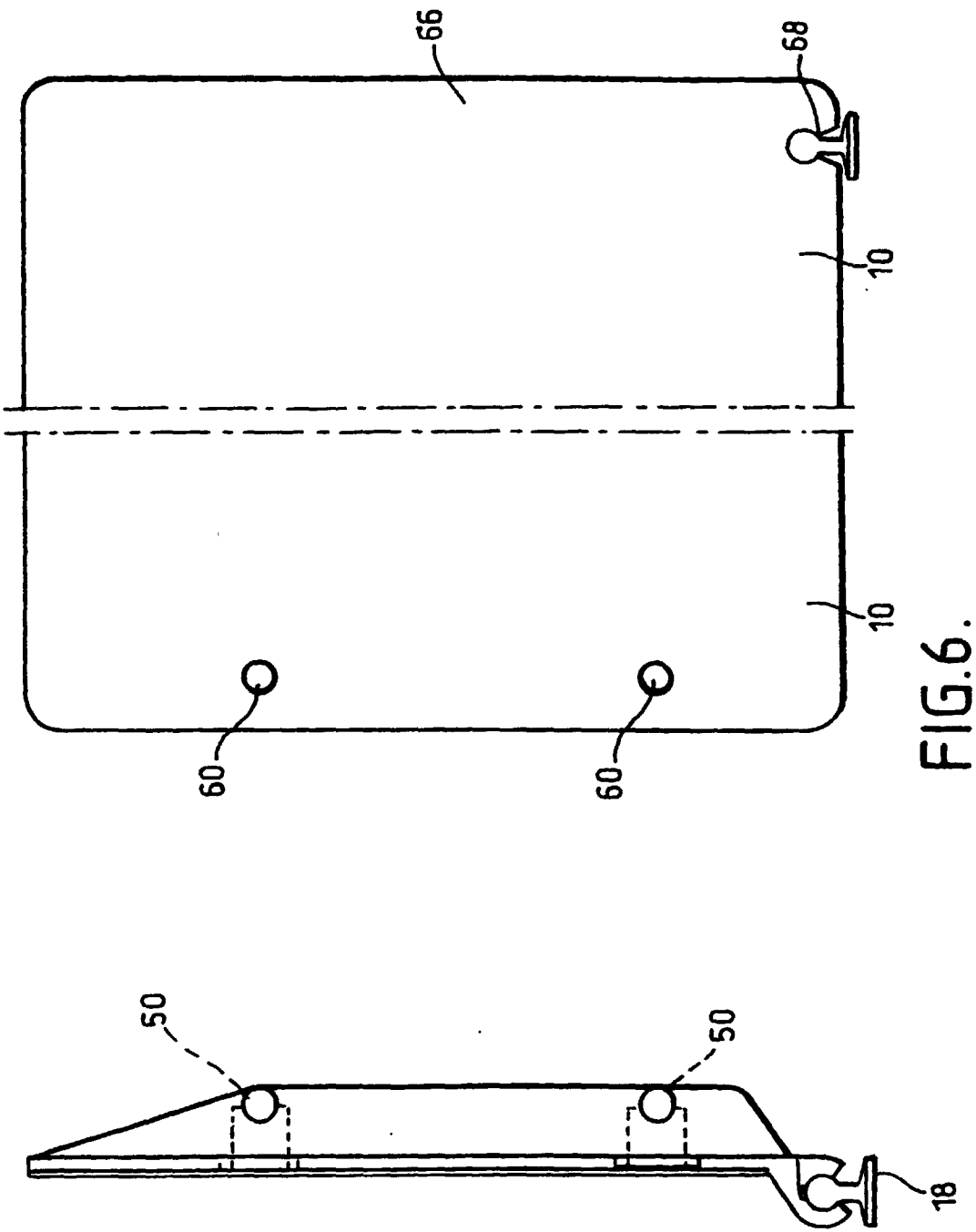


FIG.1.







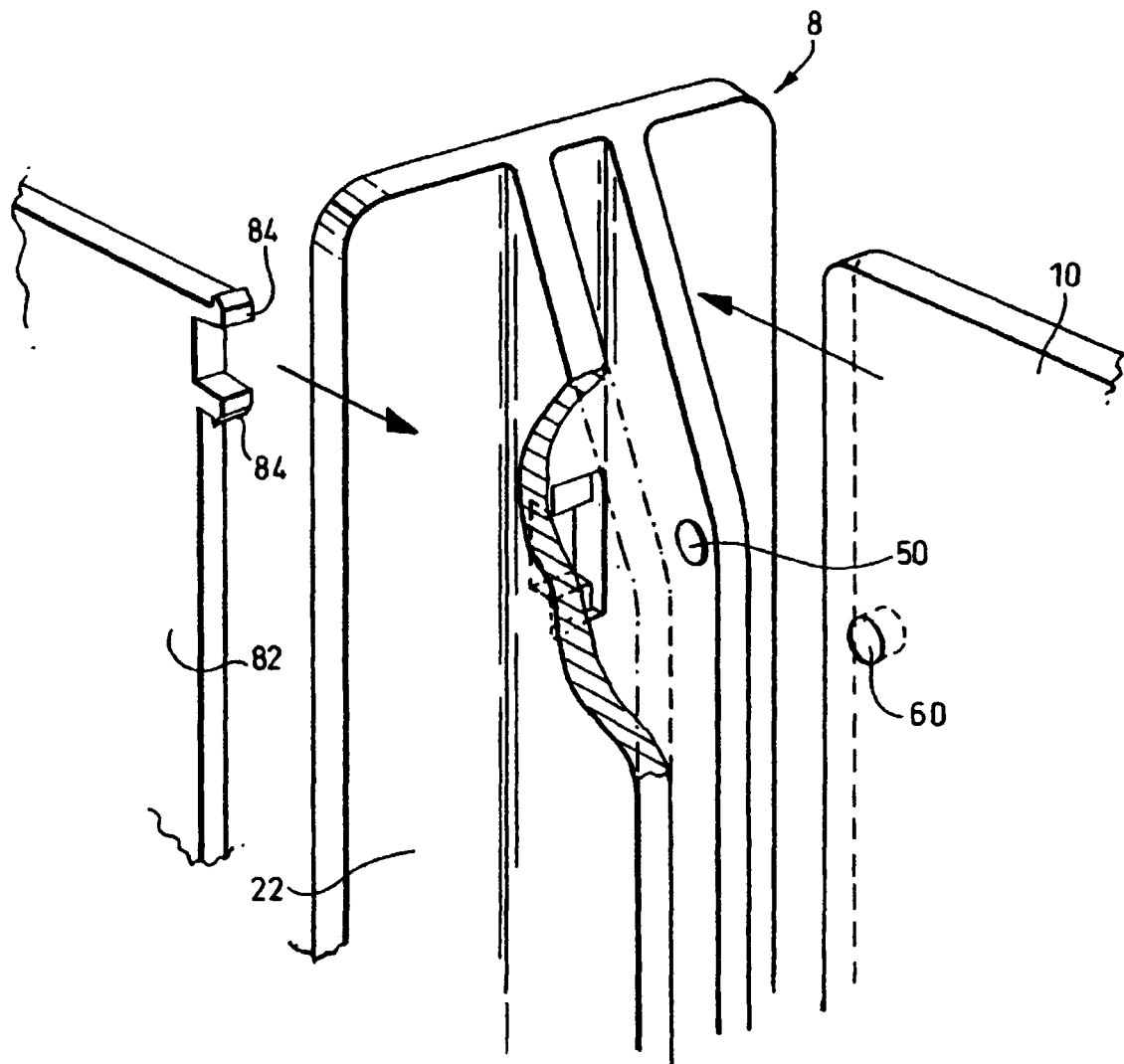


FIG. 7.