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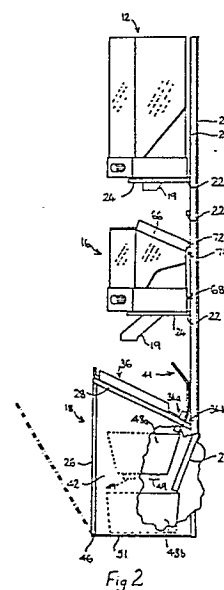
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54 Dispensing device and support therefor.

57 A dispensing apparatus for dispensing particulate or granular material comprises two upper dispensers (10,12) and two lower dispensers (14,16) located beneath the upper dispensers. Inclined trays (36) are positioned beneath the lower dispensers, and excess product falling from the lower dispensers onto the trays is directed by means of the trays and a further guide (41) into one of two receiving containers (48a).

The lids (58) of the lower dispensers form an inclined surface, and excess product falling from the upper dispensers (10,12) is directed by the lids, by elongate channel-section guides (25) and by the aforementioned guide (41) into lower receiving containers (48b).

Any excess material dispensed from any of the dispensers is thus directed and guided to a respective container, which is more hygienic and produces a better presentation of the products to be dispensed. More importantly, the excess product collected may be re-used, thus keeping shrinkage and wastage to a minimum.



Description

DISPENSING DEVICE AND SUPPORT THEREFOR.

The present invention relates to dispensing devices and supports therefor, and in particular, but not exclusively, to devices for dispensing nuts and/or dried fruit and supports therefor.

One known device for dispensing nuts, dried fruit and like bulk products is disclosed in GB 2190655A, which basically comprises a storage hopper and means for regulating the flow of product from the hopper through a chute situated below the regulating means. Such a device is very well liked by customers and shop-owners, since it is hygienic and also very convenient to operate.

However, one drawback of the device is that when a container, e.g. a bag, is placed beneath the chute, occasionally not all of the product is dispensed into the bag, for example, if the bag is removed too soon. This leads to some of the product falling onto the floor beneath the dispensing device. Not only is this unhygienic, but it looks unsightly and requires frequent cleaning. Moreover, the loss of product from the dispenser results in an increased price to the consumer. It is, of course, possible to position a receptacle beneath the chute to collect excess product, but such a receptacle also looks unsightly.

It is an object of the present invention to provide a dispensing device and a support therefor which overcome the aforementioned disadvantages.

In accordance with a first aspect of the present invention, there is provided apparatus for supporting a material dispenser, comprising an inclined, excess material-receiving surface and mounting means for mounting a material dispenser above the said inclined surface.

Preferably, there are means for directing the material received by the inclined surface towards a desired location, e.g. into a container.

In one embodiment, the support further comprises means for mounting a second material dispenser. The second material dispenser is preferably mounted below the first material dispenser, and preferably the inclined material-receiving surface forms a cover or lid of the lower material dispenser. There may also be an inclined receiving surface below the lower dispenser.

In accordance with a second aspect of the present invention, there is provided a dispensing apparatus comprising means for dispensing a particulate or granular material and an inclined material-receiving surface disposed beneath the dispensing means.

In one embodiment, the device comprises a second dispenser below the first dispenser. The lower dispenser may be provided with a cover or lid which also forms an inclined material-collecting surface. There may also be an inclined receiving surface below the lower dispenser.

Preferably, there are also means for directing the material received by the inclined surface towards a desired location, e.g. into a container.

In accordance with a third aspect of the present invention, there is provided a particulate material

dispensing apparatus comprising a plurality of particulate material dispensers, characterised in that a first dispenser is mounted above a second dispenser, the second dispenser being provided with an inclined lid to receive excess material dispensed from the first dispenser and the arrangement further comprising an inclined surface to receive excess material dispensed from the second dispenser.

The cover or lid is preferably provided with lateral flanges to guide material falling on the cover or lid.

By way of example only, a specific embodiment of the present invention will now be described, with reference to the accompanying drawings, in which:-

Fig.1 is a front elevation of an embodiment of dispensing device in accordance with the present invention, fitted with four dispensers;

Fig.2 is a side elevation of the dispensing device of Fig.1;

Fig.3 is an exploded view of one of the dispensers of the device of Fig.1; and

Fig.4 is an exploded perspective view of one portion of the device, in greater detail, showing two removable trays and a material guide in a removed position.

Referring firstly to Figs. 1 and 2, the dispensing device comprises two upper dispensers 10,12, two lower dispensers 14,16, a respective one situated vertically beneath each of the upper dispensers 10,12, and an excess product collection unit 18. Each dispenser is provided with a material dispensing chute 19. The dispensers are mounted on a support frame comprising two parallel vertical frame members 20 and four parallel horizontal frame members 22 extending between the vertical members. Four horizontal, parallel dispenser support arms 24 extend perpendicularly to the vertical and horizontal frame members 20,24 from the lowest and the highest horizontal frame members 22, and each dispenser is supported by two of the support arms 24.

Two elongate plastics channel section members 25 are secured between the vertical frame members 20, from the top of the frame members 20 downwards. The lowermost portion 27 of each of the channel section members is deformed to extend into the excess product collection unit 18.

The excess product collection unit 18 extends forwardly from the vertical frame members 20, and is disposed beneath the lower dispensers 14,16. As best seen in Fig.2, the unit 18 projects beyond the outermost point of the dispensers 10,12,14,16. The unit comprises the lowermost portions of the frame members 20, two further vertical frame members 26 positioned outwardly from the frame members 20, and two parallel inclined cross-members 28 extending between the vertical frame members 20 and the upper ends of the frame members 26, and inclined upwardly from the frame members 20 towards the frame members 26. A further horizontal cross-member 30 extends between the upper ends of the

vertical frame members 26.

An inclined, planar, metal top panel 32 is connected between the horizontal cross-member 30 and the inclined cross-members 28, and slopes downwardly towards the first vertical frame members 20. As best seen in Fig.4, an elongate gap 34 exists between the channel section members 25, which are attached to the frame members 20, and the lowermost edge of the top panel 32.

The top panel 32 is adapted to receive two removable, planar, transparent plastics covers 36 which are each provided with two upstanding side flanges 38 and an upstanding top flange 40. When the cover 36 is in position on the top panel 32, the gap 34 also exists between the lowermost edge of the cover 36 and the panelling 25.

A material guide 41 is also connected between the frame members 20, in the region of the gap 34, so that it lies between the lowermost edge of the top panel 32 and the channel section members 25. The guide comprises a central portion which is aligned with the frame members 20, and outwardly flaring upper and lower portions. The lower portion is also provided with two lateral, inwardly directed, upstanding flanges 43 and a central upstanding dividing flange 45. The lower portion extends into the collection unit 18. The guide is arranged such that a gap 34a exists between the guide and the top panel 32 and gap 34b exists between the guide and each of the elongate channel-section members 25.

The unit 18 is also provided with two metal side panels 42 and a hingedly mounted front panel 44, the latter being hingedly attached to the vertical frame members 26 by means of hinges 46. Two upper receiving containers 48a are releasably positioned within the unit 18 on supports 49, to receive items directed into them by the respective sides of the inclined lower portion of the guide 41. Two lower receiving containers 48b are also releasably positioned within the unit, on a planar base 51, and are adapted to receive items directed into them by the inclined portions of the respective channel section members 25.

One of the lower dispensers 14 is illustrated in Fig.3. The container is similar to that disclosed in GB 2190655A, and comprises a hopper 50, which is generally hexagonal in cross-section and which is formed from transparent plastics material. The hopper is releasably mounted on a dispensing base 52, and by rotating an operating handle 54 material held in the hopper may be dispensed from the dispenser 14. The operation of the dispensers need not be described further, and details of the dispensers may be found in the aforementioned reference. All that is necessary for the understanding of the present invention is that material may be dispensed from the base of the dispenser.

The upper edges of two parallel, opposed side faces 56 of the hopper slope down towards the rear of the dispenser. As best seen in Fig.3, a lid 58 is adapted to fit releasably over the open upper end of the hopper. The lid is also made from transparent plastics material and comprises a first planar portion 60 adapted to fit over the rear of the open end of the hopper and a second planar portion 62, inclined to

the first portion 60, adapted to fit over the front of the open end of the hopper. When the lid is in position on the hopper, it contacts the upper edge of the hopper about substantially the whole periphery of its upper edge, thereby effectively preventing the inadvertent entry of material into the hopper. Also, the first planar portion 60 of the lid slopes downwardly to the rear, as seen in Fig.2. The lid is held in place by means of four lugs 64 positioned on its undersurface, and which are adapted to abut the inner surface of the hopper. The lid is also provided with upstanding lateral flanges 66 along its rearwardly-sloping edges, and the ends of the flanges remote from the second planar portion 62 converge slightly.

As may be seen in Fig.2, the dispensers 14,16 are separated from the rear panelling 34 by a gap 68. It will also be seen that the corners 72 of the lid flanges 66 abut the panelling 25, thereby leaving a further gap 74 between the lower edge 76 of each lid 58 and its respective channel section member 25 positioned behind.

In use, a customer selects a product and places a container (e.g. a bag or tub) beneath the appropriate chute. The appropriate knob (e.g.54) is then turned to dispense the material into the container. If any dispensed material is not correctly directed into the container, it will fall downwardly.

If such material is dispensed from one of the upper dispensers 10,12, it will fall onto the lid 58 of the dispenser located below. Since the surface of the lid 58 is inclined downwardly, it will be directed down the lid and through the gap 72 between the lid and the respective channel section member 25. The material will then fall vertically downwardly through the gap 34b between the material guide 41 and the channel section member 25. Any material which does not fall directly vertically will contact the upper flared portion of the guide and will thereby be directed between the guide 41 and the member 25. The guiding of the material is aided by the flanges 66 of the lid 58 and by the lateral flanges which form part of the channel section member and the material is finally directed into a lower container 48b. Thus, the excess product from a dispenser is collected in one container 48b only, and is not contaminated with any excess product from the other dispenser.

If the material is dispensed from one of the lower dispensers 14,16, it will fall onto a respective one of the inclined covers 36, which will direct it through the gap 34a between the cover 36 and the guide 41, aided by the flanges 38,40. The central upstanding flange 45 on the guide ensures that the material from each lower dispenser is kept separate from that dispensed from the other.

In either case, once material has fallen through the gap 34 it is directed by the inwardly-inclined portion of the guide 41 into a respective one of the upper containers 48a which is housed within the excess product collection unit 18. Thus, any material which is inadvertently dispensed will make its way into a respective hidden container 48, and thus does not look unsightly.

Moreover, the inclined covers 36, the lids 58 and the guide 41 may be removed and cleaned easily,

improving the hygiene of the device. Furthermore, the excess product from each dispenser is collected in a separate container, so that the excess products from the dispensers do not contaminate each other. Thus, the excess products may be re-loaded into the appropriate container, if desired. Access to the container 48 is gained via the hinged cover 44, whose open position is shown in chain dot in Fig.2.

Claims

1. Apparatus for supporting a material dispenser, comprising an inclined, excess material-receiving surface (36) and mounting means (24) for mounting a material dispenser (14) above the said inclined surface (36).

2. Apparatus as claimed in claim 1, comprising mounting means for mounting a plurality of material dispensers (10, 12, 14, 16).

3. Apparatus as claimed in claim 1 or claim 2, comprising mounting means for mounting a second material dispenser (14) below the first material dispenser (10).

4. Apparatus as claimed in claim 3, wherein the inclined, excess material-receiving surface (60) adapted to receive material from the upper dispenser (10) comprises a cover or lid (58) of the lower material dispenser (14).

5. Apparatus as claimed in claim 4, comprising a further inclined material-receiving surface (36) below the lower dispenser (14).

6. A dispensing apparatus comprising means (10, 14) for dispensing a particulate or granular material, and an inclined, excess material-receiving surface (60, 36) disposed beneath the dispensing means (10, 14).

7. Apparatus as claimed in claim 6, comprising a second dispensing means (14) located below the first dispensing means (10).

8. Apparatus as claimed in claim 7, wherein the inclined material-receiving surface (60) for the upper dispenser comprises a cover or lid (58) of the lower dispenser (14).

9. Apparatus as claimed in claim 8, comprising a further inclined receiving surface (36) below the lower dispensing means (14).

10. Apparatus as claimed in any of claims 1 to 9, further comprising directing means (25, 41) for directing the excess material received on the or each inclined surface (36, 60) towards a desired location.

11. Apparatus as claimed in claim 10, further comprising means (18) for mounting a container (48a) for collecting the excess material received on, and directed by, the or each inclined surface (36, 60).

12. Apparatus as claimed in claim 10 or claim 11, wherein the directing means separates excess material received from upper and lower (60, 36) inclined surfaces.

13. Apparatus as claimed in claim 12, wherein the directing means directs excess material from the upper and lower inclined surfaces into separate, respective containers (48b, 48a).

14. Apparatus as claimed in any of claims 10 to 13, wherein the directing means comprises a channel-section member (25) for directing excess material received from the inclined surface.

15. Apparatus as claimed in any of the preceding claims, comprising means for mounting two dispensers (14, 16) side-by-side.

16. Apparatus as claimed in claim 15, comprising a respective inclined material-receiving surface (16) for each of the dispensers.

17. A particulate material dispensing apparatus comprising a plurality of particulate material dispensers (10, 12, 14, 16), characterised in that a first dispenser (10) is mounted above a second dispenser (14), the second dispenser being provided with an inclined lid (60) to receive excess material dispensed from the first dispenser and the arrangement further comprising an inclined surface (36) to receive excess material dispensed from the second dispenser.

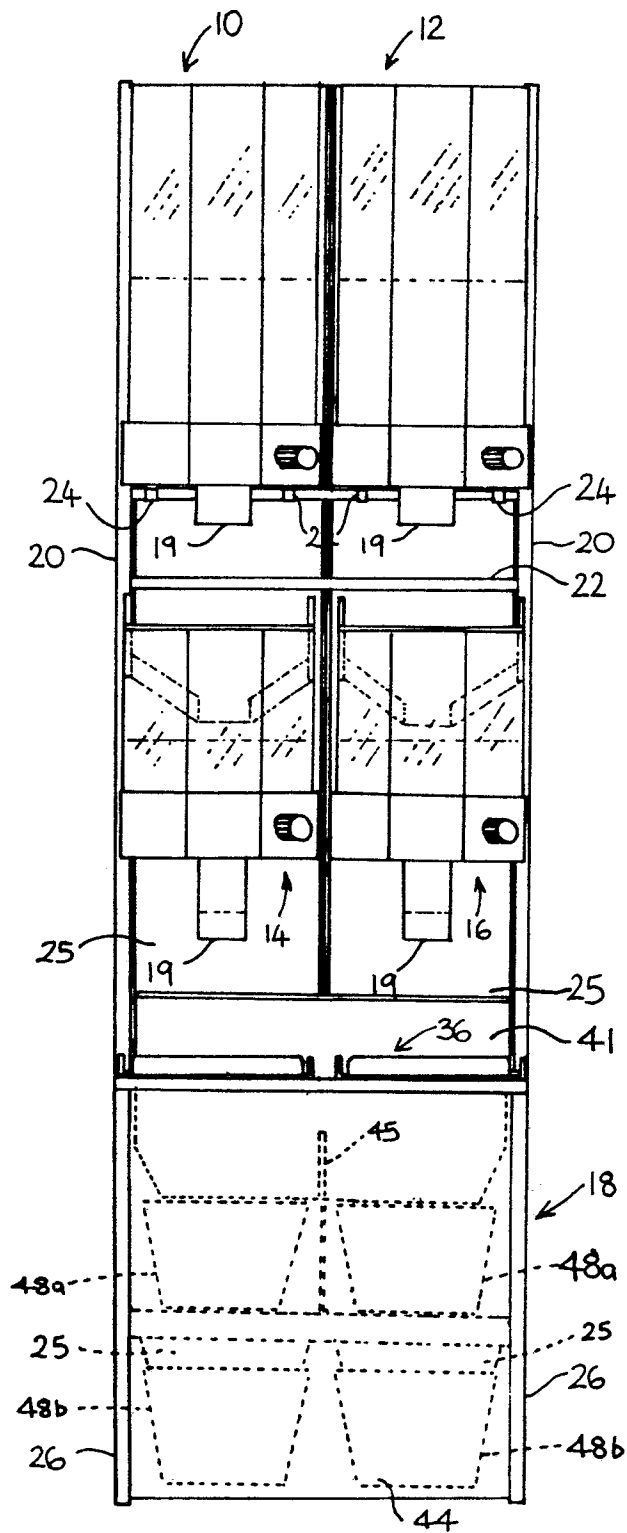


Fig.1

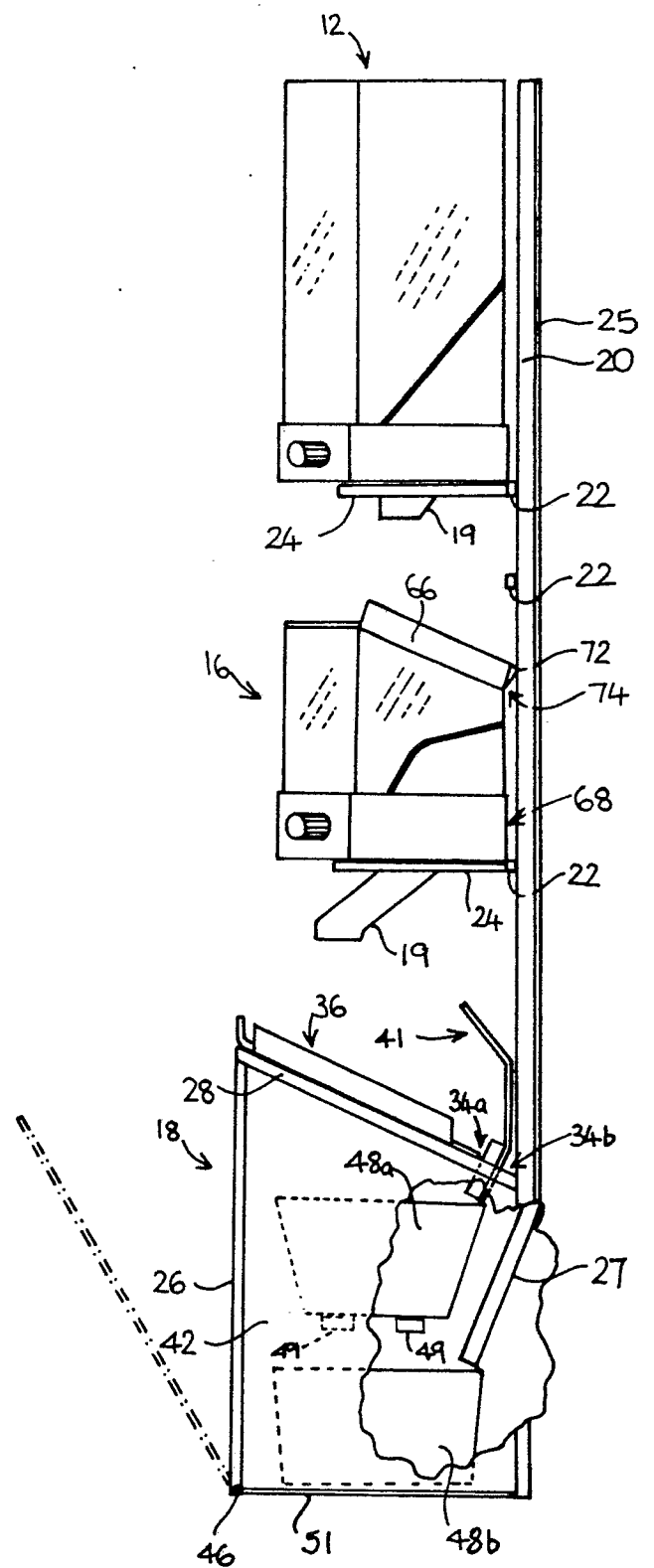
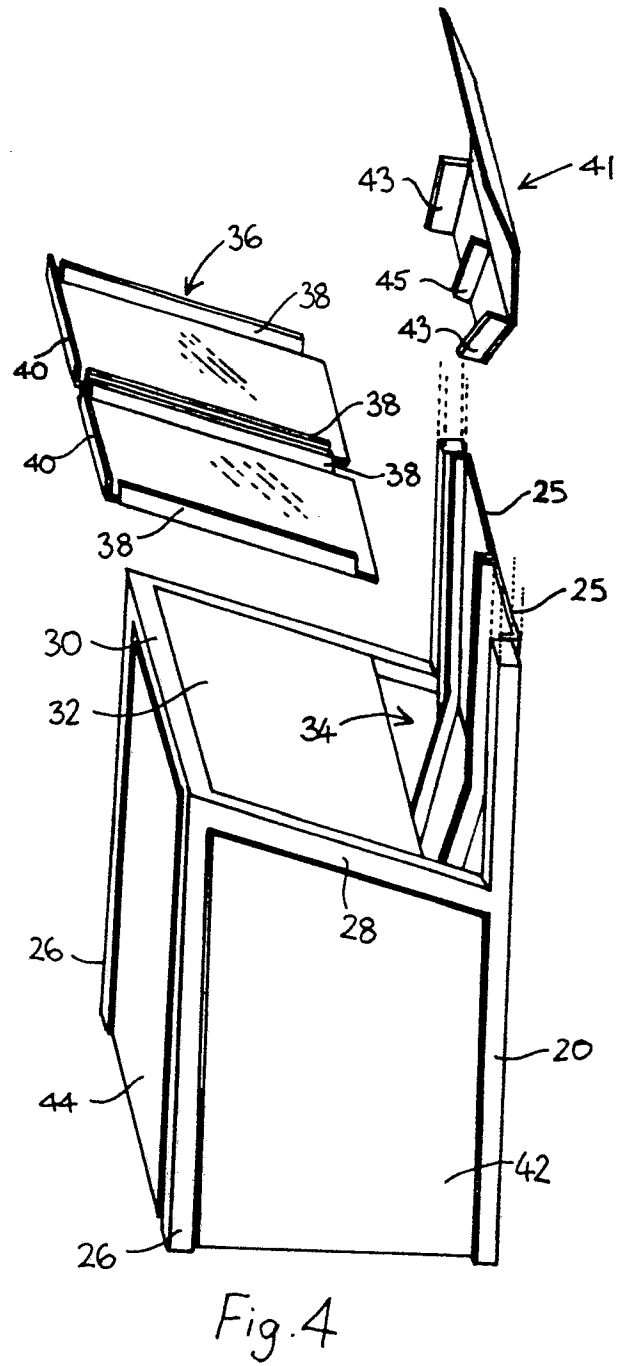
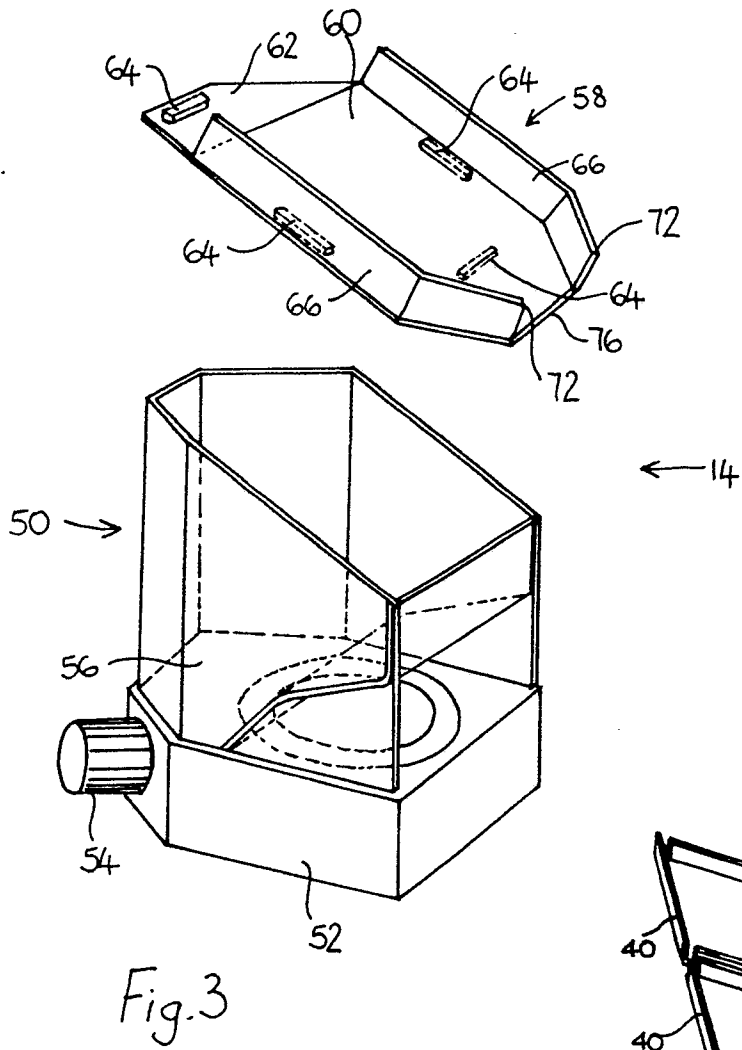


Fig.2





DOCUMENTS CONSIDERED TO BE RELEVANT			EP 89304384.4
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	<u>US - A - 1 727 063</u> (HULTGREN) * Page 1, lines 75-78,91-98; page 1, line 104 - page 2, line 19; fig. 1,2 *	1,2, 15,16	A 47 F 1/02
A	--	6,10, 11,12	
A	<u>US - A - 3 610 482</u> (STEENBURGH) * Column 2, lines 34-42; column 2, line 69 - column 3, line 6; fig. 3 *	1,6, 10,11	
A	<u>DE - B - 1 204 791</u> (NESTIER CORPORATION). * Column 3, lines 37-40; fig. 2,3 *	3,7	

			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			A 47 F 1/00 A 47 F 3/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 24-07-1989	Examiner VELINSKY-HUBER
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	