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(54) **Apparatus for closing an opening in a container**

(57) Apparatus for closing an opening in a container 17. The apparatus includes a body 1 arranged to close the opening in a container. The body may define a cavity for receiving the container 12. The body includes an ap-

erture 6 which may be closed by a lid 7. The body 1 is provided with a handle 16. Outer 3 and inner 4 peripheral walls depend from a top portion 2 of the body 1. The walls 3,4 together define a channel for receiving part of the container 17.

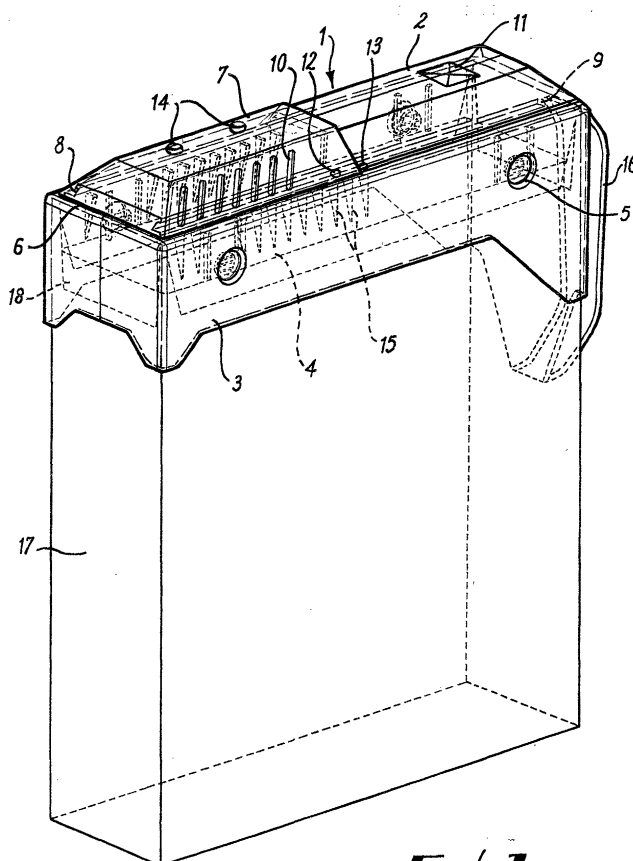


FIG. 1

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Description

[0001] The present invention relates to apparatus for closing an opening in a container, particularly but not exclusively a cereal box.

[0002] Breakfast cereal is usually supplied in a sealed plastic bag disposed in a cardboard box. To dispense cereal the cardboard box is opened by folding back flaps forming the top of the box and the top of the plastic bag inside opened also. The cereal may then be poured out of the plastic bag through the opening in the top of the box. When a desired amount of cereal has been dispensed and it is desired to retain the remainder for consumption at a later time the plastic bag is usually rolled down inside the box in an attempt to seal it and the flaps forming the top of the box closed and secured by inserting a tab on one flap into a slit formed in another flap.

[0003] This is rather unsatisfactory. Simply rolling down the top of the plastic bag does not always suffice to prevent escape of cereal from the bag. Also, the bag and flaps do not provide anything like an airtight seal. When cereal is stored in a non-airtight container its quality gradually deteriorates.

[0004] The present invention has been made in consideration of these problems which it aims to eliminate, or at least reduce.

[0005] According to the present invention there is provided apparatus for closing an opening in a container comprising a body arranged to close the opening in a container, the body defining an aperture through which material may pass into and/or out of the container, and a means for closing the aperture.

[0006] The apparatus may be used to close an aperture in a container, for example the opening at the top of the cereal box, and material, for example cereal, can subsequently be dispensed when required through the aperture in the body of the apparatus. This aperture can be closed using the means for closing, when desired. Thus, the apparatus can be used to replace any inadequate means for closing a container.

[0007] Preferably the apparatus comprises means for effecting a seal between the body and container. Preferably the seal is substantially airtight. This is advantageous where a container is used to store foodstuffs.

[0008] In one embodiment the body defines a cavity for receiving at least part of the container. The cavity may be defined, at least in part, by a peripheral wall arranged, in use, to extend around an outside surface of a container received into the cavity. A second, inner, peripheral wall may extend inside, generally parallel to and spaced apart from the outer wall to define a channel therebetween for receiving a part of a container. The channel is preferably operative to effect a seal between the apparatus and part of a container received into the channel. The channel may also serve to grip a container received into the cavity.

[0009] In addition, other means for gripping a container may be provided. Where a channel is provided for

receiving part of a container the means for gripping may be disposed in the channel. In one embodiment the means for gripping comprises teeth disposed in a channel.

5 **[0010]** Provision of means for gripping a container facilitates handling of the container by handling the body of the apparatus.

[0011] Preferably, the means for closing the aperture comprises a lid. Preferably the lid is adapted to close the aperture in an airtight manner. The lid may be slidably mounted on the body of the apparatus for movement between open and closed positions.

10 **[0012]** The apparatus may also comprise a handle. The handle may be a loop handle formed on the body. This enables the apparatus and possibly any container with which it is used to be easily handled.

[0013] Preferably, the body is transparent or partially transparent. This enables the container to be seen through the body.

20 **[0014]** The apparatus may include provision for releasably mounting a decorative fitting.

[0015] The apparatus may comprise a means for generating a sound, for example an electronic circuit and loud speaker. This is preferably arranged to generate a sound when the lid is moved from the closed position.

25 **[0016]** Preferably, the apparatus is adapted to be used with a cereal box.

[0017] The apparatus may be adjustable to enable it to accommodate different sizes of container.

30 **[0018]** The body of the apparatus may comprise means for releasably mounting a container of moisture absorbent material. Such a material can absorb moisture from the inside of a container being closed by the apparatus, preserving the condition of a dry foodstuff, such as cereal, inside the container.

35 **[0019]** In order that the invention may be more clearly understood embodiments thereof will now be described, by way of example, with reference to the accompanying drawings of which:

40 Figure 1 shows a perspective view of apparatus according to the invention fitted on a breakfast cereal box and with the lid of the apparatus in a closed position;

45 Figure 2 shows a similar view to Figure 1 but with the lid in an open position;

Figure 3 shows a perspective view of the lid of the apparatus of Figures 1 and 2 with a decorative fitting fitted thereto;

50 Figure 4 shows a similar view to Figure 1 of an alternative embodiment of apparatus according to the invention; and

Figure 5 shows a part cut-away part-cross-sectional view of a possible addition to an inside surface of the body of the apparatus of either

55 Figures 1 to 3 or 4.

[0020] In the drawings hidden detail is shown by faint/

broken lines.

[0021] Referring to Figures 1 and 2 the apparatus comprises a body 1 moulded from a tinted transparent food grade plastics material, for example polypropylene.

[0022] The body 1 comprises a top portion 2 with a depending outer peripheral wall 3 which, together, define a cavity. The top portion 2 is generally rectangular in shape.

[0023] A second, inner, peripheral wall 4 is disposed inside the outer peripheral wall 3. The inner peripheral wall 4 is substantially parallel to and spaced apart from the outer peripheral wall 3 to define therebetween a channel. Gripping means 5, the purpose of which are described further below are disposed opposite one another at spaced apart positions on the outside of the inner peripheral wall 4 and on the inside of the outer peripheral wall 3 so that they are directed towards each other in the channel.

[0024] The top portion 2 of the body 1 includes an aperture 6 with an associated lid 7.

[0025] The lid 7 is also moulded from a plastics material and is slidably mounted on the top portion 2 of the body 1 for movement between a closed position as, shown in Figure 1, in which the lid 7 sealingly closes the aperture 6 in a substantially airtight manner and an open position, shown in Figure 2, in which the aperture 6 is open.

[0026] The lid 7 is mounted on the body 1 by means of opposed formations 8 which cooperate with channels 9 formed on opposite sides respectively of the top portion 2 of the body 1. A number of spaced apart substantially parallel ribs 10 are formed on opposite sides of the lid 7 to facilitate gripping of the lid 7 by a user.

[0027] In an alternative embodiment a pivotally mounted lid is provided.

[0028] Disposed on the body is an electronic circuit and loud speaker 11. The circuit includes a magnetically operated switch 12 and the lid 7 includes a magnet 13. The magnet 12 and switch 13 are positioned relative to each other so that the switch 13 is operated by the magnet 12 when the lid 7 is moved from the closed position. This causes the electronic circuit to play prerecorded sounds over the loud speaker.

[0029] Two retaining posts 14 are formed on the top of the lid 7, to receive and support a decorative snap on fitting, as described further below.

[0030] Depending from opposite lateral sides of the aperture 6 are a plurality of spaced apart fingers 15, whose function is described further below.

[0031] A loop handle 16 is formed on the outside of the peripheral wall remote from the aperture 6.

[0032] The apparatus is intended for use with a cardboard cereal box 17. The cereal box 17 is opened in the usual way, by opening flaps 18 closing an aperture in the top of the box. Any inner bag containing cereal is then also opened.

[0033] The flaps 18 are then either folded outwards so that they lie adjacent the outside of the box 17 or,

preferably, inwards so that they lie adjacent the inside of the box 17. When folded inwards it is desirable, although not essential, that the flaps 18 are arranged to extend into any inner bag in the box to assist in holding the bag open. The apparatus is then fitted onto the box 17 so that the top of the box 17 is received into the cavity defined in the body of the apparatus 1, with part of the box extending into the channel defined between the outer 3 and inner 4 peripheral walls, so that portions of the box are received between the opposed gripping means 5.

[0034] The size of the channel between the outer 3 and inner 4 peripheral walls is chosen so that the double thickness of card around the top of the box 17 (provided by virtue of the folded flaps 18) is tightly received into the channel with a snug fit to form a substantially airtight seal between the two peripheral walls 3,4 and the box 17.

[0035] Additionally, the portions of the box 17 received between opposed gripping means 5 will be gripped by the gripping means 5, firmly holding the box in engagement with the body 1. The gripping means 5 comprise dogtooth formations or barbs directed so that a box 17 may be easily received into the channel between the gripping means, but is more difficult to remove.

[0036] In another embodiment the gripping means may be formed from a resilient and/or high friction material such as rubber. In a further embodiment the gripping means may comprise a resiliently biased element operative in conjunction with another element to grip matter received between the two elements.

[0037] The contents of the cereal box 17 or an inner bag therein may now be conveniently poured out through the aperture 6 using the handle 16 to hold the box 17. Since the box 17 is retained on the body 1 by the peripheral walls 3,4 and gripping means 5 the handle 16 may be used to manipulate the box 17. The fingers 15 act to guide the contents of the box 17 towards the aperture 6 to facilitate pouring of the contents through the aperture 6. Where an inner bag is provided the fingers 15 may help to reduce the likelihood of cereal becoming disposed between the inner bag and box 17.

[0038] In one embodiment the fingers 15 are arranged so that they may be caused to extend into an opening in any inner bag disposed in the box 17. The fingers 15 thus serve to ensure that an opening in any inner bag 15 retained in the region of the aperture 6.

[0039] Obviously, to dispense cereal the lid 7 must be in the open position. When sufficient cereal has been dispensed the aperture 6 may be closed with the lid 7, to effectively seal in the contents of the box 17 with a substantially airtight seal, maintaining freshness of cereal in the box.

[0040] When the lid 7 is open the electronic circuit 11 causes a sound to be emitted. This provides entertainment as well as a useful indication that the lid 7 is open, reducing the risk of the lid 7 being inadvertently left open

and allowing cereal in the box 17 to deteriorate.

[0041] Figure 3 shows a decorative fitting 18 releasably mounted on a lid 7 of the type of apparatus shown in Figures 1 and 2. The fitting 18 represents a character which may be a popular cartoon character or be associated with a brand of cereal with which the apparatus is intended to be used, but could be any suitable model. The figure enhances the appeal of the apparatus, especially for children and can provide advertising.

[0042] In one embodiment the sound emitted by the electronic circuit 11 is associated with the figure and may simulate speech of the figure.

[0043] Figure 4 shows another embodiment of apparatus according to the invention. The same reference numerals are used in this Figure as in Figures 1 and 2 to indicate parts of the same description.

[0044] The embodiment of Figure 4 enables boxes 17 of different widths to be accommodated. In this embodiment opposed fixed walls 19 depend from opposite sides only of the body 1. Lateral outer 3 and inner 4 walls are each provided by two separate side components 20,21 which are slidably mounted between the fixed end walls 19 so that they may be moved relative to one another to vary the spacing between the sides of the apparatus defined by the components. This enables boxes of different widths to be received into a channel defined between the inner 3 and outer 4 walls.

[0045] The two components 20,21 are resiliently biased apart by means of springs 22 disposed in sleeves 23 formed on the inside surface of the two components. Stops (not shown) are provided to limit the movement of the two components 20,21 relative to the end walls 19 to ensure that the components remain slidingly engaged with the end walls 19.

[0046] In use the two components 20,21 are urged towards each other against the action of the spring 22 by a user to a sufficient extent to enable the apparatus to be fitted onto a box 17. The side components 20,21 are then released. The action of the springs 22 will then urge the components apart, but their movement will be restricted by the box. The result is that the apparatus will hold the box 17. This removes the need for the additional gripping means 5 of the embodiment of Figures 1 and 2, such means could nevertheless still be provided.

[0047] Figure 5 shows a possible addition to a surface 24 of the inside of the body 1 of the apparatus of either Figures 1 to 3 or 4. A substantially circular wall 25 is mounted on, or formed integrally with, the surface 24. The wall 25 includes a number of slots 26.

[0048] The wall 25 is arranged to releasably receive a substantially cylindrical container 27 of a moisture absorbing material, such as silica gel. Opposite ends of the container 27 are perforated to allow air to circulate through the container. A number of raised pegs 28 are formed on the surface 24 within the wall 25 to create a space between the container 27 and the surface 24, to allow air to circulate through the perforations in the surface of the container 27 facing the surface 24, via the

slots 26.

[0049] In use the container 27 is mounted within the wall 25 as shown. When the body is used to close a container the container 27 is exposed to the inside of the container being closed so that moisture in the air inside the container can be absorbed by the material inside the container 27, helping to preserve foodstuff in the container. When material inside container 27 has absorbed moisture the container 27 may be replaced or removed for regeneration, for example by placing the container in an oven to dry out the material it contains.

[0050] The apparatus enables a cereal or other similarly shaped box to be easily and repeatedly opened and resealed in a substantially airtight manner, overcoming the difficulties and inconvenience in trying to reclose a cereal box.

[0051] The adjustable embodiment of Figure 4 allows a single apparatus to be used in relation to a number of different sizes of box.

[0052] The above embodiments are described by way of example only. Many modifications are possible without departing from the invention.

Claims

1. Apparatus for closing an opening in a container comprising a body arranged to close the opening in the container, the body defining an aperture to allow material to pass out of and/or into the container and a means for closing the aperture.
2. Apparatus as claimed in claim 1 or 2 comprising means for effecting a seal between the body and the container.
3. Apparatus as claimed in either claim 1 or 2 wherein the body defines a cavity for receiving at least part of the container.
4. Apparatus as claimed in claim 3, wherein the cavity is defined, at least in part, by an outer peripheral wall arranged, in use, to extend around an outside surface of a container received into the cavity, and wherein a second, inner, wall extends inside, generally parallel to and spaced apart from the outer wall to define a channel therebetween for receiving a part of the container when in use.
5. Apparatus as claimed in claim 3, when appendant to claim 2, wherein the means for effecting a seal comprise a seal disposed on an inside surface of the outer peripheral wall.
6. Apparatus as claimed in any preceding claim, comprising means for gripping the container.
7. Apparatus as claimed in claim 6, when appendant

either directly or indirectly to claim 4, wherein the means for gripping comprises gripping teeth disposed in the channel.

8. Apparatus as claimed in any preceding claim, wherein the means for closing the aperture comprises a lid which is slidably mounted on the body for movement between open and closed positions. 5
9. Apparatus as claimed in claim 8 comprising means for generating a sound arranged to generate a sound when the lid is moved from the closed position. 10
10. Apparatus as claimed in any preceding claim comprising means for releasably mounting a decorative fitting. 15
11. Apparatus as claimed in any preceding claim comprising a handle. 20
12. Apparatus as claimed in any preceding claim, wherein the body is transparent or partially transparent. 25
13. Apparatus as claimed in any preceding claim which is adjustable, to enable it to be used with different sizes of container.
14. Apparatus as claimed in any preceding claim, wherein a plurality of spaced apart fingers depend from at least part of a periphery of the aperture. 30
15. Apparatus as claimed in any preceding claim comprising means for releasably mounting a container of moisture absorbent material. 35
16. A cereal box fitted with apparatus as claimed in any preceding claim. 40

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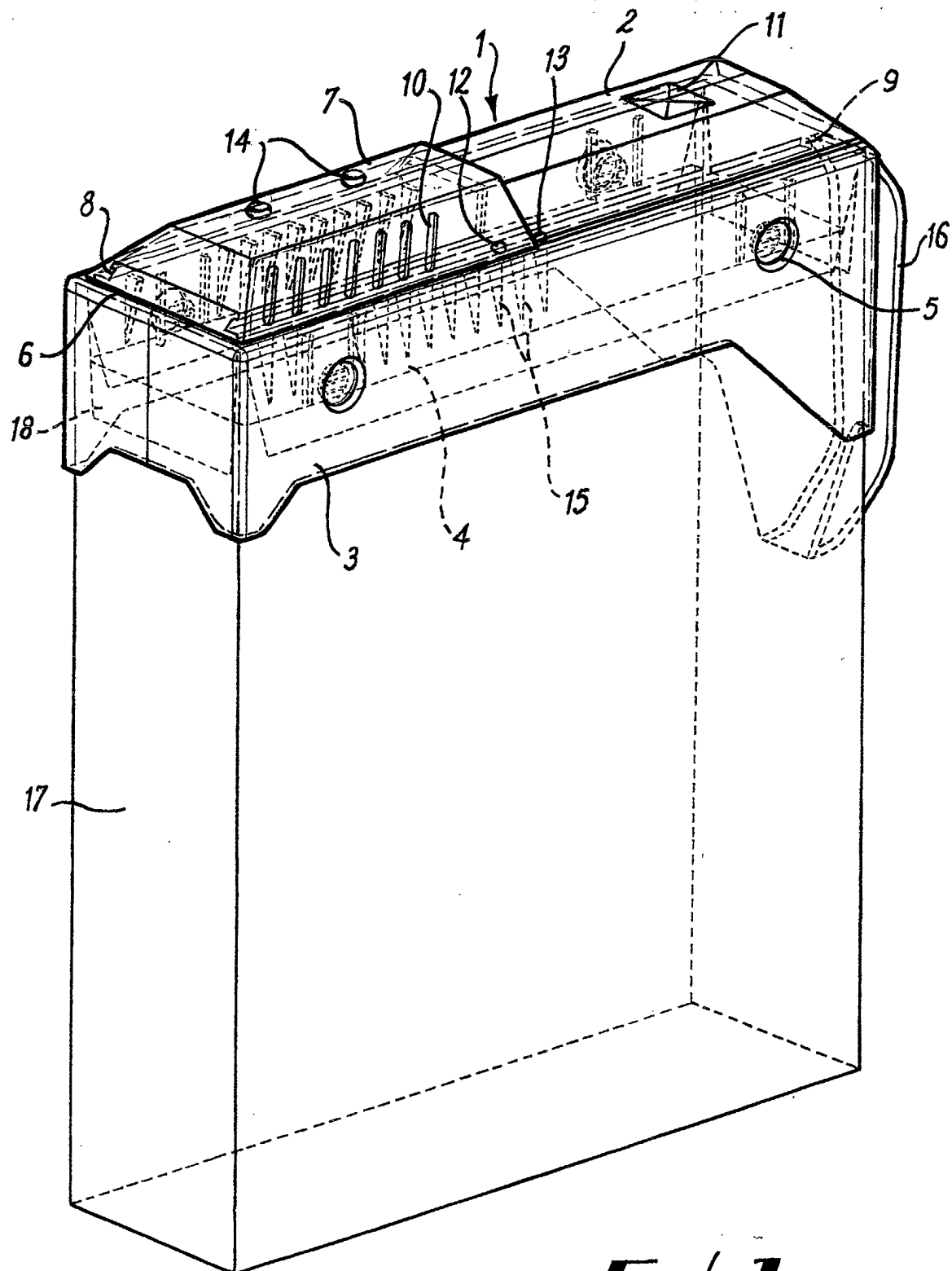


Fig. 1

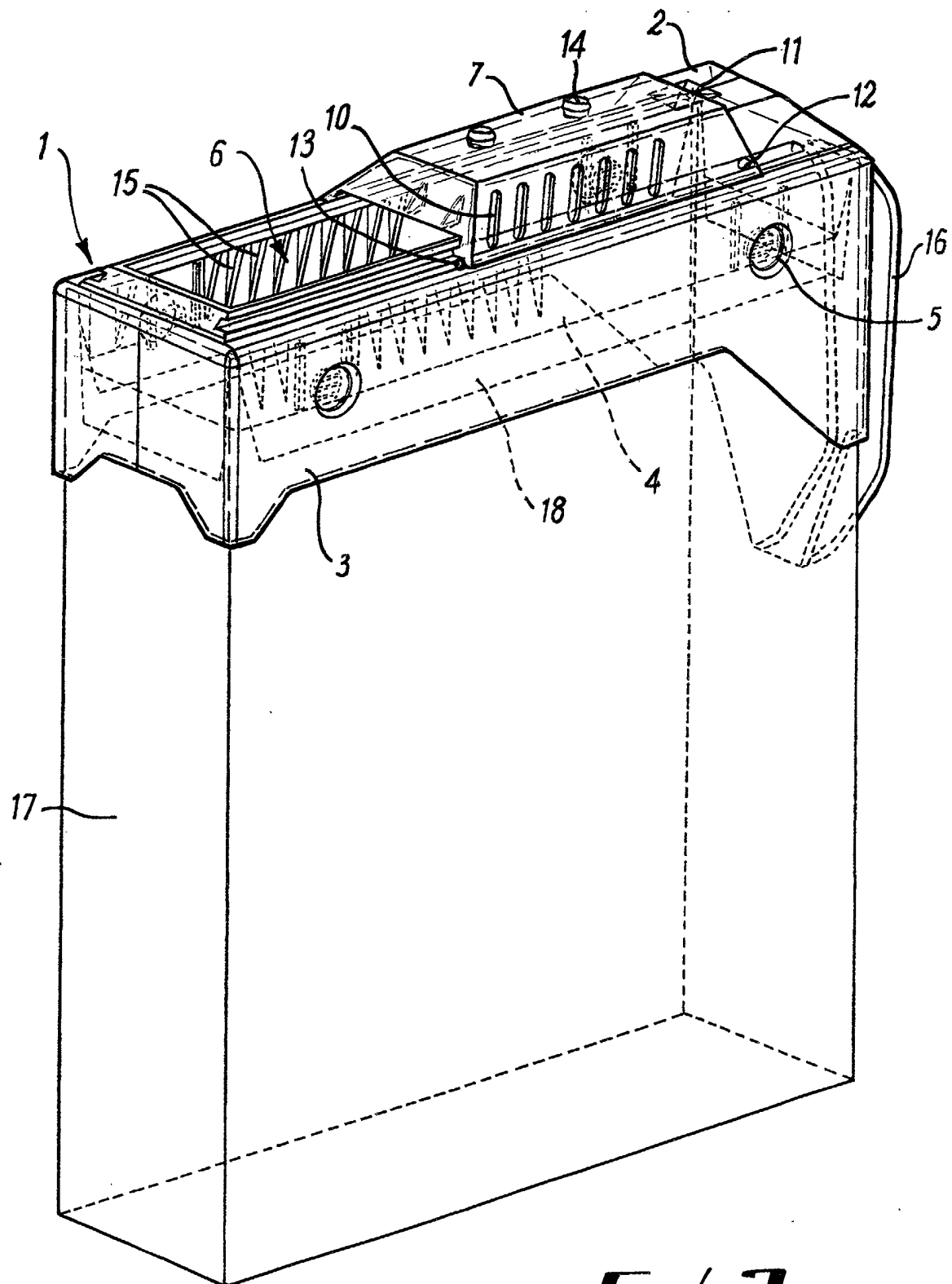
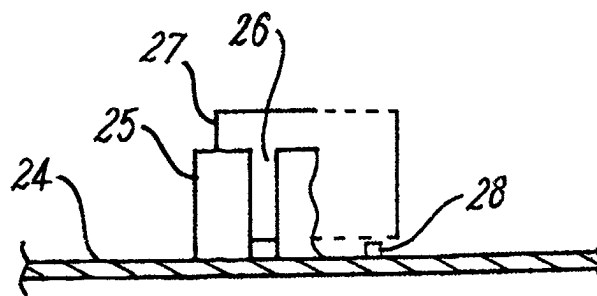
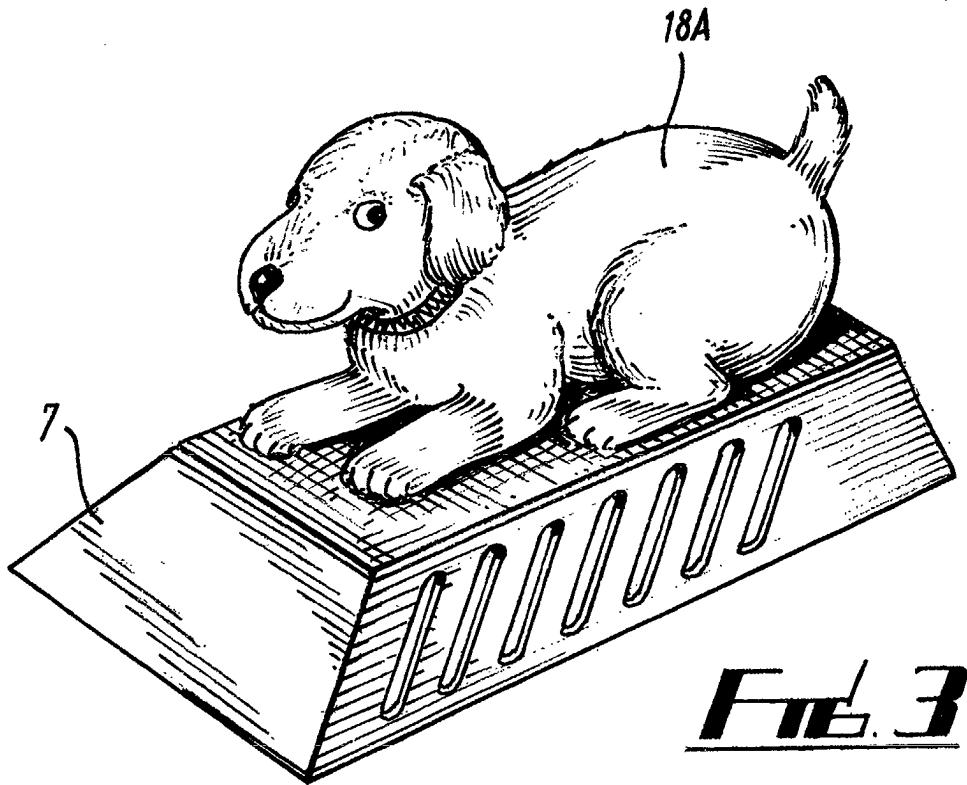


Fig. 2



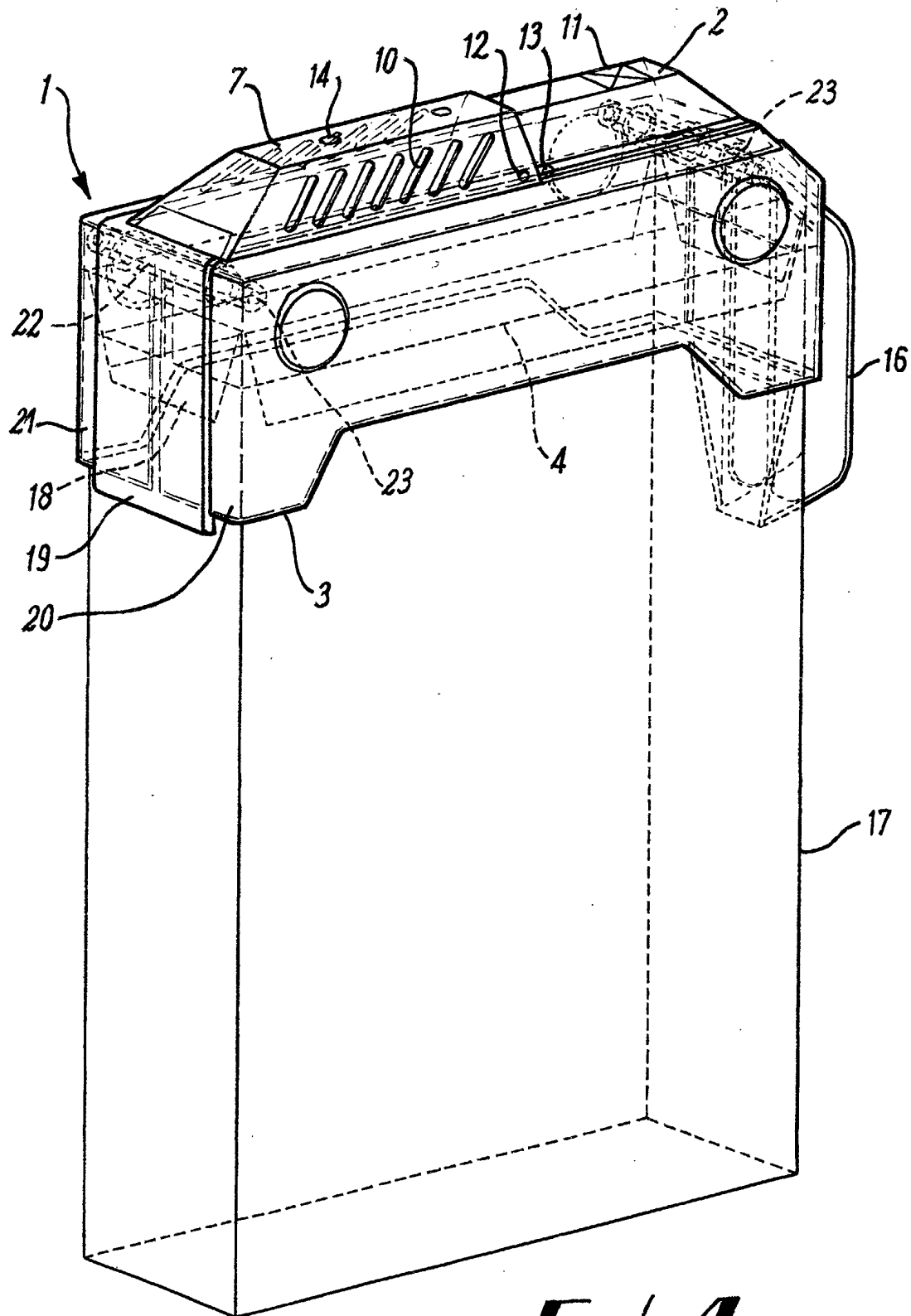


Fig. 4



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Application Number
EP 02 25 3670

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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 13 March 2003	Examiner Kamerbeek, M
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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