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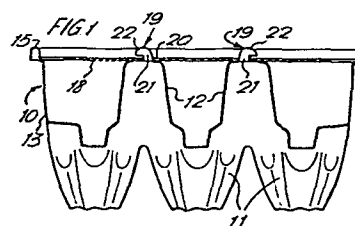
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54 **Packaging containers.**

57 The invention relates to a packaging container for eggs, fruit or other articles, or may be another container having a separate lid thereon.

A packaging container has a base portion (10) formed of plastics material having a surrounding wall (13), a separate lid (18;33), and retaining means (19;30) for holding the lid on the base portion. The retaining means comprises at least one projection (19;30) moulded integrally with the base portion, the or each projection being of hook-like configuration having a stem (21) merging into a lug (22;31) extending substantially perpendicularly thereto for interengagement with the lid.

The container may be an egg box.



PACKAGING CONTAINERS

10           This invention relates to packaging containers for  
eggs, fruit or other articles.

          It is known to provide an egg box comprising a  
base portion formed of plastics material having egg  
receiving depressions and a height which is greater than  
15   that of the eggs, and a flat cardboard lid supported on  
pillars within the base portion. The lid is clipped to  
the pillars to hold it in place after the box has been  
filled with eggs.

          The lid retaining means are tags in the lid which  
20   are depressed through holes in the upper surfaces of the  
pillars, each tag having a lip which engages beneath the  
upper surface of the respective pillar. The lid may be  
removed by pulling the tags from within the pillars.  
However, such action tends to destroy the tag sufficiently  
25   to prevent the lid being reclosable.

According to the invention there is provided a packaging container comprising a base portion formed of plastics material having a surrounding wall, a separate lid, and retaining means for holding the lid on the base portion, the retaining means comprising at least one projection moulded integrally with the base portion, the or each projection being of hook-like configuration having a stem merging into a lug extending substantially perpendicularly thereto for interengagement with the lid.

The or each projection is preferably moulded with an upright hollow stem and a hollow lug.

Preferably the lug of the or each projection, in use, overlies the outer, e.g. the upper, surface of the lid.

It is also preferred that the container is a deep-walled container, in which the surrounding wall of the base portion has a height which is greater than the article or articles to be packaged, and the lid is a substantially flat lid.

In one embodiment of the invention, the base portion has at least one pair of lid supporting pillars, and the retaining means comprise one said projection upstanding from each pillar and aligned apertures in the lid through which the lug of each projection may pass.

Preferably each aperture is D-shaped or crescent shaped.

It is also preferred that the lugs of the projections

of the or each pair of pillars face in opposite directions, preferably away from each other.

In another embodiment of the invention, the or each projection of the retaining means is incorporated into the surrounding wall of the base portion. For example, the container may be generally rectangular and have a projection provided at each corner of the base portion, the lug of each projection extending inwardly. Also the or each projection may be provided in combination with means for strengthening the surrounding wall and/or a ledge beneath the lug of the or each projection to define a gap therebetween into which the edge of the lid may fit. As before, the base portion may have lid supporting pillars.

Preferably the lid is provided with at least one finger-engaging aperture or cut-out or pull flap as means for facilitating the removal of the lid. The container may be generally rectangular and the or each aperture, cut-out or pull flap may be provided at one side or end of the lid. It has been found that a side aperture, cut-out or pull flap can result in a smoother and thus easier removal of the lid.

The lid may be provided with one or more side and/or end flaps which fit inside the base portion.

The base portion may have article receiving depressions.

The container may be suitable for packaging eggs, fruit or other articles. Alternatively, the container  
5 may be any other container having a separate lid thereon, but preferably a deep-walled container with a substantially flat lid.

By way of example, specific embodiments in accordance with the invention will be described with reference to  
10 the accompanying drawings in which:-

Figure 1 is a longitudinal cross-section through a container for packaging six eggs, along line 1-1 in Figure 2;

Figure 2 is a plan view of the central part of the  
15 container of Figure 1;

Figure 3 is a detail of part of the lid of the container of Figure 1;

Figure 4 is a plan view of another container;

Figure 5 is a section along line 5-5 in Figure 4;

20 Figure 6 is a plan view of one corner of a further container;

Figure 7 is a section along line 7-7 in Figure 6;

Figure 8 is a detail section of a still further container;

25 Figure 9 is a plan view of yet another container; and

Figures 10 to 16 show alternative lids for the container of Figure 9.

Referring to Figures 1 to 3 of the drawings, an egg box comprises a base portion 10 formed of deep-drawn plastics material and a separate flat, cardboard lid 18. The base portion has six egg receiving depressions 11 and two centrally arranged upstanding pillars 12 within a surrounding wall 13. The upper edge of the wall 13 has a continuous internal shoulder or ledge 14 and a peripheral rim 15. In this embodiment, the ledge 14 is in the same plane as the upper surfaces of the pillars 12. Also the height of the upper surfaces of the pillars above the bases of the depressions 11 is equal to or larger than the greatest dimension of the eggs to be packed in the egg box.

The lid 18 rests on the pillars 12 and the ledge 14, and may carry printed matter concerning the eggs packed in the box.

Retaining means for the lid 18 are provided which render the lid reclosable. In this embodiment the retaining means comprise hollow hook-like projections 19 projecting upwardly from the pillars 12 through aligned D-shaped apertures 20 (Figure 3) in the lid. Each projection is moulded integrally with the base portion 10 and is formed with a hollow stem 21 merging into a hollow lug 22 extending substantially perpendicularly thereto. The lugs 22 of the two projections 19 face in

opposite directions, in this embodiment away from each other, and when the lid is placed thereon, the lugs overlies the upper surface of the lid.

Alternatively, the lugs 22 may face each other.

5 Also, in the case of an egg box for twelve eggs having four lid support pillars, there may be a projection 19 upstanding from each pillar or only two of the pillars as may be required.

Additional finger-engaging apertures or cut-outs  
10 23 at the ends of the lid are provided to facilitate removal of the lid. These cut-outs 23 also serve as ventilation holes.

A suitable tool for forming the integrally moulded projections 19 is described in British Patent Specification  
15 No 1514260.

Figures 4 and 5 relate to an alternative embodiment in which the lid retaining means are hollow projections 30 incorporated into the rim of the surrounding wall 13 of the base portion 10 instead of projecting upwardly  
20 from the support pillars 12. In this embodiment there is a projection 30 at each corner of the base portion and the lug 31 of each projection 30 extends inwardly of the base portion to overlie the adjacent edge of the lid 33, which fits between the lugs 31 and the continuous ledge  
25 14. As before, the lid 33 has apertures or cut-outs 34

at its ends to facilitate removal of the lid and to provide ventilation for the eggs.

In each embodiment described above the lid may have one or more side and/or end flaps as described in British Patent Application No 2072628. Each flap fits inside the base portion and may rest on the walls defining the egg receiving depressions 11. Such a construction of lid allows the edge support ledge 14 to be omitted.

, In the embodiment of Figures 6 and 7, the continuous ledge 14 of the previous embodiments is replaced by a local ledge 40 associated with each projection 30 whereby the lug 31 and the respective ledge 40 still define a groove into which fits the edge of the lid. This ledge 40 is provided by a substantially vertical, tapered rib formed internally of the surrounding wall 13, which rib is convex in cross-section with regard to the inside of the box and serves also as strengthening means for the wall 13. Each projection 40 and its respective rib are formed during the moulding of the box 10 by a single tool comprising a vertical post 41 shown in chain-dot lines.

Figure 8 shows a detail of a still further egg box in which the turned over rim 15 is replaced by a flat rim



42 having a small upstanding rib 43 to provide strength to the rim. This modification may be applied to each of the embodiments of Figures 1 to 3, Figures 4 and 5 and Figures 6 and 7. In the case of the latter two embodiments,  
5 each corner projection 30 would still be formed between two upstanding shoulders in like manner to the first embodiment of Figures 1 to 3, the remainder of the rim having the cross-section shown in Figure 8.

In both the embodiments of Figures 6 and 7 and  
10 Figure 8, further edge support for the lid than is given by the ledges 40 may be provided by any side or end flap resting on the adjacent walls defining the egg receiving depressions 11.

The embodiment of Figure 9 concerns an egg box  
15 which is of a similar type to the egg box described in relation to Figures 1 to 3. The base portion 10 remains unchanged. However, in this embodiment the apertures 44 in the lid 45 for engagement by the hook-like projections 19 upstanding from the pillars 12 are crescent shaped  
20 instead of being D shaped, the convex edge of the tongue 46 providing a flexibility thereto which results in an easier disengagement with the lug 22 of the respective projection.

The finger-engaging apertures or cut-outs 23 at the  
25 ends of the lid are also replaced by an equivalent aperture

or cut-out 47 at one side, in this embodiment, or at each side of the lid 45. Such side positioning of the lid removal means can be advantageous because the lifting movement of the lid is not directly opposed to the natural holding action of the lugs 22 of the projections 19.

The lid 45 of the embodiment of Figure 9 may be replaced by any of the alternative lids illustrated in Figures 10 to 16. In the case of the lid 48 shown in Figure 10, there is provided a finger-engaging aperture or cut-out 49 at one end of the lid.

In Figure 11, the lid removal means is a pull flap 50 at one end of the lid 51.

The lids 52 and 53 of Figures 12 and 13 are equivalent to the lids 48 and 51 of Figures 10 and 11 respectively, except that they have side flaps 54 which may be folded downwardly to be inserted inside the base portion 10 as described in Application No 2072628.

The same applies to the lids 55 and 56 of Figures 14 and 15 except that they have a single end flap 57 instead of two side flaps.

The lid 58 of Figure 16 has two end flaps 57 and at one end a pull flap 59 cut out of the flap 57 at that end of the lid.

The invention is not restricted to the specific details of the embodiments described above. For example,

the ledge or ledges in the base portion which support the lid edge may be omitted, especially in the case of the lid having side and/or end flaps which can readily engage the top of the nests or pockets in the base portion.

5           Also, instead of the projections 19 being directed away from each other towards opposite ends of the box (Figures 1 to 3 and 9 to 16), the projections may be directed towards each other or both projections may be directed towards one or other side of the box. In each  
10       case each aperture 20 or 44 would be correspondingly arranged to cooperate with the respective projection. Similarly the peripheral location of the lid removal means may be altered, as desired, so that its action is best suited to the particular arrangement of  
15       interengaging projections and apertures.

          Although the various lids shown in Figures 9 to 16 have crescent shaped apertures 44, it will be appreciated that any of these particular lids, or others having different combinations of lid removal means and/or side  
20       and end flaps, may have the D shaped apertures of the lid shown in Figures 1 to 3.

          Furthermore, each embodiment may be readily adapted to a container having a different number of pillars. For example, a container of the same general type as shown  
25       in Figures 1 to 3 and 9 but for packaging twelve eggs may

have four pillars each having an upstanding hook-like projection which passes through a respective aperture in the lid. In this particular case it would be preferred that the four projections are all directed  
5 at their respective adjacent side of the box or are all directed at their respective adjacent end of the box, but other arrangements could be provided if desired. For example, the four projections may all be directed inwardly, either longitudinally or transversely of the  
10 box. The container may also be readily modified for packaging any other number of eggs, e.g. ten.

If desired the container may be a box for packaging any desired number of fruit or other articles instead of eggs. Indeed the invention is also applicable to any  
15 container having a separate lid whether or not the container has article receiving depressions in its base portion. Preferably such a container is a deep-walled container having a substantially flat lid, and/or has one or more lid supporting pillars in its base portion.

CLAIMS

1. A packaging container comprising a base portion  
formed of plastics material having a surrounding wall, a  
5 separate lid, and retaining means for holding the lid on  
the base portion, the retaining means being moulded  
integrally with the base portion, characterised in that  
the retaining means is at least one projection of hook-like  
configuration having a stem merging into a lug extending substantially  
10 perpendicularly thereto for interengagement with the lid.

2. A container as claimed in Claim 1, characterised in that  
the or each projection is moulded with an upright hollow stem and  
a hollow lug.

15

3. A container as claimed in Claim 1 or Claim 2,  
characterised in that the lug of the or each projection,  
in use, overlies the outer, e.g. the upper, surface of the lid.

20 4. A container as claimed in any one of the preceding  
claims, characterised in that the container is a deep-walled  
container, in which the surrounding wall of the base portion has a  
height which is greater than the article or articles to be packaged,  
and the lid is a substantially flat lid.

25

5. A container as claimed in any one of the preceding claims,  
characterised in that the base portion has at least

one pair of lid supporting pillars and the retaining means comprise one said projection upstanding from each pillar and aligned apertures in the lid through which the lug of each projection may pass.

5

6. A container as claimed in Claim 5, characterised in that each aperture is D-shaped.

10

7. A container as claimed in Claim 5, wherein each aperture is crescent shaped.

15

8. A container as claimed in any one of Claims 5 to 7, characterised in that the lugs of the projections of the or each pair of pillars face in opposite directions.

9. A container as claimed in Claim 8, characterised in that the lugs of the projections face away from each other.

20

10. A container as claimed in any one of Claims 1 to 4, characterised in that the or each projection of the retaining means is incorporated into the surrounding wall of the base portion.

25

11. A container as claimed in Claim 10, characterised

in that the container is generally rectangular and has a projection provided at each corner of the base portion, the lug of each projection extending inwardly.

5           12. A container as claimed in Claim 10 or Claim 11, characterised in that the or each projection is provided in combination with means for strengthening the surrounding wall and/or a ledge beneath the lug of the or each projection to define a gap therebetween into which the  
10           edge of the lid may fit.

          13. A container as claimed in any one of Claims 10 to 12, characterised in that the base portion has lid supporting pillars.

15           14. A container as claimed in any one of the preceding claims, characterised in that the lid is provided with at least one finger-engaging aperture or cut-out or pull flap as means for facilitating the  
20           removal of the lid.

          15. A container as claimed in Claim 14, characterised in that the container is generally rectangular and the or each aperture, cut-out or pull  
25           flap is provided at one side of the lid.

16. A container as claimed in any one of the preceding claims, characterised in that the lid is provided with one or more side and/or end flaps which fit inside the base portion.

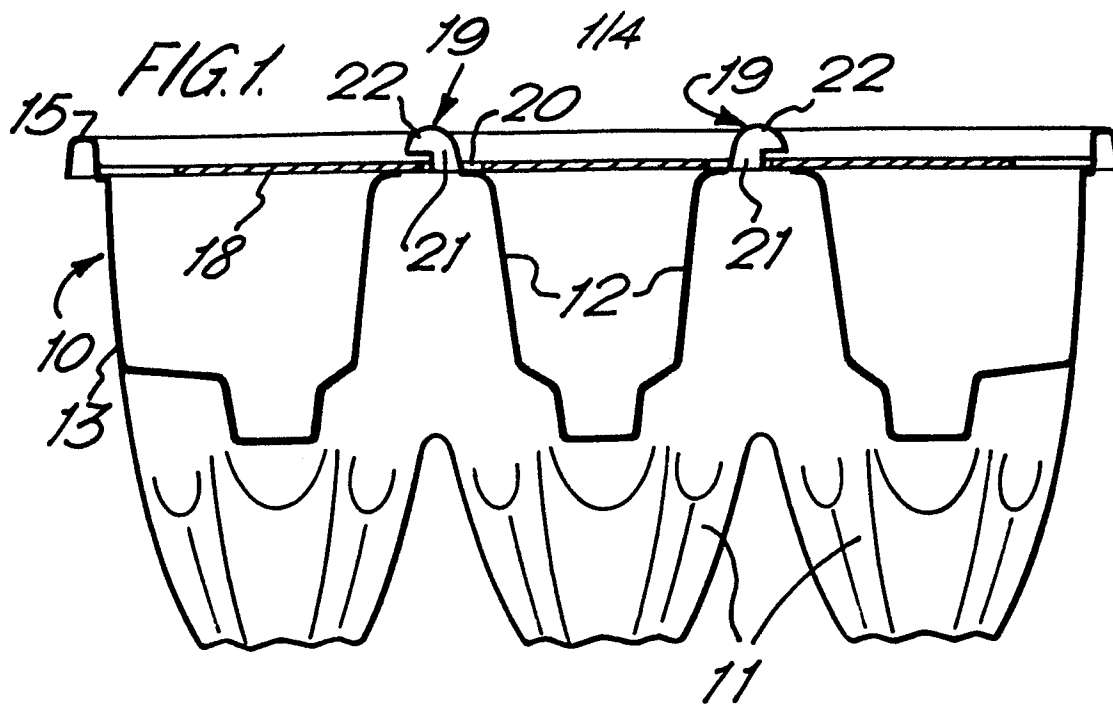
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17. A container as claimed in any one of the preceding claims, characterised in that the base portion has article receiving depressions.

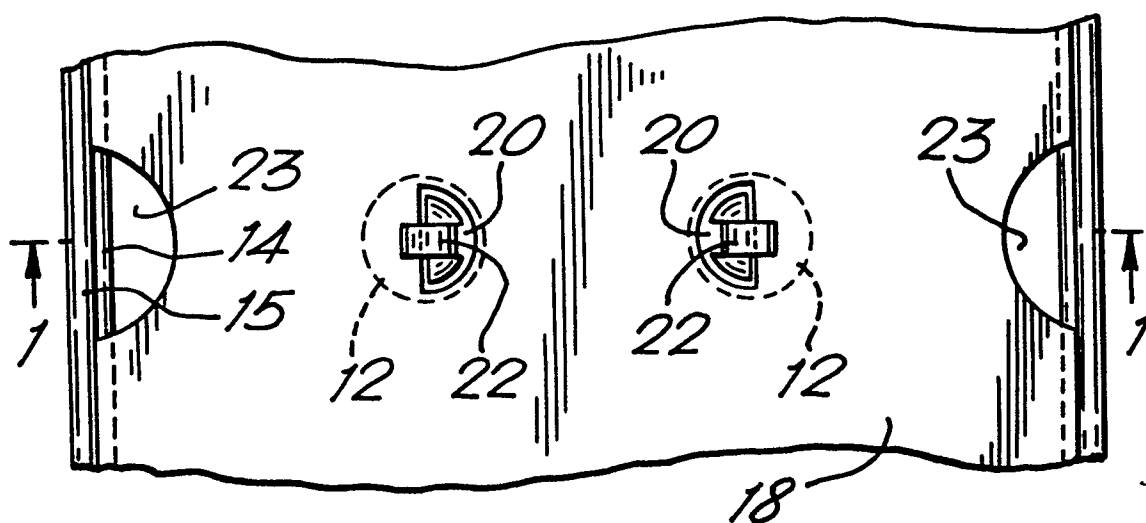
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18. A container as claimed in any one of the preceding claims, characterised in that the container is an egg box.

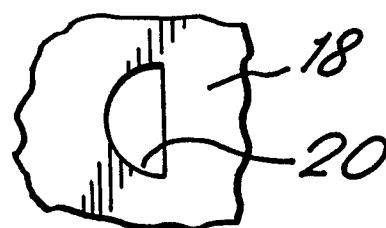




*FIG. 2.*



*FIG. 3.*



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FIG. 4.

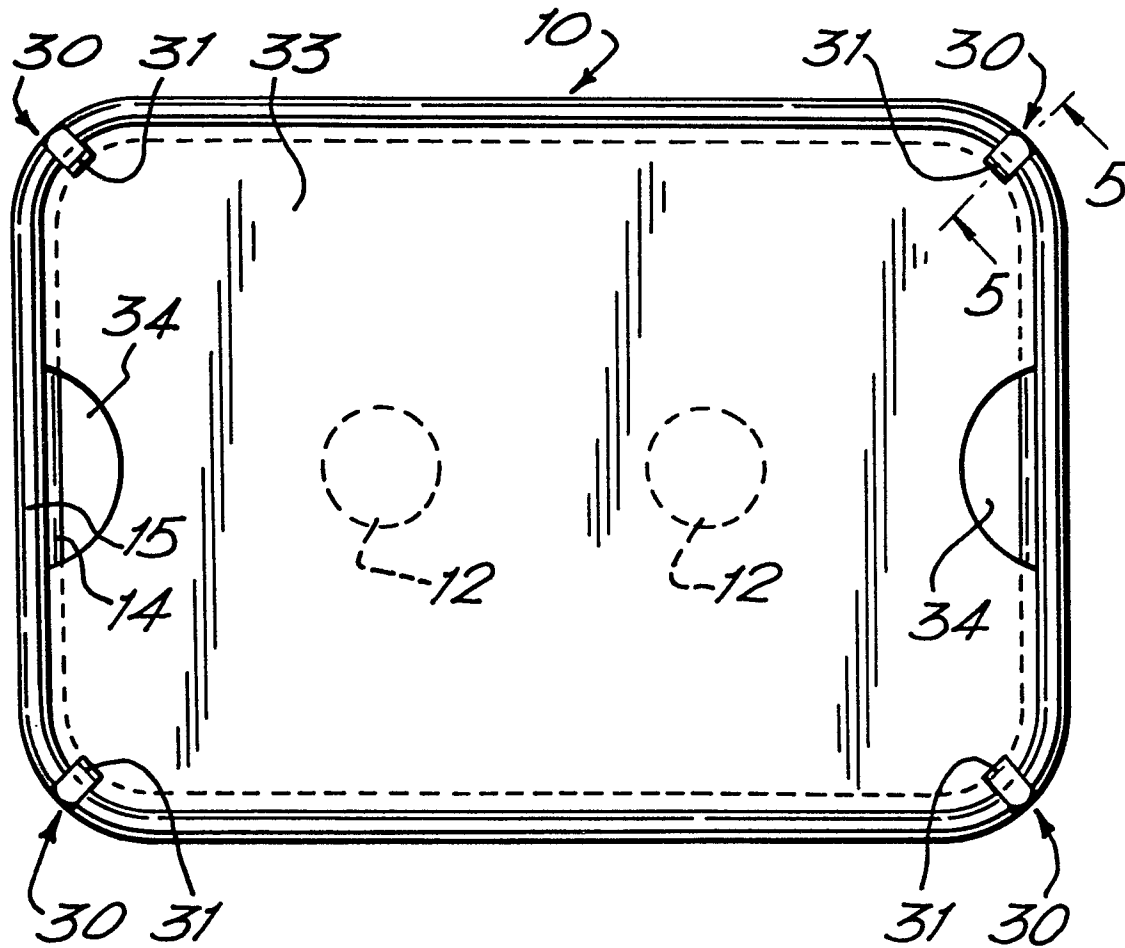
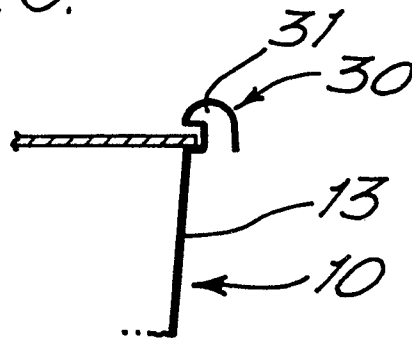


FIG. 5.



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FIG. 6.

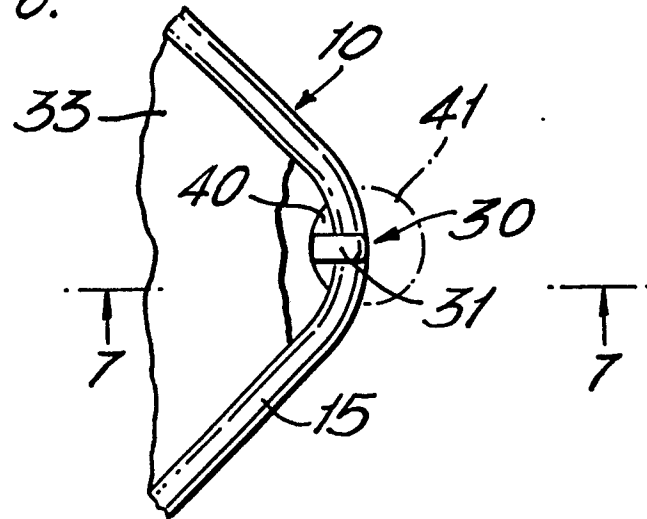


FIG. 7.

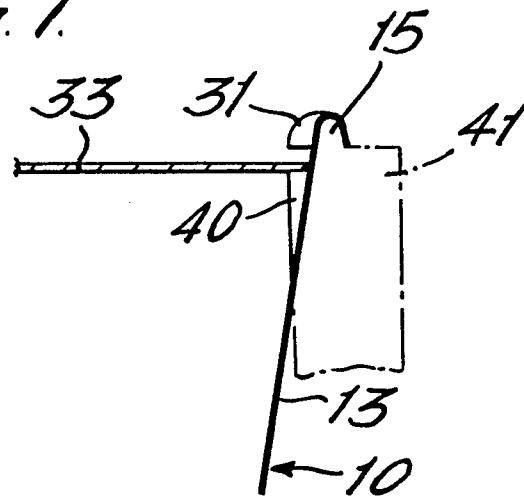
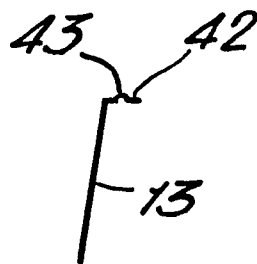


FIG. 8.



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FIG. 9.

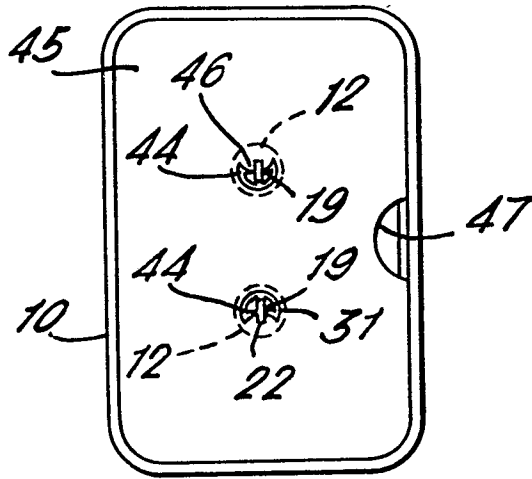


FIG. 10.

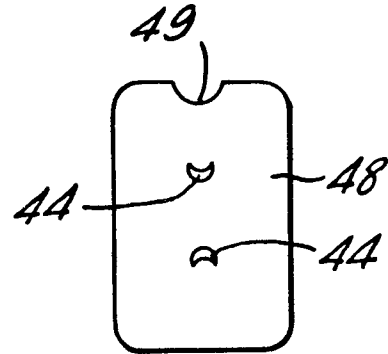


FIG. 11.

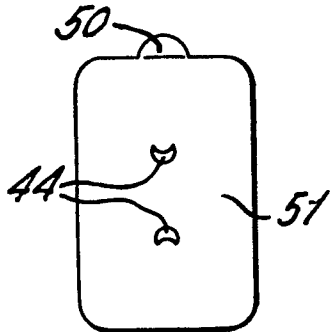


FIG. 12.

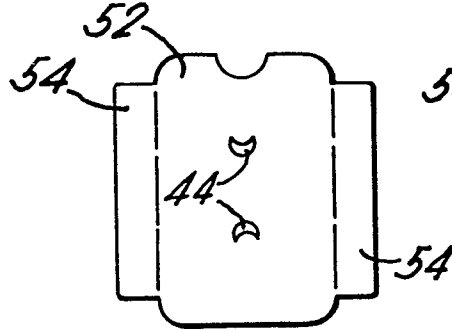


FIG. 13.

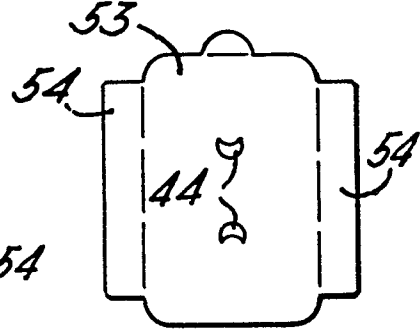


FIG. 14.

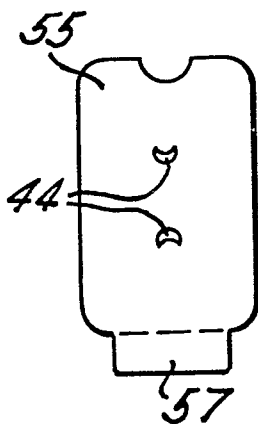


FIG. 15.

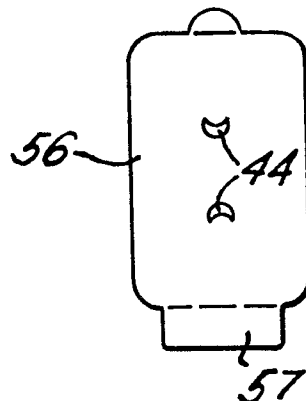


FIG. 16.

