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(71) Applicant: **KARRAN PRODUCTS LIMITED, Karran House Lightwater Road, Lightwater Surrey GU18 5XQ (GB)**

(72) Inventor: **Cumming, Charles F., 25 Frensham Road, Crowthorne Berkshire (GB)**
Inventor: **Jones, George Raymond William, 60 South Terrace, Surbiton Surrey (GB)**

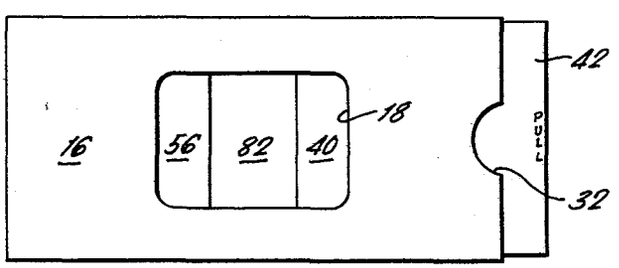
(74) Representative: **Bayliss, Geoffrey Cyril et al, BOULT, WADE & TENNANT 27 Furnival Street, London EC4A 1PQ (GB)**

(54) Display devices.

(57) A display device comprises a flat sleeve (16) in which two moveable members (40, 56) are slidably mounted. One of the members (40) can be pulled from one end of the sleeve in one direction, and the other moveable member (56) is connected to said one moveable member (40) via an endless band within the sleeve so that it slides in the opposite direction. An aperture is formed part-way along the sleeve so that both moveable members can be seen. As the members move apart, they reveal a display portion (82).

The sleeve (16) and moveable members (40, 56) can be printed with advertising or promotional matter, and the display panel can be printed with a message which is revealed when the members (40, 56) move apart.

In a further embodiment, the moveable members overlap each other behind the aperture, and in another embodiment said other moveable member is fashioned as an indicator which moves across the aperture in the opposite direction to the direction of pull of said one moveable member.



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DISPLAY DEVICES

This invention relates to display devices of the type which comprise a sleeve member open at at least one of its ends, two bearing parts mounted within the sleeve member and spaced apart along the length thereof, an endless band of flexible material extending around the bearing elements, and two moveable members slidably mounted within the sleeve member, one of the moveable members having a portion which can be grasped at said one end of the sleeve member, the moveable members being attached to the endless band such that as the graspable portion is pulled from the sleeve the moveable members slide in opposite directions. Preferably, such devices can be held in the hand and are operable to reveal a surprise message.

A known example of such a display device is disclosed in patent specification GB 1215468. In that device, the sleeve member is open at both its ends, and as the graspable portion of said one

moveable member is pulled from said one end of the sleeve member, the other moveable member projects from the other end of the sleeve. Each moveable member may bear, for example, a message such as an advertising slogan, which is revealed when the graspable portion is pulled.

In accordance with the present invention, the sleeve member has an aperture part-way along its length and movement of at least part of said other moveable member is visible through the aperture.

By providing these features, the device is more versatile than the known device. Whereas the known device can only reveal a surprise message or messages on the portions of the moveable members which project from the sleeve, the device according to the invention can display a message through the aperture which is moved out of view when the graspable portion is pulled to reveal a further message. For example the first message may be a question; when the graspable portion is pulled, the question may move from view to reveal the answer to the question.

A disadvantage of the known device was that a person to who it was given would sometimes hold the sleeve by said other end in one hand and pull the

graspable portion with the other hand. Said other moveable member would then project into the palm and be at least partly hidden from view. The element of surprise would then be lost. With the device according to the invention, there is no need for said other moveable member to project from the sleeve in order for the message to be revealed and therefore the invention enables this disadvantage of the prior device to be overcome.

In one embodiment, the moveable members form a pair of curtains behind the aperture arranged such that as the graspable portion is pulled the curtains open to reveal a display portion within the sleeve.

In a further embodiment, a portion of a first one of the moveable members overlaps a portion of the second moveable member behind the aperture and in front of the endless band, said portion of said first moveable member moving in one direction upon pulling of the graspable portion to reveal through the aperture the second moveable member moving in the opposite direction.

In yet another embodiment, a display panel is mounted within the sleeve behind the aperture and in front of the endless band, said other moveable member having a portion fashioned as an indicator,

which indicator moves along the display panel in front of the display panel as the graspable portion is pulled.

Specific embodiments of display devices according to the present invention will now be described by way of example with reference to the accompanying half-scale drawings, in which:

Figure 1A to 1D show blanks of cardboard used in constructing a first embodiment of the display device;

Figures 2A to 2C are front views of the display device, the curtains being closed in Figure 2A, partly open in Figure 2B and fully open in Figure 2C;

Figure 3 and 4 are sectional views taken along the lines III-III and IV-IV, respectively, in Figure 2A (with background detail omitted and the thickness of the device exaggerated for clarity);

Figures 5A to 5C show blanks of cardboard used in constructing a second embodiment of the display device;

Figure 6 is a front view of the second embodiment of display device;

Figures 7A to 7E show blanks of cardboard used in constructing a third embodiment of the display device; and

Figure 8 is a front view of the third embodiment

of display device.

Referring to Figures 1 to 4 of the drawings (in which dotted lines denote score lines), the first blank 10, shown in Figure 1A, is used to form a sleeve 12 with an integral internal sheet 14 which is narrower than the width of the sleeve. The sleeve 12 has a front panel 16 formed with a central, generally rectangular aperture 18 extending about one third along the length of the sleeve and half-way across the sleeve, and also a rear panel 20. The internal sheet 14 is formed with a slot 22 extending almost the whole length of the sleeve and spaced from the score between the internal sheet 14 and the front panel 16 by a narrow margin 24 which is glued to the marginal edge 26 rear panel 20 in the last stage of assembly. The internal sheet 14 is also formed with a pair of transverse slots 28 extending across about one half the width of the internal sheet 14 adjacent respective ends thereof. The edges of the slot 28 nearest each other form bearing edges 30. The front and rear panels

16, 20 and internal sheet 14 have finger recesses 32 which register with each other at one end of the sleeve 12.

A tape of flexible, substantially non-extensible material (such as acetate) is fitted to the internal sheet so that it extends from one bearing edge 30 to the other and has its ends joined to each other to form a taut, endless band having two runs 34, 36 extending on respective sides of the internal sheet.

A second blank 38, shown in Figure 1D, provides (a) a right-hand curtain 40, (b) a pair of pull portions 42, 43 which are folded flat against each other to form a double thickness, (c) a panel 44, and (d) a pair of locking tabs 46, 48 with a corresponding locking slot 50. The panel 44 is inserted through the slot 22 in the internal sheet 14 and the panel 44 is then secured to the rear run 34 of the endless band, for example by a piece 52

double-sided sticky tape. The curtain 40 and tab 48 are each folded 180° with respect to the panel 44, and the locking tab 46 is engaged with the locking slot 50 so that the blank 38 is wrapped around the internal sheet 14 and the pull portion 42 is at the end of the sleeve with the pull recesses 32.

A third blank 54, shown in Figure 1C is an opposite-handed version of the second blank 38 with the omission of the pull portions. The third blank 54 provides (a) a left-hand curtain 56, (b) a panel 58, and (c) a pair of locking tabs 60, 62 with a corresponding locking slot 64, and it will be noted that the tab 62 is longer than the corresponding tab 48 of the second blank 38. The tab 62 and panel 58 are inserted through the slot 22 in the internal sheet 14, and the tab 62 is folded 180° relative to the panel 58. With the edges 66, 68 of the panels 44 and 58 positioned to abut, exactly half-way along the internal sheet 14, the tab 62 is secured to the front run 36 (rather than the rear run) of the endless band by a further piece 70 of double-sided sticky tape. The curtain 56 is then folded 180° relative to the panel 58, and the locking tab 60 is engaged in the slot 64 so that the third blank 54 is also wrapped around the internal sheet 14.

A fourth blank 72 forms a display panel 74 equal in length to the distance from the edge of the right-hand slot 28 nearest the pull recesses 32 to the opposite end of the internal sheet 14, and equal in width to the distance between the free longitudinal edge of the internal sheet 14 and the nearest edge of the slot 22. At one end of the display panel 74, a tab 76 is provided, equal in width to the length of the slot 28. The display panel 74 is inserted, tab 76 end first, between the left-hand curtain 56 and the tab 62, and between the right-hand curtain 40 and the tab 48/band run 36, until the display panel 74 is home with the tab 76 thereon passing through the slot 28 nearest the finger recesses 32. The marginal end 78 of the display panel 74 is then glued to the marginal end 80 of the internal sheet 16. Finally, the front panel 16 is folded 180° relative to the internal sheet 14 to overlie the curtains 40, 56, and the rear panel 20 is folded 180° in the same direction relative to the front panel and the margin 24 is glued to the marginal edge 26 as aforesaid.

When the pull portions 42, 43 are grasped at the finger recesses 32 and pulled, the right-hand curtain 42 opens, causing rear band run 34, also to move to the right, and accordingly the front band run

36 to move to the left. Thus, the left-hand curtain 56, which is attached to the front band run 36 moves to the left, and so the curtains open simultaneously to reveal a display area 82 on the display panel 74, indicated by chain dot lines in Figure 1B. When the pull portions are pushed into the sleeve, opposite movements take place, and the curtains close simultaneously.

The display area 82 bears printed matter or pictorial material, for example a message or slogan. The front panel and/or curtain may also be printed. When the pull portion is pulled, the message or slogan is revealed as a surprise.

The display device may be used for mailshots or as a greetings card.

A further embodiment of display device according to the invention is shown in Figures 5 and 6. The device 100 is formed from three blanks, i.e. a sleeve blank 102, a blank 104 for one moveable member and a blank 106 for another moveable member. The sleeve blank 102 is similar in many respects to the blank shown in Figure 1A. However, the aperture 108 is offset, and the bearing edges 110 for the endless band 112 are formed by outer edges of the blank 102. Furthermore, a slot 22 is not provided.

The blank 104 is not folded. It has a portion 114 which is fixed to the run of the endless band 112 which is between the blank portion 116 and the aperture 108 when the sleeve blank is folded. The blank 106 is folded along a score line 118. A rear part 120 of the blank 106 has a portion 122 which is fixed to the other run of the band 112. The front part 124 of the blank 106 overlaps the blank 114. A flap 126 on the sleeve blank 102 is folded over the blank 104 and the front part 124 of the blank 106. The blank 102 is then folded along score lines 126 and 128, and a gluing flap 130 is folded and glued to the shaded area 132 shown in Figure 5A. A tab 134 is provided which is folded over and glued the shaded portion 136 of the flap 130 in order to provide a stop which co-operates with a waisted portion 138 of the rear part 120 of the blank 106 to limit how far the moveable member 106 can be withdrawn from the sleeve 102.

Figure 6 illustrates the device with the graspable moveable member 106 partly withdrawn from the sleeve and moving to the right. A portion of the front part 124 of the member 106 is visible through the aperture 108 moving to the right to reveal a portion of the other moveable member 114

moving to the left. Upon movement of the member 114 to the left it projects from the open left-hand end of the sleeve 102.

Another embodiment of display device 200 according to the invention is shown in Figures 7 and 8 and comprises a sleeve blank 202 having an aperture 203, and internal panel 204 carrying the endless band 206, a display panel 208, a graspable moveable member 210 and a further moveable member 212 in the form of an indicator having an arrow head 214.

The graspable member 210 is glued at an end portion 216 to one run of the endless band 206, and flaps 218, 220 on the internal panel are folded over to form a channel in which the graspable member can slide. The indicator 212 is glued at its portion 222 to the other run of the band 206 so that the arrow head 214 points downwardly, and an edge 224 of the display panel 208 is glued to the portion 226 of the internal panel 204 (on the opposite face of the panel 204 to the graspable member 208) so as to cover the run of the endless band 206 to which the indicator is fixed. The arrow head 214 is then folded at score line 228 around the lower edge 230 of the display panel 204. Flap 218 of the internal panel 204 is then glued

to flap 232 of the sleeve blank so that the display panel 208 is disposed behind the aperture but in front of the internal panel 204. The sleeve 202 is then folded along score lines 234, and the flap 232 is folded over and glued to the edge portion 236 of the sleeve 202.

Figure 8 shows the device with the graspable member 210 partly withdrawn and moving to the right. Such movement causes the arrow head 214 which is visible through the aperture 203 to move to the left across the display panel 208.

In any of the embodiments described above, a sheet of transparent material may be fixed to the sleeve around the aperture so as to extend across the aperture.

CLAIMS

1. A display device comprising a sleeve member (12; 102; 202) open at at least one of its ends, two bearing parts mounted within the sleeve member and spaced apart along the length thereof, an endless band (34; 112; 206) flexible material extending around the bearing elements, and two moveable members (38, 54; 106, 104; 210, 212) slidably mounted within the sleeve member, one of the moveable members (38; 106; 210) having a portion which can be grasped at said one end of the sleeve member, the moveable members being attached to the endless band such that as the graspable portion is pulled from the sleeve the moveable members slide in opposite directions, characterised in that the sleeve member has an aperture (18; 108; 203) part-way along its length and in that such movement of at least part of the other moveable member (54; 104; 212) is visible through the aperture.

2. A display device as claimed in Claim 1, wherein the bearing parts are formed by a pair of spaced apart edges provided by an internal sheet part.

3. A display device as claimed in Claim 2, characterised in that the sleeve member is in the form of a flattened tube folded from a blank of sheet material, the blank also providing the internal sheet part.

4. A display device as claimed in any preceding claim, characterised in that the moveable members form a pair of curtains (40, 56) behind the aperture (18) arranged such that as the graspable portion is pulled the curtains open to reveal a display portion (82) within the sleeve.

5. A display device as claimed in Claim 2 or 3 and in Claim 4, characterised in that the internal sheet part provides a further pair of longitudinal edges, and the moveable members are wrapped around said further pair of edges of the internal sheet part for sliding therealong.

6. A display device as claimed in Claim 4 or 5, characterised in that said display portion (82) is provided on a display sheet (74) mounted behind the curtains and hiding the endless band from view through the aperture.

7. A display device as claimed in any of Claims 1 to 3, characterised in that a portion (124) of a first one of the moveable members (106) overlaps a portion of the second moveable member (104) behind the aperture (108) and in front of the endless band, said portion of said first moveable member moving in one direction upon pulling of the graspable

portion to reveal through the aperture the second moveable member moving in the opposite direction.

8. A display device as claimed in Claim 1 or 2, characterised in that a display panel (208) is mounted within the sleeve behind the aperture (203) and in front of the endless band, said other moveable member having a portion fashioned as an indicator (214), which indicator (214) moves along the display panel (208) in front of the display panel as the graspable portion is pulled.

FIG. 1A.

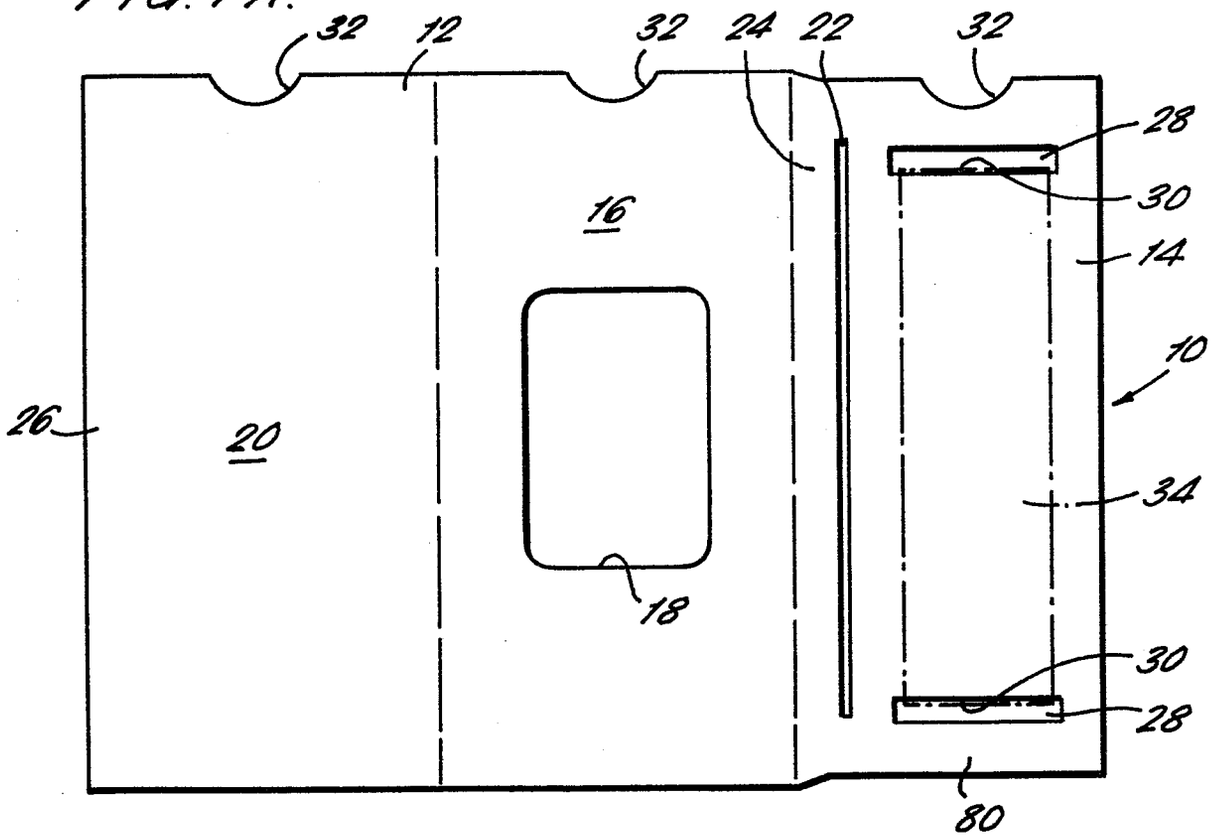


FIG. 1B.

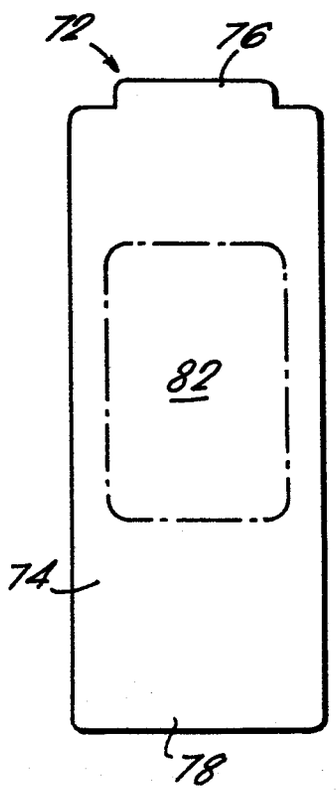


FIG. 1C.

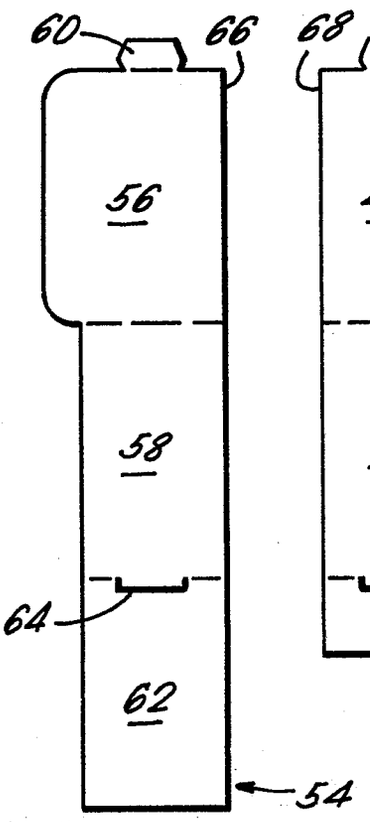
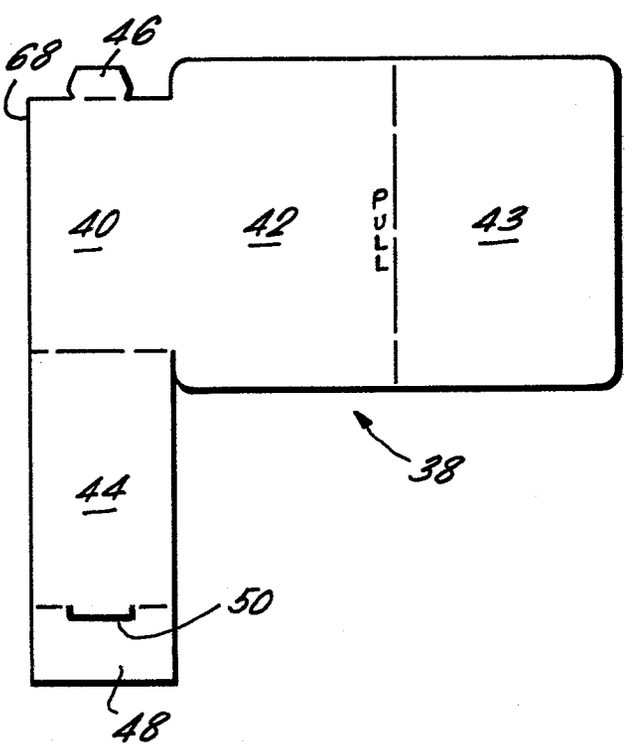


FIG. 1D.



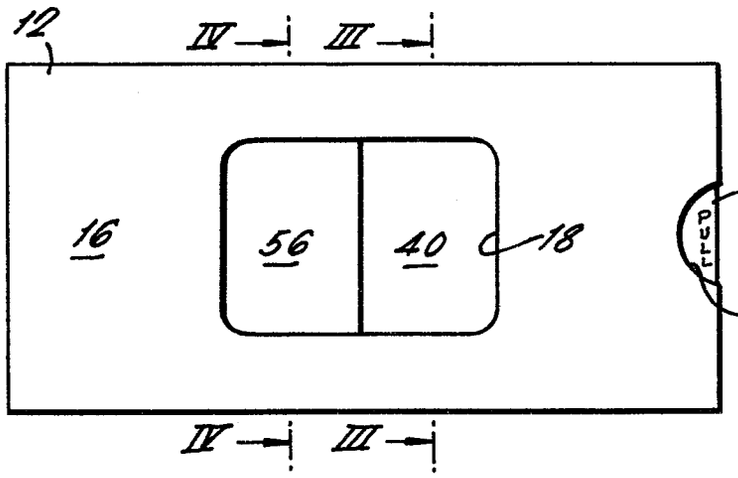


FIG. 2A.

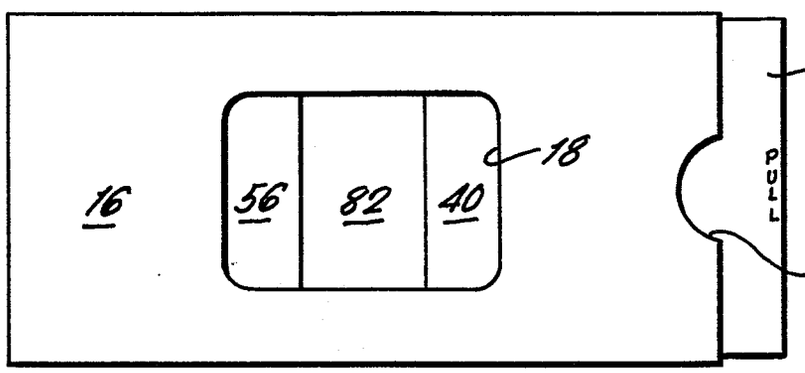


FIG. 2B.

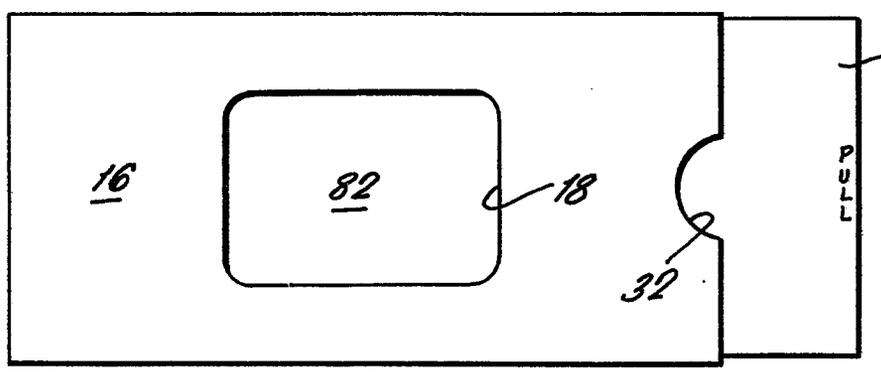


FIG. 2C.

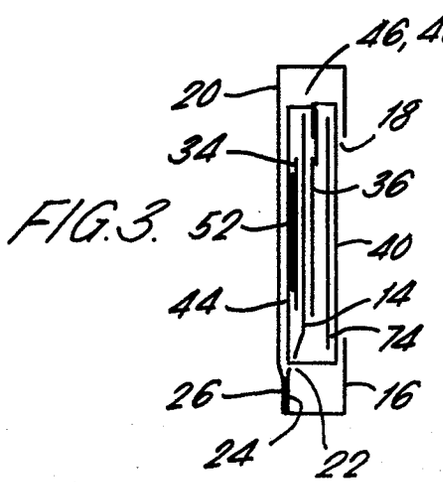


FIG. 3.

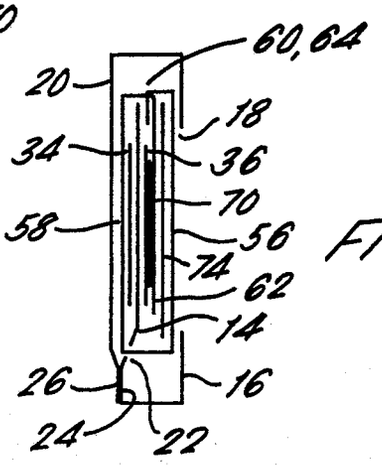


FIG. 4.

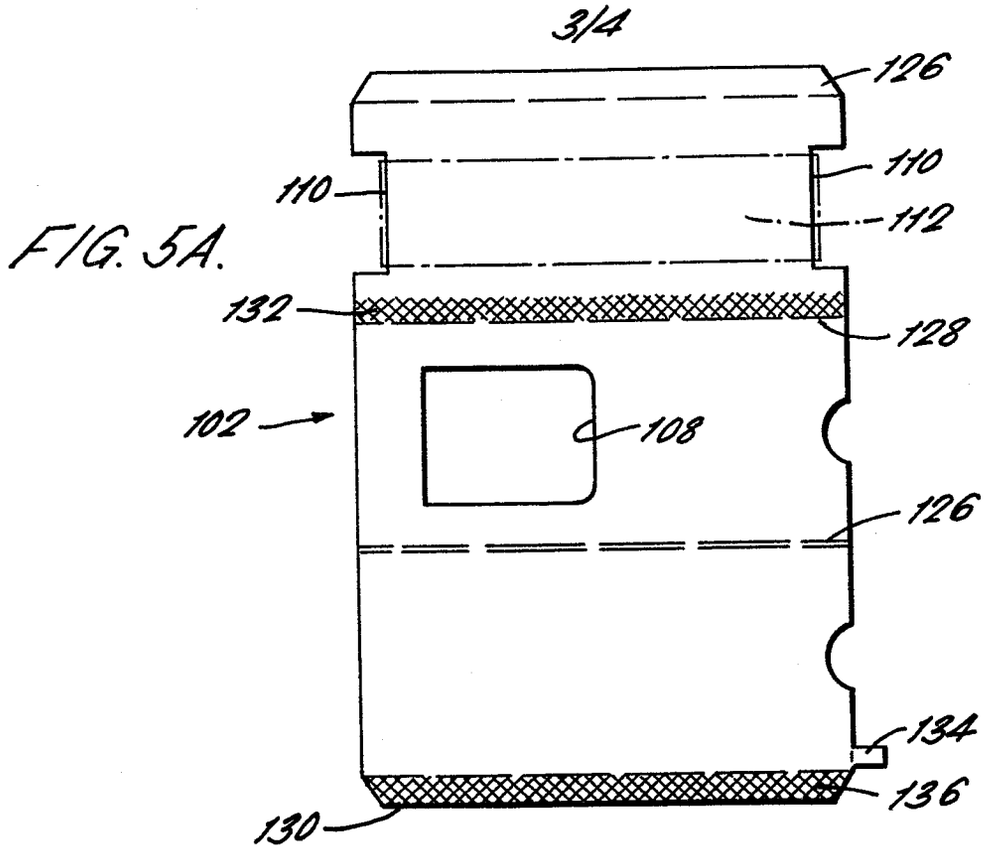


FIG. 5A.

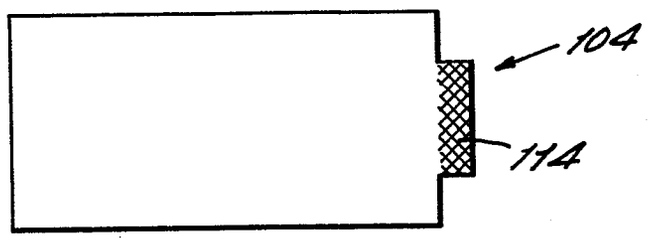


FIG. 5B.

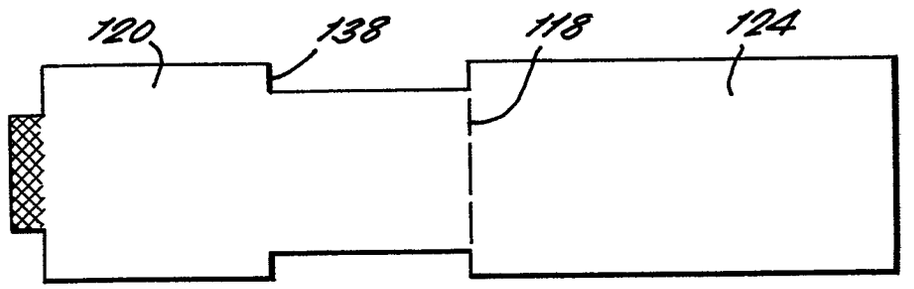


FIG. 5C.

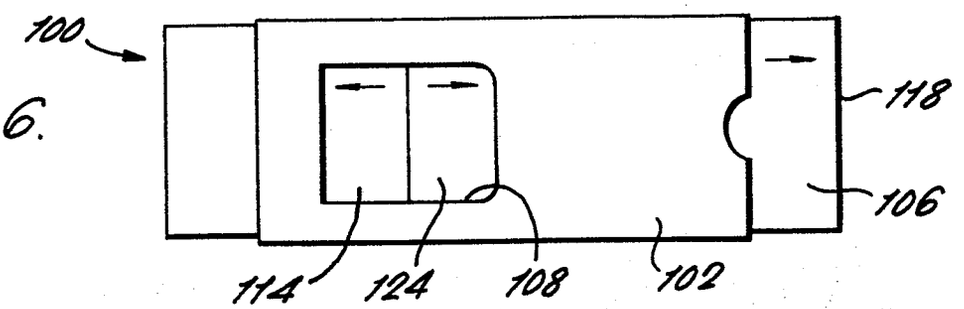


FIG. 6.

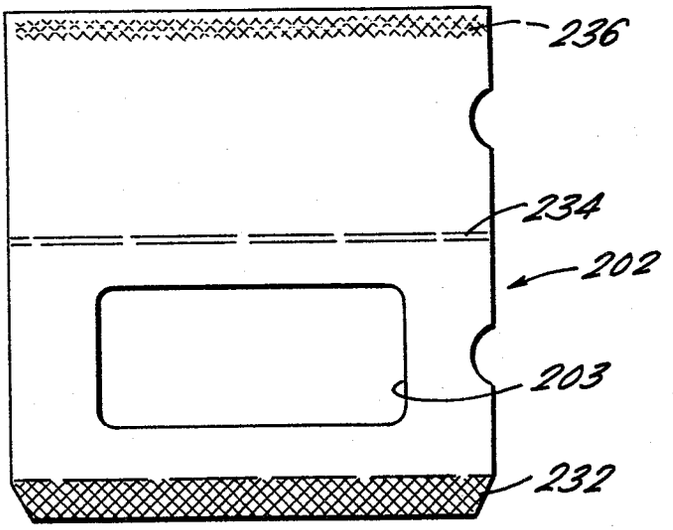


FIG. 7A.

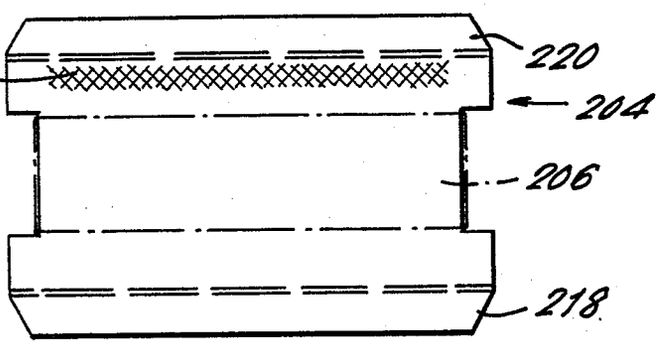


FIG. 7B.

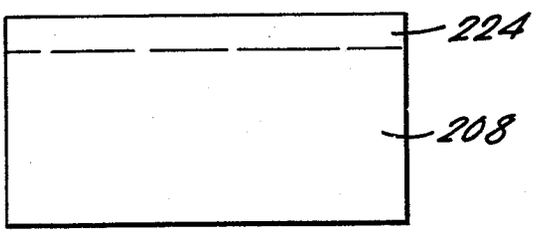


FIG. 7C.

FIG. 7D.

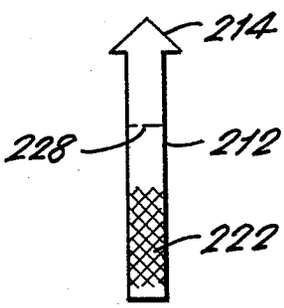
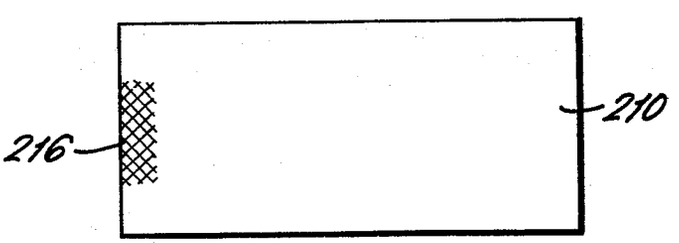


FIG. 7E.



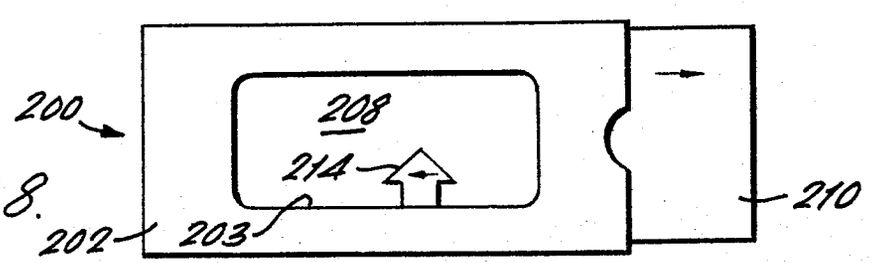


FIG. 8.