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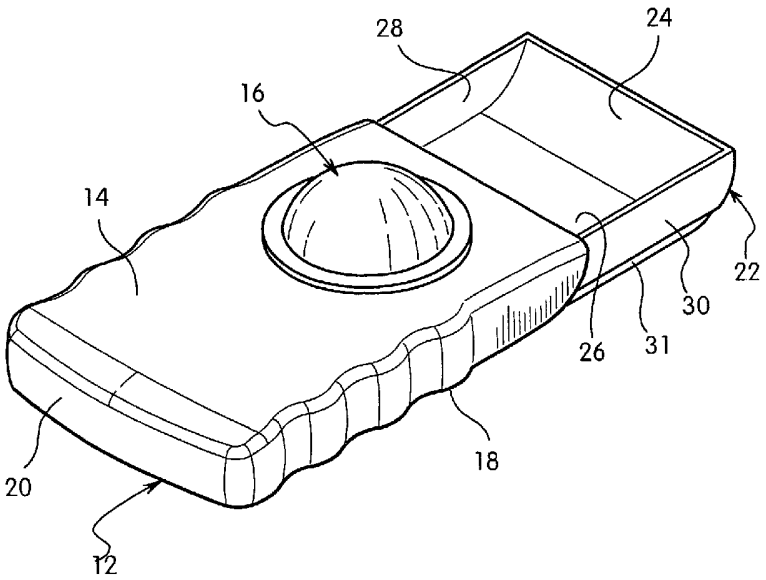
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(54) Title: DISPENSER FOR THIN SHEETS



(57) Abstract: The present dispenser (10) is for dispensing thin sheets (42) of strip material. It is comprised of a housing (12) and an interfitting strip material holder (22). The housing includes an ejector (16) that includes an appendage (17) for contacting the strip material to eject it from the holder upon relative motion of the housing and the strip material holder. Upon the retraction of the strip holder into the housing and depressing the ejector a strip of material is ejected. The ejected strip of material is substantially out of the dispenser and can be gripped by a persons fingers, and if edible, can be gripped by a persons lips and ingested. Further since the holder is almost fully into the housing when the strip of material is fully dispensed the other strips are not exposed and contaminated.

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DISPENSER FOR THIN SHEETS

Field of the Invention

This invention relates to a dispenser for thin sheets of material. More particularly this invention relates to a dispenser of small sheets where a finger of a person is not needed to eject the sheet of material from the dispenser.

Background of the Invention

Small dispensers for dispensing small sheets such as tickets and stamps have been used for many years. U.S. Patent 404,584 granted in 1889 discloses a ticket or stamp holder. Ticket, stamp and related items holders having a related structure are shown in U.S. Patent 1,451,279; U.S. Patent 1,908,115; U.S. Patent 3,286,823; U.S. Patent 3,421,658; U.S. Patent 3,567,071 and U.S. Patent 4,301,917. Recently granted U.S. Patent 6,182,860 discloses a similar dispenser for leaves of soap.

However, all of these dispensers rely on a persons finger to move the sheet of material from the dispenser. A finger, such as the thumb, contacts the sheet and propels it from the dispenser. This is acceptable for items such as stamps, tickets, coupons, business cards and the like. However for edible items it is preferred that they not be touched by a persons finger.

The present dispenser in a primary embodiment is directed to the dispensing of edible products. For this reason the product is not moved or propelled from the dispenser by a persons finger. The dispenser has an ejector that contacts the sheet material product to be dispensed and moves it from the dispenser. The product sheet of material can then be grabbed by a persons lips and ingested. There is no need for finger contact. However once at least partially moved or propelled from the dispenser it can be grabbed and put into ones mouth, without contaminating the remaining product.

Brief Description of the Invention

This invention is directed primarily to a dispenser for sheets of materials where there is no need for a persons finger to contact the sheet of material during dispensing. However if a sheet is grabbed by ones fingers the remaining sheets are not exposed and subject to contamination.

The dispenser is comprised of the sheet holder in the general form of a tray. The sheet holder is slideably moveable in a housing. The sheet holder will hold a plurality of sheets of material in a stacked arrangement.

The top wall carries a sheet of material ejector which has an appendage on a lower surface thereof. When the ejector is depressed the appendage contacts a sheet of material and as the housing is moved forward relative to the holder for the sheet of material, a sheet of material is ejected from the holder. Then upon the retraction of the housing the ejected sheet of material can be gripped and ingested if an edible product. No finger contact is required. In one embodiment the ejector is a resilient deformable section with the appendage extending downward from the lower surface of the ejector. In one preferred embodiment the appendage is a flexible arm which arcs forwardly from an upper end that is attached to the ejector to the free lower end. The appendage can be up to a length to contact the bottom inner surface of the tray-like sheet material holder. It must be of a length to contact the last sheets of material and to dispense these last sheets of material.

In another embodiment the ejector is a cantilevered arm, a part of which will contact the sheets of material when depressed. This then will eject a sheet of material when the housing is moved relative to the tray.

Brief Description of the Drawings

Figure 1 is a perspective view of the dispenser closed.

Figure 2 is a perspective view of the dispenser opened.

Figure 3 is a cross-sectional view of the dispenser of Figure 1 along line 3-3.

Figure 4 is cross- sectional view of the dispenser of Figure 3 opened.

Figure 5 is a cross-sectional view of the dispenser of Figure 4 with the deformable ejector depressed.

Figure 6 is a cross-sectional view of the sheet of material holds.

Figure 7 is a cross-sectional view of the housing.

Figure 8 is a bottom plan view of the housing.

Figure 9 is a bottom plan view of the dispenser of Figure 9.

Figure 10 is a top plan view of an alternate embodiment of the dispenser with a hinged ejector.

Figure 11 is a side elevation view of the alternate embodiment of the dispenser.

Figures 12 - 16 shows the operation of the dispenser to dispense sheets of material.

Detailed Description of the Drawings

The preferred mode of the dispenser will be described with reference to the drawings. However, modifications of the concept of this dispenser are considered to be within the scope of the invention.

Figure 1 shows the dispenser 10 in a closed orientation and primarily shows the housing. The housing 12 is comprised of top surface 14 which has a resilient and deformable section 16. This is shown to be circular but can be of any shape. Also shown are end surface 24 and right side surface 18.

Figure 2 shows the dispenser in an open orientation with sheet material holder 22 partially removed from housing 12. This sheet material holder is like a drawer or tray and is in a slideable relationship with housing 12. In one

embodiment this slideable relationship is shown as recessed groove section 31 into which a projection 33 (Figure 7) of the housing extends. Any similar projection and groove arrangement can be used. This sheet material holder 22 has a front wall 24, bottom wall inner surface 26, left side wall 28 and right side wall 30.

Figure 3 shows the dispenser in a longitudinal cross-section. This view additionally shows the deformable sheet material ejector 16 in more detail. Appendage 17 extends from the dome 13 of ejector 16. The end 19 of the appendage 17 will contact the sheets of material during dispensing. Also shown in this view is the bottom surface 32 of the holder gripping ridges 36 on surface 32. Further shown is an optional aligning rear wall 34 in the sheet material holder to align the sheets of material to be dispensed and projection 15 to maintain the sheets of material aligned until dispensed. Also shown is rear wall 30 of the sheet material holder.

Figure 4 shows the dispenser in cross-section in an open orientation. The space 40 will contain the sheets of material.

Figure 5 shows the dispenser dispensing one of a plurality of sheets of material 42. The holder is opened from the housing as shown in Figure 4. When the ejector 16 is depressed and the holder 22 returned into housing 12 to regain a closed position end 19 of appendage 17 contacts a sheet of material and dispenses the sheet of material. The strip of material is substantially ejected when the strip material holder is almost fully closed. The amount of sheet material ejected from the dispenser in a cycle will depend on the distance that the strip material holder is moved from the housing during a dispensing cycle.

Figure 6 shows the sheet of material holder 22 in cross-section separate from the housing 12. Figure 7 shows the housing 12 separate from the sheet material holder.

Figure 8 is a bottom plan view of the housing 12. This shows in more detail the ejector 16, appendage 17 and appendage end 19.

Figure 9 is a bottom plan view of the dispenser. This shows housing walls 18 and 18(a) and additional gripping ridge 36(a). Walls 18 and 18(a) have a decorative undulating surface which also can aid in gripping the dispensers.

Figures 10 and 11 discloses an alternate embodiment for ejector 16. In this view there is a housing 60, a housing top surface 54, and a cantilevered ejector 50. This ejector 50 has an appendage 52 and has functionally the same structure as that for ejector 16. The end 59 of appendage 52 will contact the sheet of material to be dispensed. The ejector 50 is hinged at 57 to the top surface 54 of the housing 60. The housing has a rear wall 55 and sidewalls 58 and 58(a). The sheet material holder 22 is the same as that for the prior embodiment. There is a front wall 24 which extends up from bottom surface 32 and a rear wall 34. This bottom surface has gripping ridges 36 and 36(a). The rear wall 34 of the holder 22 supports and aligns the rear edge of sheets 42. The ejector 50 has a latching unit 62 on each side to limit the travel of ejector 50 but to permit it to move downward to dispense sheets of material. It will not move above top 54 which would expose the strips of material to the exterior of the dispenser and possible contamination.

Figures 12 to 15 show this embodiment of the dispenser in operation. As ejector 50 is pushed downward and the sheet material holder 22 is moved rearward to a closed position a sheet of material 42(a) from the stack of sheets 42 is moved forward and out of the holder 22.

Figure 12 shows the dispenser open and ready to be closed to initiate the dispensing of a sheet of material. A pressure downward on appendage 52 of ejector 50 while closing the dispenser moves a sheet of material 42(a) forward. Figure 13 shows the dispenser being closed by the movement of the holder into the housing 60. There is a pressure on the ejector 50 and appendage 52 at this time. The sheet of material 42(a) is being ejected from the holder 22. This is shown additionally in Figure 14 where the dispenser is more fully closed and the sheet of material more fully dispensed. Figure 15 shows the dispenser almost closed with sheet of material ejected to a maximum extent. Figure 16 shows the sheet of material fully dispensed and the dispenser returned to a closed position. The closing of the dispenser places the unit in a position for another dispensing cycle. A sheet of material is dispensed during each closing cycle of the dispenser by depressing the actuator 50 and thus the appendage 52. As the holder retracts into the

housing a sheet of material 42(a) is moved forward and can be grabbed when sufficiently moved from the holder 22. When an edible material it can be grabbed by a persons lips and ingested. It need not be grabbed by a persons fingers. However it can be grabbed by the fingers and then placed into the mouth.

The dispenser can be made of essentially any thermoplastic. These include polymers and copolymers of ethylene and propylene such as polyethylene, polypropylene and polyethylene terephthalate. The ejector 16 can be made of any deformable and resilient materials which include ABS polymers. The appendage will be made of a similar material. There are no restrictions on the materials that can be used to make the dispenser. However the above noted materials are preferred due to their availability at a low cost and the vast experience in molding these materials.

The sheets of material to be dispensed include tickets, coupons, business cards and sheets of edible materials. The edible materials include flavored sheets that can be used to freshen a persons breath. There are yet many other uses for these dispensers. For edible sheets of material they can be dispensed without having one's fingers contact the sheet of material. Further is a sheet is grabbed by a persons fingers the dispenser is in a closed position with a reduced chance of contamination of the other sheets of material.

Claims

What is claimed is:

1. A dispenser for sheets of material comprising a housing and a sheet holder, the sheet holder slideably fitting into the housing, the housing having an upper wall, a sheet ejector carried by said top wall, the sheet ejector having an appendage extending downwardly therefrom to contact said sheets of material, whereby to dispense at least one sheet said sheet holder is at least partially extended from said housing, said sheet ejector is depressed whereby said appendage contacts at least one sheet, and upon the return of said sheet holder into said housing at least one sheet is dispensed.

2. A dispenser as in claim 1 wherein said sheet holder engages the housing in an interfitting relationship to maintain said sheet holder slideably in said housing.

3. A dispenser as in claim 2 wherein a sidewall of said housing engages a sidewall of said sheet holder whereby the sheet holder can be moved inwardly and outwardly from the housing.

4. A dispenser as in claim 1 wherein the sheet ejector has a deformable portion, the appendage extending from the deformable portion.

5. A dispenser as in claim 4 wherein said appendage has a length of at least up to that necessary to contact the bottom inner surface of the sheet holder when assembled into the housing and said sheet ejector is fully depressed.

6. A dispenser as in claim 4 wherein said appendage had an arc shape.

7. A dispenser as in claim 4 wherein said appendage is flexible.

8. A dispenser as in claim 4 wherein said appendage is flexible and arc shaped and has a length of up to that necessary to contact the bottom inner surface of the sheet holder when assembled into the housing.

9. A dispenser as in claim 1 wherein said housing is a thermoplastic material.

10. A dispenser as in claim 1 wherein said sheet holder is a thermoplastic material.

11. A dispenser as in claim 1 wherein said ejector is hingedly attached to said upper wall where upon depressing said ejector said appendage will contact said sheets of material.

12. A dispenser as in claim 11 wherein said ejector comprising at least one latching unit to limit travel of said ejector.

13. A dispenser as in claim 11 wherein said sheet holder engages the housing in an interfitting relationship to maintain said sheet holder slideably in said housing.

14. A dispenser as in claim 13 wherein a sidewall of said housing engages a sidewall of said sheet holder whereby the sheet holder can be moved inwardly and outwardly from the housing.

15. A dispenser as in claim 14 wherein said appendage has a length of at least up to that necessary to contact the bottom inner surface in the sheet folder when assembled into the housing and said sheet ejector is fully depressed.

16. A dispenser as in claim 15 wherein said appendage had an arc shape.

17. A dispenser as in claim 15 wherein said appendage is flexible.

18. A dispenser as in claim 15 wherein said appendage is flexible and arc shaped and has a length of up to that necessary to contact the bottom inner surface of the sheet holder when assembled it to the housing.

19. A dispenser as in claim 11 wherein said housing is a thermoplastic material.

20. A dispenser as in claim 12 wherein said sheet holder is a thermoplastic material.

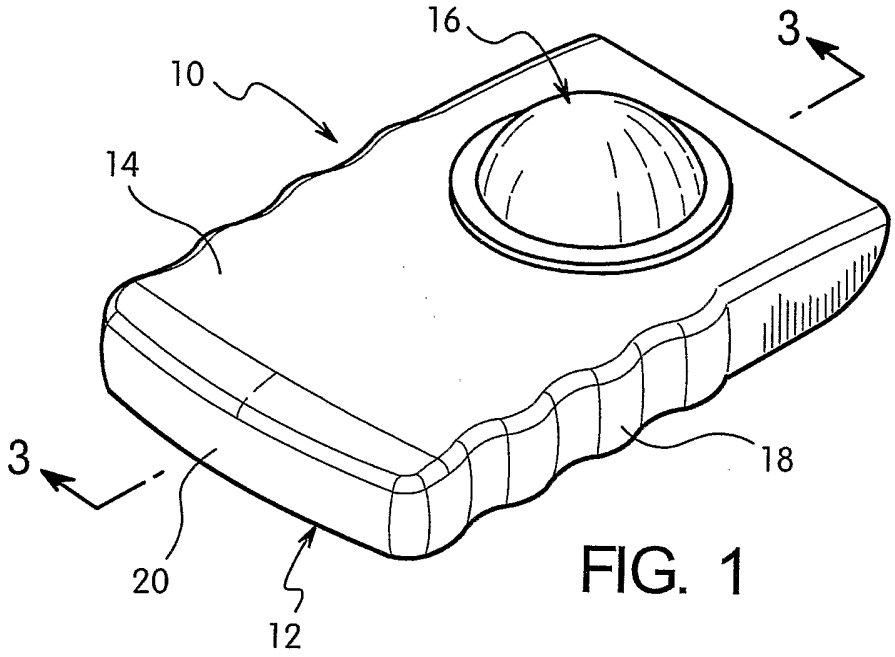


FIG. 1

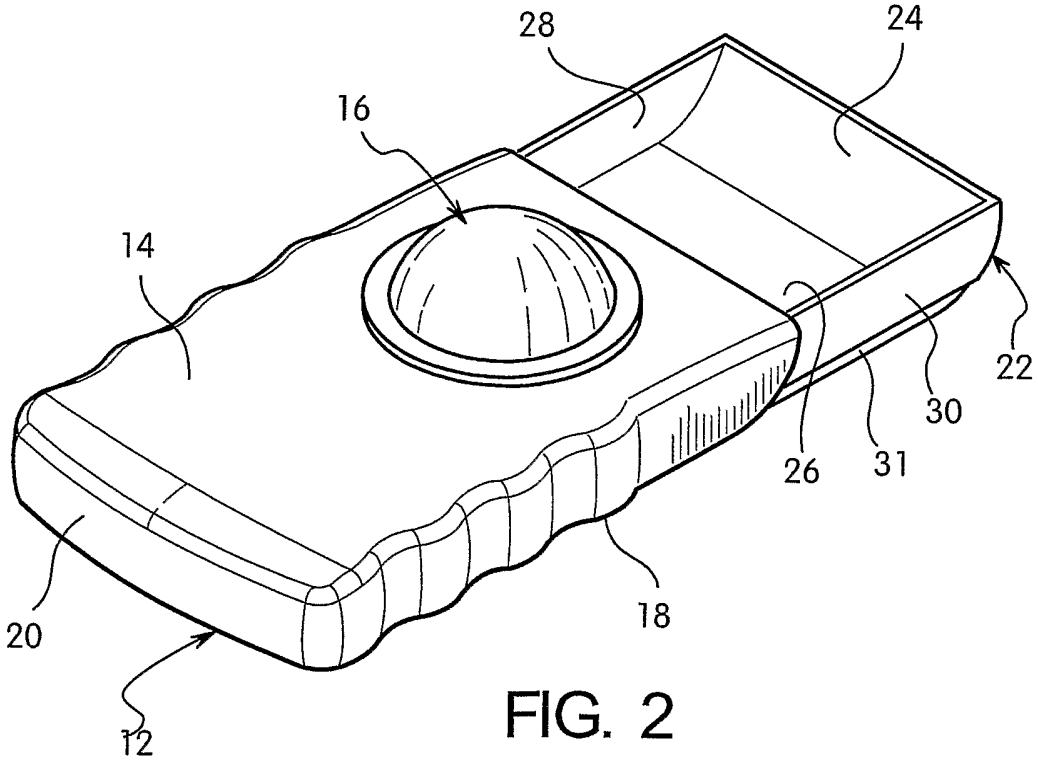


FIG. 2

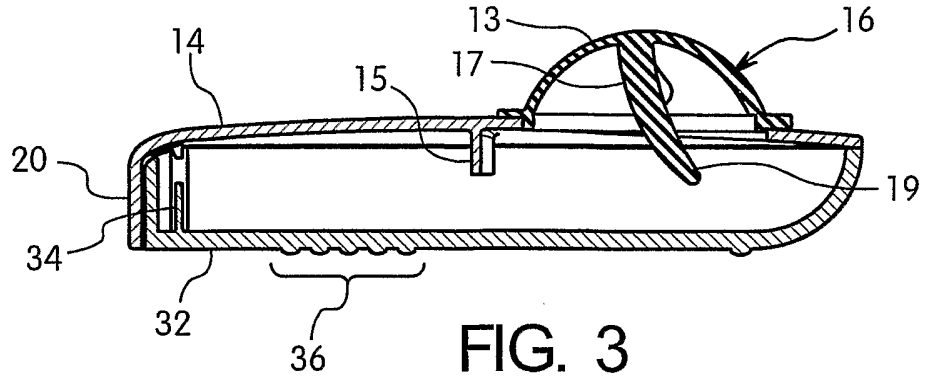


FIG. 3

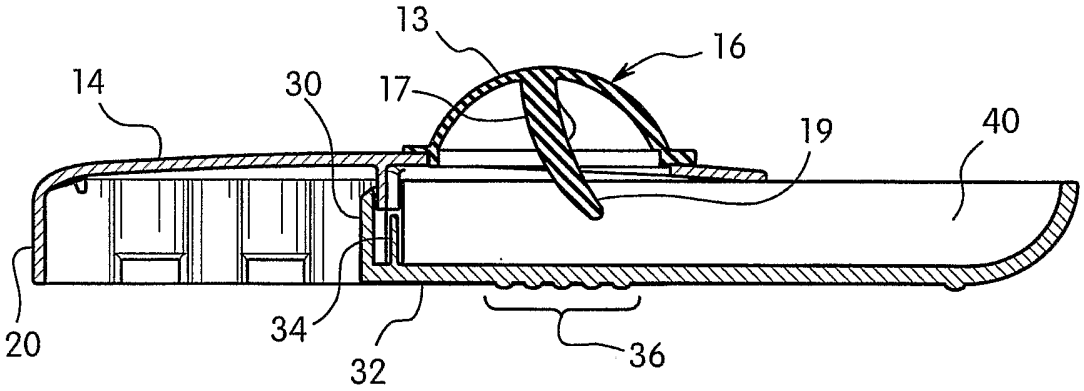


FIG. 4

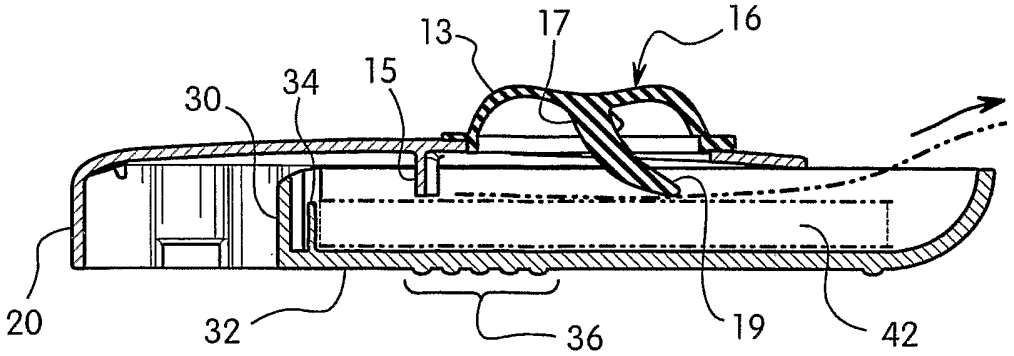


FIG. 5

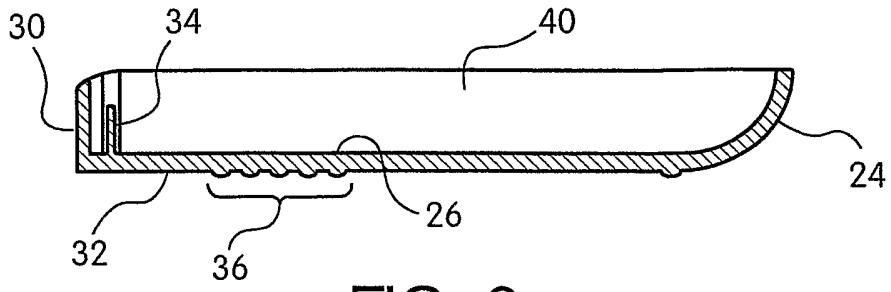


FIG. 6

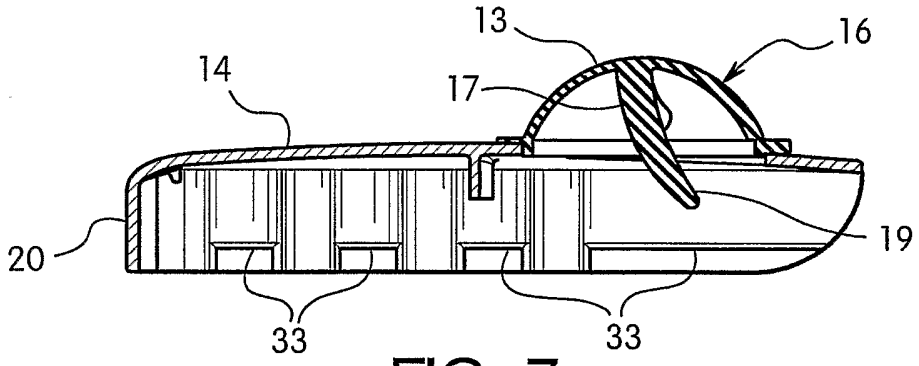


FIG. 7

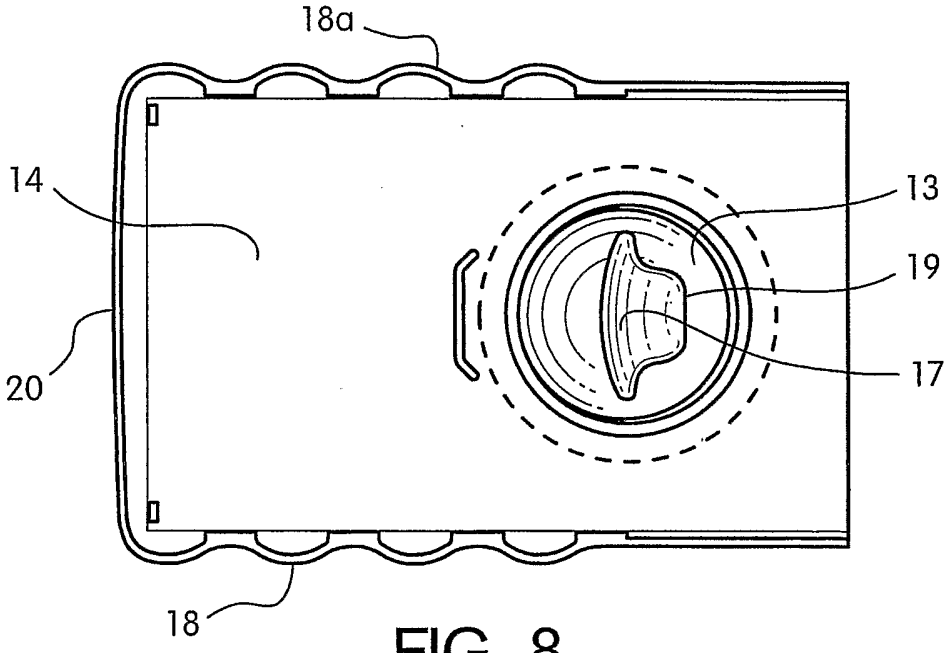


FIG. 8

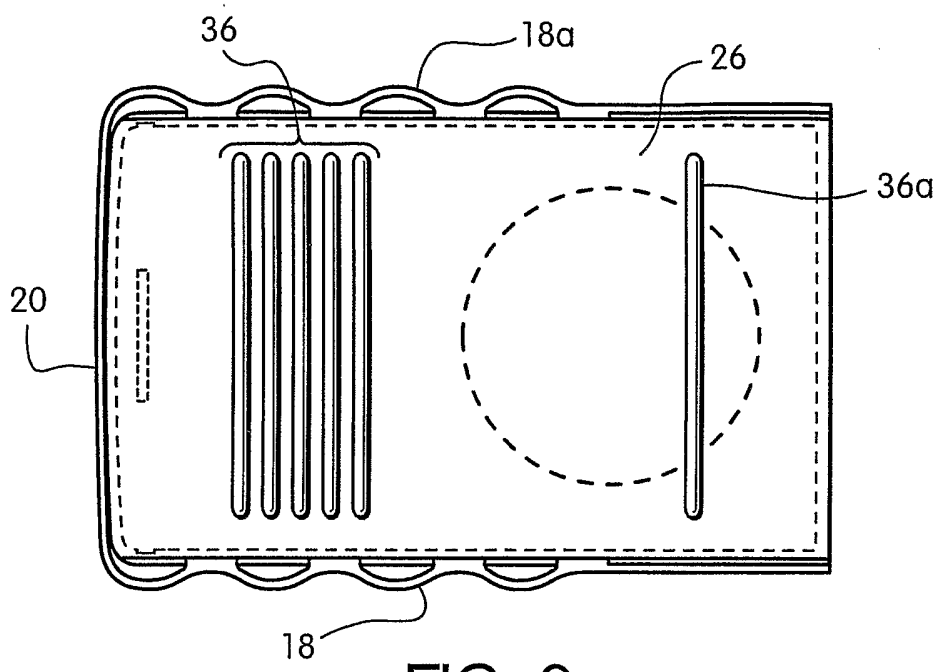


FIG. 9

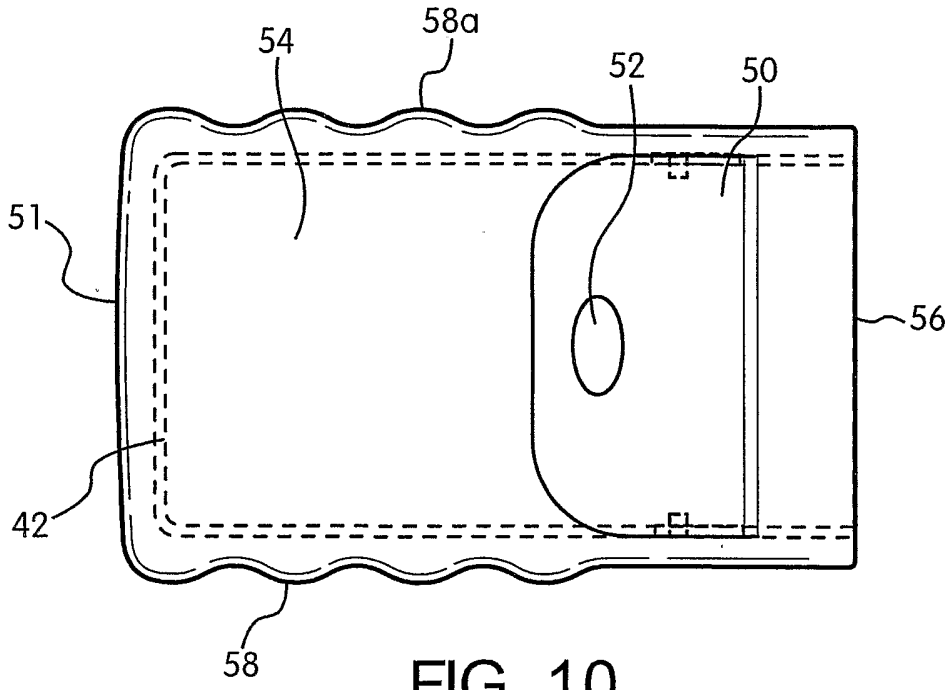


FIG. 10

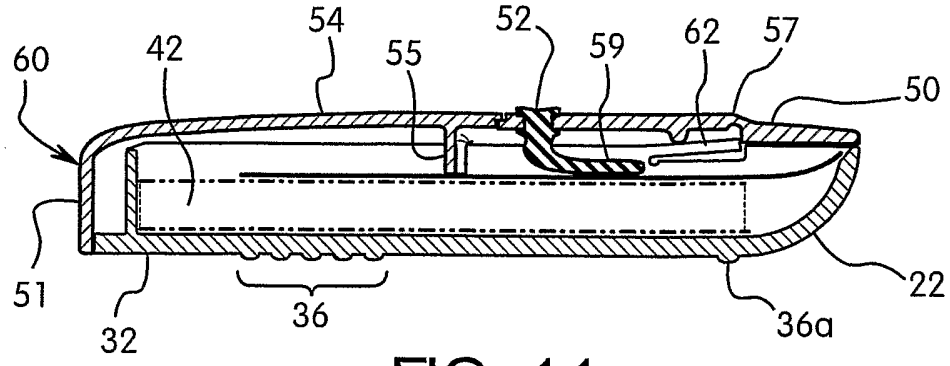


FIG. 11

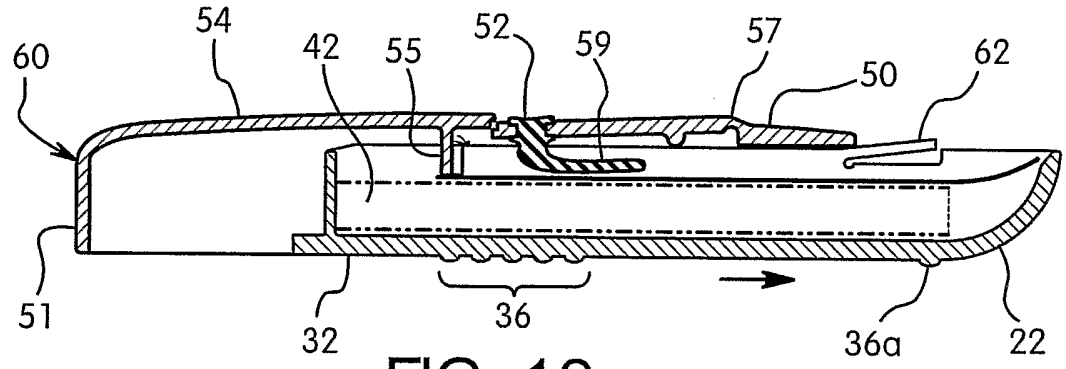


FIG. 12

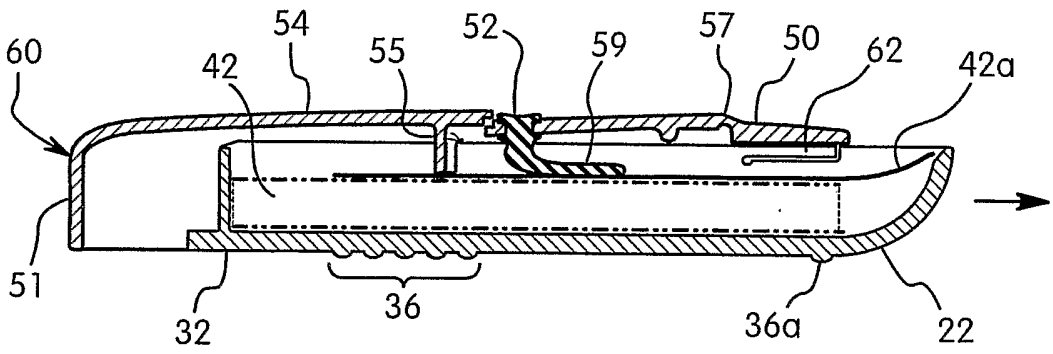


FIG. 13

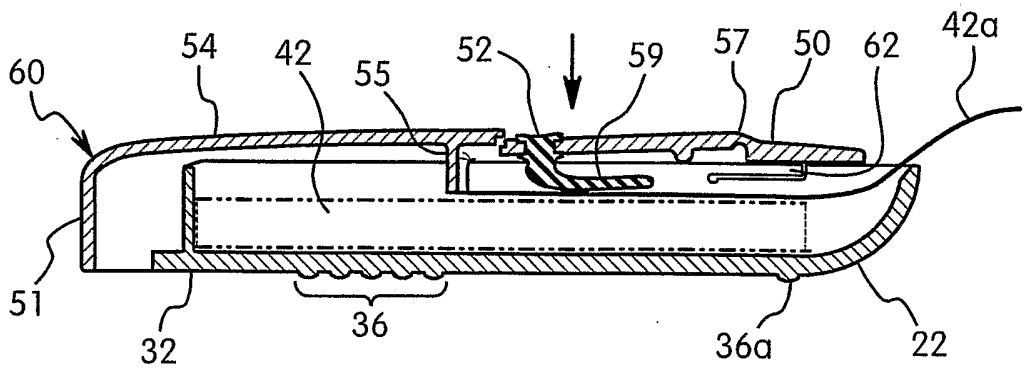


FIG. 14

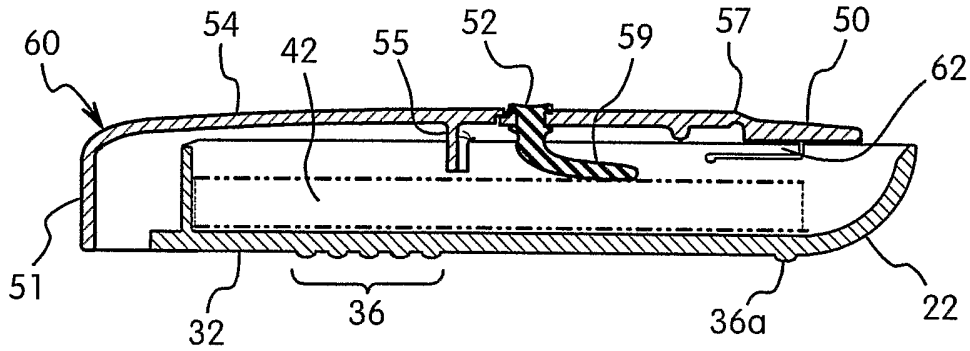


FIG. 15

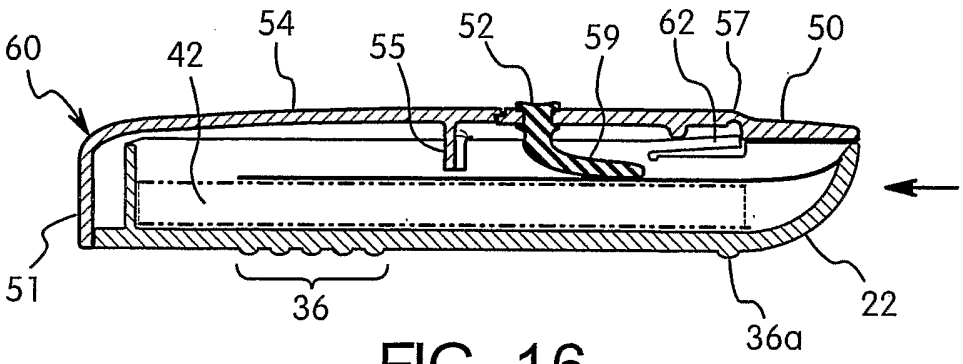


FIG. 16

INTERNATIONAL SEARCH REPORT

Internati Application No
PCT/US 03/28160

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D83/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 201 19 188 U (STORZ ACHIM) 21 February 2002 (2002-02-21) the whole document	1-10
Y		11-20
Y	DE 23 65 498 A (HEFENDEHL HANS FRIEDRICH) 13 March 1975 (1975-03-13) page 8, line 21 -page 9, line 12; figures	11-20

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☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
9 January 2004	20/02/2004

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Gino, C

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Internat Application No
PCT/US 03/28160

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 20119188 U	21-02-2002	DE 20119188 U1	21-02-2002
		DE 10253793 A1	05-06-2003
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