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(54) Title: EASY-OPENING FLEXIBLE CONTAINER

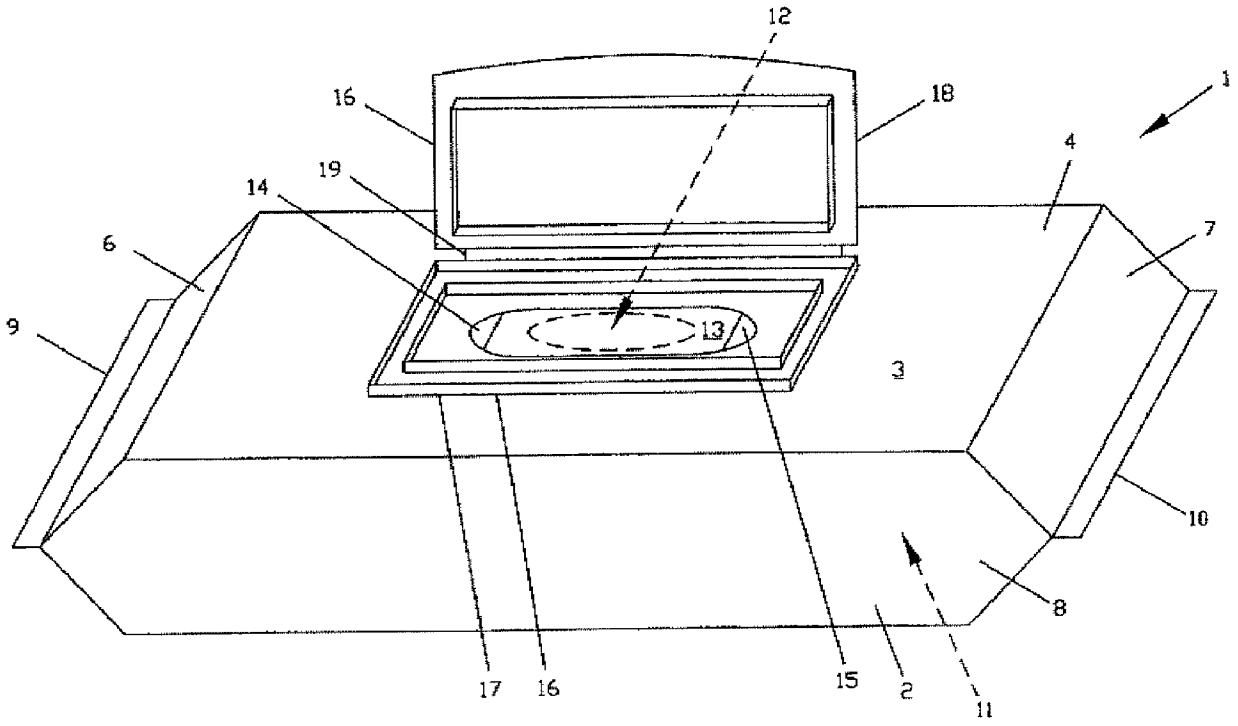

FIG. 1

(57) Abrégé/Abstract:
A flexible container (1) including a flexible pouch (2) having a dispensing aperture (12) through which an interior space (11) is accessible from outside the flexible pouch (2), a flexible sealing member (13) releasably attached to the flexible pouch (2) and covering the dispensing aperture (12), and a rigid closure element (16) surrounding the dispensing aperture (12). The flexible sealing member (13) has at least two lifting tabs (14, 15) for lifting the flexible sealing member (13) and thereby exposing the dispensing aperture (12). The rigid closure element (16) has a base (17) permanently attached to the flexible pouch (2) and lid (18)

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(57) Abrégé(suite)/Abstract(continued):
connected to the base (17) by a hinge (19). At least one of the lifting tabs (14, 15) is likely to not be obstructed by the rigid closure element (16) when the lid (18) is in an open condition, thereby remaining usable for lifting the flexible sealing member (13) to expose the dispensing aperture (12), even if another lifting tab (14, 15) is obstructed by the rigid closure element (16).

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(54) Title: EASY-OPENING FLEXIBLE CONTAINER

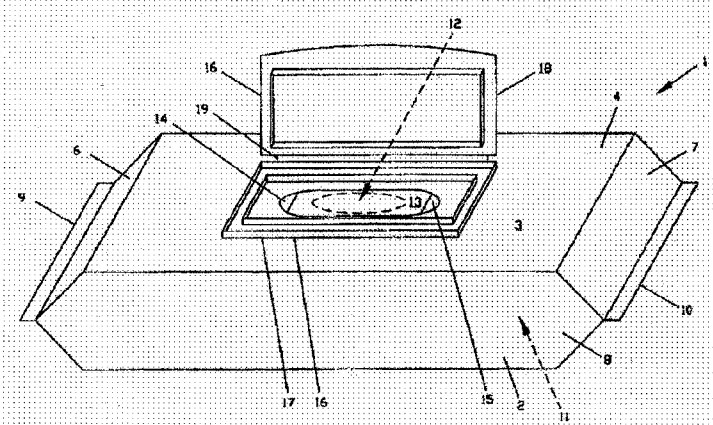

FIG. 1

(57) Abstract: A flexible container (1) including a flexible pouch (2) having a dispensing aperture (12) through which an interior space (11) is accessible from outside the flexible pouch (2), a flexible sealing member (13) releasably attached to the flexible pouch (2) and covering the dispensing aperture (12), and a rigid closure element (16) surrounding the dispensing aperture (12). The flexible sealing member (13) has at least two lifting tabs (14, 15) for lifting the flexible sealing member (13) and thereby exposing the dispensing aperture (12). The rigid closure element (16) has a base (17) permanently attached to the flexible pouch (2) and lid (18) connected to the base (17) by a hinge (19). At least one of the lifting tabs (14, 15) is likely to not be obstructed by the rigid closure element (16) when the lid (18) is in an open condition, thereby remaining usable for lifting the flexible sealing member (13) to expose the dispensing aperture (12), even if another lifting tab (14, 15) is obstructed by the rigid closure element (16).

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EASY-OPENING FLEXIBLE CONTAINER

FIELD OF THE INVENTION

This invention relates to a flexible container enclosing articles to be dispensed through an aperture.

BACKGROUND OF THE INVENTION

Many types of household and personal care articles, such as dust cloths, wipes, wet wipes, facial cloths, and baby cloths may be packaged inside flexible containers. In a typical flexible container for packaging such goods, a flexible pouch is formed of a flexible sheet material. Access into the interior of the pouch is typically provided by way of a dispensing aperture in the sheet material.

The dispensing aperture is typically closed by a flexible sealing member to prevent contamination and/or drying of the article(s) contained inside the pouch prior to use. The flexible sealing member is typically adhered to the pouch by means of an adhesive. At one end of the flexible sealing member, a lifting tab is typically provided for use in lifting the flexible sealing member in order to expose the dispensing aperture and thereby gain access to the interior of the pouch.

Some flexible containers are outfitted with rigid closure elements. A typical rigid closure element includes two elements that interlock, such as a base that is adhered to the pouch and a hinged lid. However, such a rigid closure element may fail to seal tightly and thereby fail to prevent contamination of the article(s) and/or moisture loss from article(s) such as wet wipes. One solution has been to provide both a flexible sealing member to close the dispensing aperture and a rigid closure element to cover both the flexible sealing member and the dispensing aperture.

When only a flexible sealing member or only a rigid closure element is present, the requirement for its placement during manufacture is simply that the flexible sealing member or the rigid closure element must close the dispensing aperture, thereby preventing exposure of the enclosed article(s). In order to facilitate meeting this requirement, the flexible sealing member or the rigid closure element may be made substantially larger than the dispensing aperture, such that minor misplacement does not result in a failure to close the dispensing aperture.

However, when both a flexible sealing member and a rigid closure element are present, their placements are interrelated. For example, relative misplacement of the rigid closure element may obstruct the lifting tab on the flexible sealing member and thereby prevent the user from lifting the flexible sealing member for access to the enclosed article(s). Since the rigid closure element is typically strongly secured to the flexible pouch, the user is then forced to open the flexible container in some other way, such as cutting or tearing the flexible pouch. Of course, a flexible pouch that has been cut or torn open typically cannot be resealed, and the original purpose of enclosing the article(s) inside the flexible container is thus defeated.

The relative misplacement of either the flexible sealing member or the rigid closure element may also result in higher manufacturing cost due to the scrapping of defective product and/or the necessity to spend more on equipment, training, and inspection in order to minimize the number of defective products reaching the users. In addition, users who encounter defective products may lose faith in the product.

Hence, it would be beneficial to provide a flexible container having both a flexible sealing member and a rigid closure element configured such that the problems described above would be less likely to occur.

SUMMARY OF THE INVENTION

A flexible container includes a flexible pouch having a dispensing aperture through which an interior space is accessible from outside the flexible pouch, a flexible sealing member releasably attached to the flexible pouch and covering the dispensing aperture, and a rigid closure element surrounding the dispensing aperture. The flexible sealing member has at least two lifting tabs for lifting the flexible sealing member and thereby exposing the dispensing aperture. The rigid closure element has a base attached to the flexible pouch and lid connected to the base by a hinge. At least one of the lifting tabs is likely to not be obstructed by the rigid closure element when the lid is in an open condition, thereby remaining usable for lifting the flexible sealing member to expose the dispensing aperture, even if another lifting tab is obstructed by the rigid closure element.

BRIEF DESCRIPTION OF THE DRAWING

Figure 1 shows a perspective view of an exemplary flexible container.

Figure 2 shows a perspective view of another exemplary flexible container.

DETAILED DESCRIPTION OF THE INVENTION

The term "disposed" refers to an element being attached and positioned in a particular place or position in a unitary structure with other elements.

The term "attach" refers to elements being connected or united by fastening, adhering, bonding, *etc.* by any method suitable for the elements being attached together and their constituent materials. Many suitable methods for attaching elements together are well-known, including adhesive bonding, pressure bonding, thermal bonding, *etc.* Such attachment methods may be used to attach elements together over a particular area either continuously or intermittently. Unless indicated otherwise, elements that are described as being attached to each other are attached directly together, with either nothing or only bonding material, *e.g.*, an adhesive, between them. Elements may be attached "permanently", *i.e.*, attached in such a way that one or both of the elements and/or any bonding material that is present must be damaged in order to separate them. This permanent attachment excludes temporary attachment, such as fastening elements together by means of fasteners that may be unfastened. Alternatively, elements may be attached "releasably", *i.e.*, attached in such a way that neither of the elements needs to be damaged in order to separate them.

The term "laminate" refers to elements being attached together in a layered arrangement.

The term "cohesive" refers to the property of a material that, once set, sticks to itself but does not to any significant degree stick to other materials.

The terms "water-permeable" and "water-impermeable" refer to the penetrability of materials in the context of the intended usage of disposable absorbent articles. Specifically, the term "water-permeable" refers to a layer or a layered structure having pores, openings, and/or interconnected void spaces that permit liquid water to pass through its thickness in the absence of a forcing pressure. Conversely, the term "water-impermeable" refers to a layer or a layered structure through the thickness of which liquid water cannot pass in the absence of a forcing pressure. As is well known in the art, a common method for measuring the permeability to water of the materials is a hydrostatic pressure test, also called a hydrostatic head test or simply a "hydrohead" test. Suitable well known compendial methods for hydrohead testing are approved by INDA (formerly the International Nonwovens and Disposables Association, now The Association of the Nonwoven Fabrics Industry) and EDANA (European Disposables And Nonwovens Association).

The term "nonwoven" refers to a sheet, web, or batt of directionally or randomly oriented fibers, made by bonding or entangling the fibers through mechanical, thermal, or chemical means. Nonwoven materials exclude paper and products which are woven, knitted, tufted, or felted by wet milling. The fibers are preferably but not necessarily man-made synthetics.

A flexible container may have any shape suitable for enclosing its contents, such as a stack or a roll of substrate sheets, such as wipes. For example, the flexible container may be cylindrical, polygonal, or parallelepipedal in shape.

Each of **Figure 1** and **Figure 2** illustrates an exemplary embodiment of a flexible container **1** in which a flexible pouch **2** is formed of a flexible polymeric sheet material **3**, which may be water-impermeable if the need to contain moisture or the need to exclude moisture exists, or may be water-permeable if neither of these needs exists. The flexible pouch **2** has a top wall **4**, an opposing bottom wall (not shown in the figures for clarity), opposing end walls **6** and **7**, a front side wall **8**, and an opposing rear side wall (not shown in the figures for clarity), arranged in a generally parallelepipedal configuration. The opposing end walls **6** and **7** are closed by end seals **9** and **10**. The walls define and enclose the interior space **11** of the flexible pouch **2**.

The flexible pouch **2** has a dispensing aperture **12** in its top wall **4**. Such a dispensing aperture may be made in another of the walls, instead of or in addition to the top wall. The dispensing aperture **12** may be fully formed in the manufacturing process or may be defined, but not cut out, by perforation of the sheet material **3**. The exemplary dispensing aperture **12** shown in the figures has a relatively simple oval shape. The dispensing aperture **12** may have a different relatively simple shape, such as a rectangular shape, or may have a relatively complex shape, such as a generally rectangular shape with rounded corners, or a shape with multiple protrusions. In general, the dispensing aperture **12** may have any shape suitable for access into the interior space **11** of the flexible pouch **2**.

A flexible sealing member **13** overlies the dispensing aperture **12** and extends beyond the dispensing aperture in all directions so as to also overlie the immediately surrounding area and thereby cover the entirety of the dispensing aperture **12**. The flexible sealing member **13** is formed of a flexible material, which may be identical to the sheet material **3** of which the flexible pouch **2** is formed. The flexible sealing member **13** is releasably attached to the flexible pouch **2** by any method suitable for the materials involved, including, for example, adhesive attachment, cohesive attachment, or a combination of suitable methods. In embodiments in which the dispensing aperture **12** is only defined, but not cut out, by perforation in the

manufacturing process, the formation of the dispensing aperture **12** may be completed by the user when lifting the flexible sealing member **13**, at which time the attachment of the flexible sealing member **13** to the sheet material **3** may cause the weakened sheet material **3** to tear where it was perforated.

The flexible sealing member **13** has lifting tabs **14** and **15** located along the periphery of the flexible sealing member **13**. These lifting tabs **14** and **15** adapted to be grasped by a user and used to lift the flexible sealing member **13** away from the surface of the flexible pouch **2** to thereby expose the dispensing aperture **12**. In the embodiment of **Figure 1**, opposing lifting tabs **14** and **15** are located along the periphery of the flexible sealing member **13** near the opposing end walls **6** and **7** of the flexible pouch **2**. Such lifting tabs may be provided along the periphery of the flexible sealing member **13** near the side walls of the flexible pouch **2**, instead of or in addition to the locations shown in **Figure 1**. Similarly, such lifting tabs may be provided anywhere along the periphery of the flexible sealing member **13**, instead of or in addition to the locations shown in **Figure 1** or previously described. For example, in the embodiment of **Figure 2**, the lifting tabs **14** and **15** are located along the periphery of the flexible sealing member **13** in adjacent quadrants of the flexible sealing member **13**, *i.e.*, one lifting tab **14** is located relatively nearer the end wall **6** of the flexible pouch **2** and the other lifting tab **15** is located relatively nearer the front side wall **8** of the flexible pouch **2**.

The exemplary flexible sealing member **13** shown in the figures has a relatively simple oval shape and each of the lifting tabs **14** and **15** is shown in the figures as having the relatively simple shape of a segment of the oval. The flexible sealing member **13** may have a different relatively simple shape, such as a rectangular shape, or may have a relatively complex shape, such as a generally rectangular shape with rounded corners, or a shape with multiple protrusions. In general, the flexible sealing member **13** may have any shape suitable for covering the aperture **12**. Likewise, each of the lifting tabs **14** and **15** may have a different relatively simple shape, such as a rounded shape or a rectangular shape, or may have a relatively complex shape, such as a shape with multiple protrusions. In general, each of the lifting tabs **14** and **15** may have any shape suitable for being grasped by the user. The exemplary lifting tabs **14** and **15** shown in the figures generally conform to the general contour of the flexible sealing member **13**. In some embodiments, the lifting tabs **14** and **15** may have the forms of distinct protuberances projecting outward from the general contour of the flexible sealing member **13**.

The provision of multiple lifting tabs reduces the likelihood that the user will not be able to lift the flexible sealing member to gain access to the article(s) enclosed inside the interior space of the flexible pouch. In particular, if relative misplacement of the flexible sealing member and the rigid closure element results in the obstruction of one of the lifting tabs, another lifting tab will likely remain usable. Likewise, if one lifting tab is defective in some way, such as by being adhered securely to the flexible pouch, it is likely that another lifting tab will remain usable. Additionally, the provision of multiple lifting tabs makes it possible to open the dispensing aperture with either hand, thus facilitating access to the enclosed article(s) by both left-handed and right-handed users, as well as by a user whose one hand is occupied in a task, such as holding a child, and who therefore must use his or her free hand, which may be left or right, to reach for the enclosed article(s).

The lifting tabs may be free of attachment to the flexible pouch or may be attached relatively weakly in comparison to the remainder of the flexible sealing member, such as by an adhesive having a low peel force or simply by a lighter coverage of adhesive than is used to attach the remainder of the flexible sealing member to the flexible pouch. Another way of attaching the lifting tabs relatively weakly to the flexible pouch is to provide an adhesive on one surface and a silicone coating on the mating surface. Relatively weakly attached lifting tabs may be desirable because they may remain adhered to the flexible pouch wall during its manufacturing process and thereby decrease the possibility of entanglement in the manufacturing equipment.

A rigid closure element **16** is attached onto the top wall **4** of the flexible pouch **2**. This rigid closure element **16** has a base **17** and a lid **18**. As is known in the art, such a base and a lid may be connected by a relatively flexible flap forming a hinge **19** as shown in the figures, or may be connected by a multi-piece hinge mechanism. In the figures, the lid **18** is shown in an "open" condition in which the flexible sealing member **13** and the dispensing aperture **12** are accessible. The base **17** and the lid **18** may engage in any suitable manner such that the lid will remain in a "closed" configuration once engaged with the base **17**. In order to subsequently gain access to the flexible sealing member **13** and the dispensing aperture **12**, the base **17** and the lid **18** must be disengaged such that the lid **18** can be swung on the hinge **19** to the "open" condition shown in the figures.

The exemplary rigid closure element **16** shown in the figures has a relatively simple rectangular shape. The rigid closure element **16** may have a different relatively simple shape,

such as a round shape or an oval shape, or may have a relatively complex shape, such as a generally rectangular shape with rounded corners, or a shape with multiple protrusions. In general, the rigid closure element **16** may have any shape suitable for covering the aperture **12**.

Examples of suitable engaging bases and lids can be found in U.S. Patent No. 4,156,493, U.S. Patent No. 4,185,754, U.S. Patent No. 6,702,109, U.S. Patent Application Publication No. 2005/0150785, U.S. Patent Application Publication No. 2005/0189367, U.S. Patent Application Publication No. 2005/0011906, U.S. Patent Application Publication No. 2007/0023436, and PCT Publication No. WO 00/064755.

The base **17** is attached to the sheet material **3** of the flexible sealing member **13** by any method suitable for the materials involved. This attachment may be permanent or releasable. As shown in **Figure 1**, the base **17** is disposed so as to surround the dispensing aperture **12** at a distance from it. The rigid closure element **16** is preferably placed so as to likewise surround the flexible sealing member **13** at a distance from it, thereby leaving both of the lifting tabs **14** and **15** accessible and usable. However, as explained above, some degree of relative misplacement of the rigid closure element **16** and the flexible sealing member **13** may be acceptable because of the provision of the multiple lifting tabs **14** and **15**, which increases the likelihood that at least one of the lifting tabs will remain usable, even if the relative misplacement is so great that another lifting tab is obstructed.

Each of the flexible pouch, the flexible sealing member, and the rigid closure element may be formed partially or wholly of a polymeric material, as is typical in the art. The polymeric material(s) utilized in the flexible pouch and/or the flexible sealing member may have the form of a film and may include only a single layer or multiple layers in a laminate structure. Such a laminate structure may include more than one film and/or may include a layer or layers in other forms, such as a fibrous sheet or a foil.

The rigid closure element may be formed partially or wholly of a moldable thermoplastic material, such as polypropylene, polyethylene, polystyrene, acrylonitryl butadiene styrene (ABS), polyester, polyvinyl chloride, polycarbonate or elastomer, or a blend of these materials. The rigid closure element may also, or alternatively, be formed partially or wholly of other materials, such as cardboard, corrugated paper, wood, cardstock, paper, ceramic, and combinations thereof.

The disclosures of all patents, patent applications and any patents which issue thereon, as well as any corresponding published foreign patent applications, and all publications listed

and/or referenced in this description, are hereby incorporated herein by reference. It is expressly not admitted that any of the documents or any combination of the documents incorporated herein by reference teaches or discloses the present invention. To the extent that any meaning or definition of a term in this document conflicts with any meaning or definition of the same term in a document incorporated by reference, the meaning or definition assigned to that term in this document shall govern.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

CLAIMS

What is claimed is:

1. A flexible container comprising:

a flexible pouch formed of a flexible sheet material and having walls defining and enclosing an interior space, the flexible pouch comprising a dispensing aperture formed in at least one of the walls, through which the interior space is accessible from outside the flexible pouch;

a flexible sealing member releasably attached to the flexible pouch and overlying and extending beyond the dispensing aperture so as to cover the entirety of the dispensing aperture, the flexible sealing member comprising at least two lifting tabs adapted to be used for lifting the flexible sealing member to thereby expose the dispensing aperture, the lifting tabs being either unattached to the flexible pouch or attached to the flexible pouch relatively more weakly than the remainder of the flexible sealing member; and

a rigid closure element comprising a base attached to the flexible pouch and disposed so as to surround the dispensing aperture at a distance from it, and a lid connected to the base by a hinge such that the lid may be swung from an open condition, in which the flexible sealing member and the dispensing aperture are accessible from outside the flexible pouch, to a closed condition, in which the lid is engaged with the base and obstructs access to the flexible sealing member and the dispensing aperture from outside the flexible pouch,

wherein at least one of the lifting tabs is not obstructed by the rigid closure element when the lid is in the open condition, thereby remaining usable for lifting the flexible sealing member to expose the dispensing aperture.

2. The flexible container of Claim 1 wherein at least one of the lifting tabs is free of attachment to the flexible pouch.

3. The flexible container of Claim 1 wherein at least one of the lifting tabs is attached to the flexible pouch by a first adhesive having a lower peel force than a second adhesive by which the remainder of the flexible sealing member is attached to the flexible pouch.

4. The flexible container of Claim 1 wherein at least one of the lifting tabs is attached to the flexible pouch by a lighter coverage of adhesive than the remainder of the flexible sealing member.

5. The flexible container of Claim 1 wherein the dispensing aperture is defined by perforation but is not cut out and the flexible sealing member is attached to the portion of the flexible sheet material surrounded by the perforation, such that lifting the flexible sealing member completes the formation of the dispensing aperture by tearing the flexible sheet material at the perforation.

6. The flexible container of Claim 1 wherein the lifting tabs are disposed at opposing portions of the flexible sealing member.

7. The flexible container of Claim 1 wherein the lifting tabs are disposed at adjacent portions of the flexible sealing member.

8. The flexible container of Claim 1 wherein the flexible sealing member has a substantially oval shape.

9. The flexible container of Claim 1 wherein the flexible sealing member has a substantially rectangular shape.

10. The flexible container of Claim 1 wherein the rigid closure element has a substantially oval shape.

11. The flexible container of Claim 1 wherein the rigid closure element has a substantially rectangular shape.

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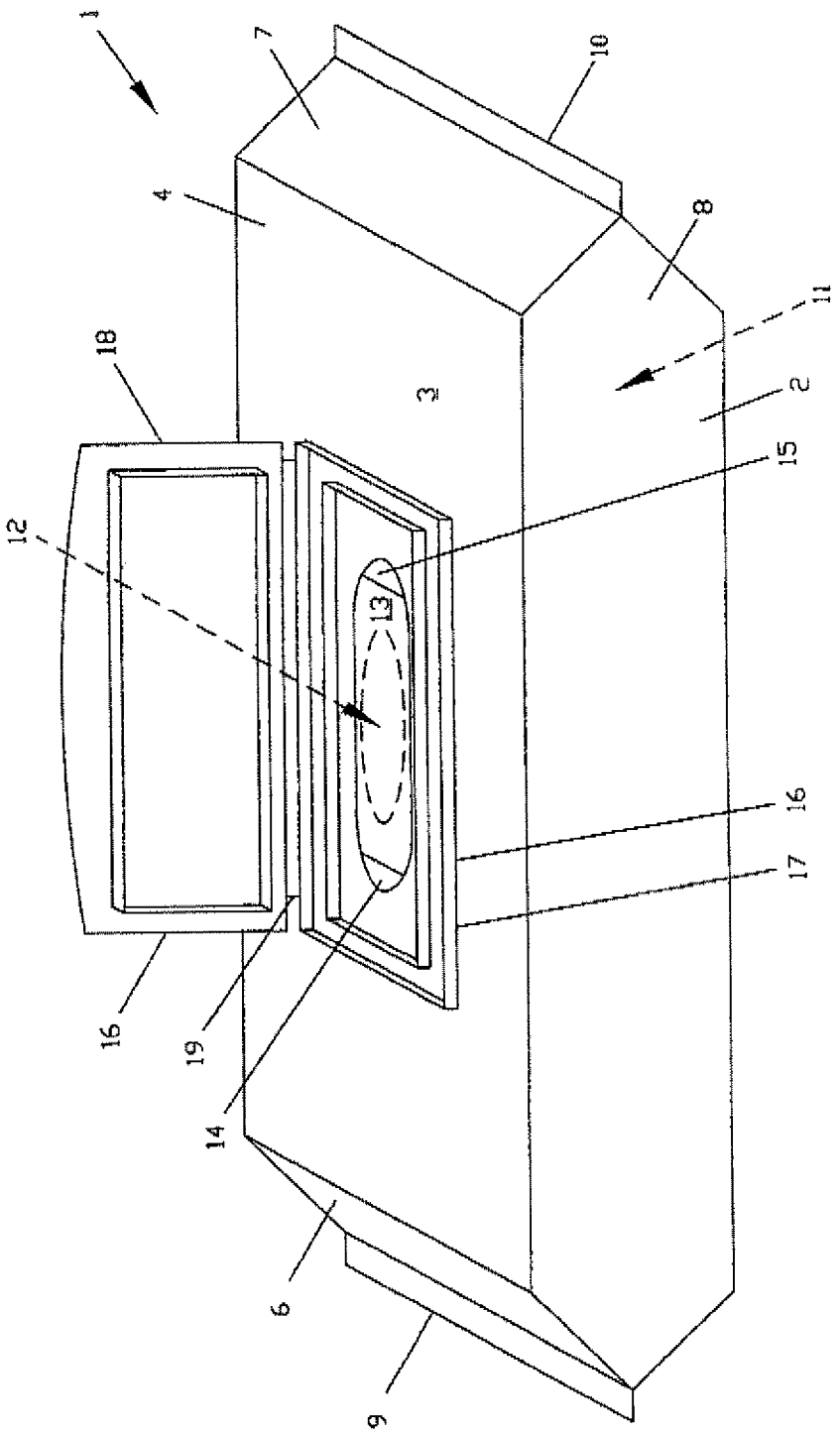

FIG. 1

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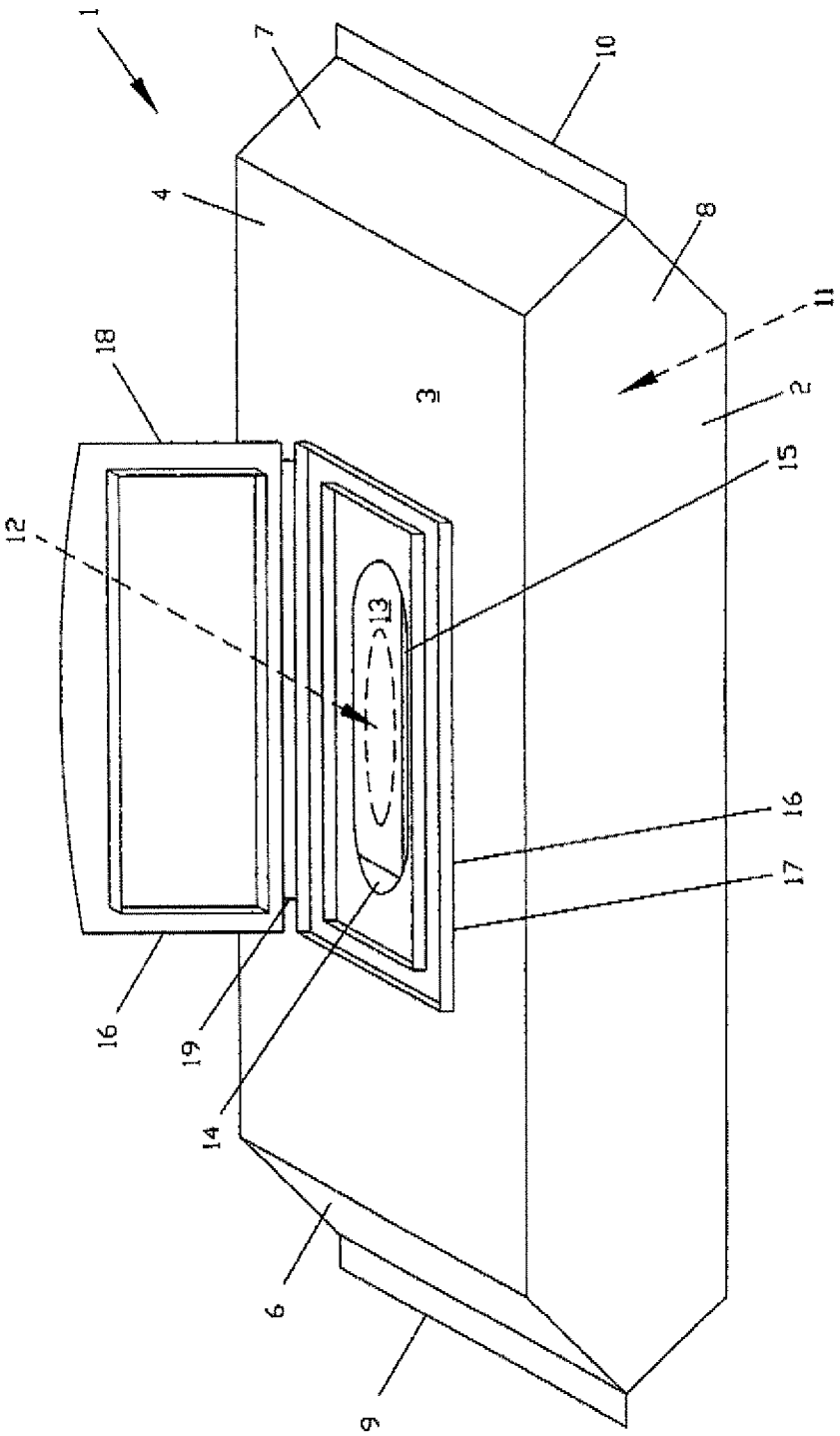

FIG. 2

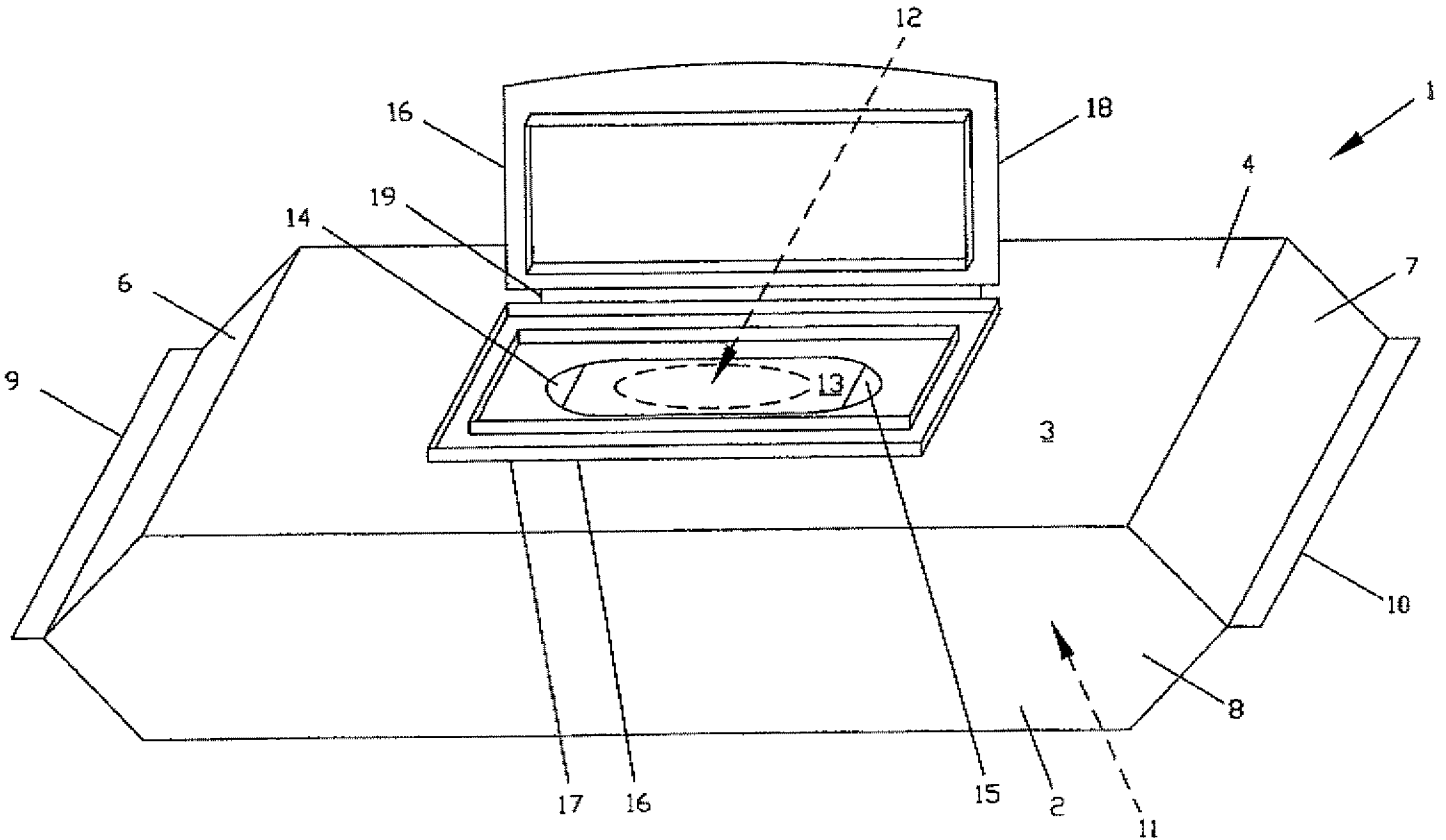

FIG. 1