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# (54) STOPPER FOR BRIK-TYPE CONTAINER WITH AIR ADMISSION

STOPFEN FÜR BEHÄLTER VOM BRIK-TYP MIT LUFTZUFUHR

BOUCHON POUR EMBALLAGE DE TYPE BRIQUE AVEC ENTRÉE D'AIR

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## Description

### Object of the Invention

**[0001]** As indicated by the title, the invention object of the present application consists of a stopper for a box-type container with air admission, the purpose of which is to pour out the liquid inside the receptacle without splashing or gushing.

**[0002]** The field of the art and scope of industrial application is comprised within the sector of stoppers for opening and closing box-type containers, and/or toppers in general for mouths of receptacles through which the liquid inside same is to be poured such that it flows out in an even manner.

### Background of the Invention

**[0003]** According to the analysis of the prior art, there is currently no product having identical or similar features.

**[0004]** Therefore, the object of the proposed invention provides fundamental advantages for the application thereof that are not covered by other similar or alternative means.

**[0005]** The stopper for a box-type container with air admission allows the fluid contained in the container to be poured out in an even manner and without splashing and/or gushing.

**[0006]** Currently, all stoppers for closing box-type containers have a pour spout with a single mouth for the outflow of the liquid from inside same, and therefore while the liquid flows out, air must enter to take up the space left by the liquid as it is poured out.

**[0007]** Since the admission of air and the outflow of the liquid occur at the same time, an irregular flow of the liquid is generated as it flows out, which causes gushing and splashing the area where the liquid is poured out such that the emptying of the box is not easily controlled.

**[0008]** Document US4930683A discloses a parallelepipedal fiat-gabled package with a medial seam, and an area in the gable prepared such that it can be penetrated or separated along a closed curve and constitute a pouring hole. The package has a plastic pour-out structure with a flange surrounding the pouring hole, rigidly secured to the outer surface of the gable, and into the spout of which can be axially inserted a tube with a circumference that matches the closed curve. It has triangular teeth along the surface that faces the pouring hole, and a cap that can be repeatedly employed to close the spout, the inner surface of the package being coated with a hot-adhering film of plastic. The closure-flap cap is securely attached to the tube, by way of a connecting strip, and is articulated to the tab on the pour-out structure, which is in the form of a spout.

**[0009]** Document WO2005/009847 discloses a pouring spout closure comprising a flange (1), for welding to a composite packaging or to the film material of a container sealed therewith and a circular edge (2), extending upwards from on the above and a combined lid (3) and pouring spout which may be rotated and clipped on said edge (2), forming a piercing cutter device (4). Said piercing cutter device (4) comprises a part (7) of the lid top (5), which may be opened up from the lid surface about a pivoting axis (11). Two piercing cutters (9, 20) formed on the underside of said piece (7), behind the pivot axis (11) thereof and in the vicinity of lid edge (6), are thus retracted out over the plane of the underside of the flange (1) and pierce the composite packaging or film running beneath the flange. The lid and pouring spout (3) are then turned on the edge of the flange (2) such that both piercing cutters (9, 20) cut out an approximately 360° disc from the composite packaging or the sealing film and said disc is swung downwards.

**[0010]** Document US2010/0089790 discloses a container for delivering a nutritive substance. In an embodiment, the present invention comprises a container that protects a nutritive substance from contact with the contents of the container and from contact with the atmosphere until the consumer is ready to use or consume the product. When desired, a seal on the container is altered such that the nutritive substance can come into contact with the container contents, delivering the nutritive substance thereto.

**[0011]** Document US6098795 discloses a device that may be used for adding a selected first component to a second component that is in a main package, which device keeps the first component from the second component until a selected time before use. The device includes a delivery package which is mountable on the outside surface of the main package, and has a delivery opening, a control opening, and a cavity extending between the delivery opening and the control opening. When there is a first component, a compartment that contains this component is mounted inside the cavity so that it seals the delivery opening with a puncturable seal. A puncturer controllable by a user through the control opening is used for cutting through the compartment, including the puncturable seal, and the package to which the delivery package is mounted to release the first component into the main package at the selected time.

### Description of the Invention

**[0012]** It is provided a stopper for a box-type container with air admission according to claim 1.

**[0013]** The stopper for a box-type container with air admission splits the mouth for the outflow of the liquid contained in the box in two.

**[0014]** Both halves are identical, and this therefore allows admitting both air and a volume of the liquid that is flowing out

**[0015]** The space for the outflow in the stopper for a box-type container with air admission is split into two identical parts, a lower part through which the liquid flows out, and an upper part through which air is admitted. Furthermore, just as the liquid flows out directly through the

opening, air is admitted through a bent tunnel-like element produced by a movable part which allows the admission of air but does not allow the outflow of liquid contained in the box.

**[0016]** For all this to happen, the stopper is provided with elements that allow the screwing on and cutting of the film membrane and aluminum sheet protecting the packaged liquid until it is consumed.

**[0017]** Furthermore, it has been envisaged that the invention is comfortable and easy to use, and in the same manner it has been envisaged that the elimination and disposal thereof should also be easy and comfortable, without being an environmental hazard.

**[0018]** To complement the description that will be made below and for the purpose of helping to better understand the features of the invention, five sheets of drawings are attached to this specification based on which the innovations and advantages of the device object of the invention will be more easily understood.

## Brief Description of the Drawings

**[0019]** To understand the scope of the features and advantages of the object of the invention, five sheets of drawings are attached hereto that complete the description of a preferred embodiment that will be provided below, the content of said drawings being merely illustrative and non-limiting.

Figure 1 depicts the stopper assembly, i.e., the stopper, the seal and the mouth for admission with a base for being adhered to the box.
Figure 2 shows the fingerprint detail for opening the stopper.
Figures 4 and 5 show the movable part for the admission of air.
Figure 6 shows the arrangement of the stopper at the inlet of the mouth of the receptacle.
Figure 7 shows the admission mouth of the receptacle and guides of the movable part for the admission of air.
Figure 8 shows a view of the elements of the stopper for opening the aluminum and plastic film membrane of the box.
Figure 9 shows device for inserting and fitting the stopper to the pouring mouth.
Figure 10 shows a section and a detail of the position of the film on box once it is cut.
Figure 11 shows a view from the lower part and the upper part for the admission of air and the outflow of liquid.
Figure 12 shows a box with a position of the stopper and cutaway view of the aluminum-plastic-film protecting the content.

FIGURE 1

(1) STOPPER
(2) SEAL
(3) TONGUE
(4) MOUTH
(5) BASE

FIGURE 2
(6) FINGERPRINT
FIGURE 3

(7) CLIP OF THE STOPPER
(8) CUTTING OF THE FILM
(9) INNER SPACE OF THE BOX

FIGURE 4

(10) MOVABLE PART
(11) STRIPS
(12) BUTT END
(13) BOX
(14) LIFTING-PART

FIGURE 5
(15) CLOSURE
FIGURE 6

(16) CUTTING PART
(17) PUSHING PART

FIGURE 7
(18) GUIDES
FIGURE 8
(19) TOOTHING
FIGURE 9
(20) SLOT
FIGURE 10
(21) SMALL BENT SHEETS
FIGURE 11

(22) UPPER PART FOR THE ADMISSION OF AIR
(23) LOWER PART FOR THE OUTFLOW OF LIQUID
(24) ADHESIVE

FIGURE 12
(25) FILM

## Description of a Preferred Embodiment

**[0020]** It can be seen in Figure 1 that the stopper (1) is the part that is manipulated and used to open and close the mouth (4) for the outflow of liquid.

**[0021]** Before being opened, the stopper (1) is attached to the mouth (4) by means of a seal (2) having a tongue (3).

**[0022]** By pulling on it, the precuts between the seal (2) and the stopper (1) are broken on both sides with the mouth (4) and the stopper (1) being detached and the

mouth (4) being opened.

**[0023]** The mouth (4) is integral with a base (5) that is glued to the cardboard of the brik-type container.

**[0024]** Figure 2 shows that in order to take the stopper (1) out of the mouth (4) and put it back in, said stopper (1) has fingerprints (6) where, for greater comfort, the index finger and thumb of the user are placed in the concave shape of said fingerprints (6) to more readily remove the stopper (1) by making a riser.

**[0025]** Figure 3 shows that the stopper (1) for closing the mouth (4) is clipped on by gentle pressure into the mouth (4), and as a result of the bending of the plastic material of said stopper, its perimetral rib is clipped in the riser of the mouth (4).

**[0026]** When the stopper (1) is inserted in the mouth (4), it breaks the plastic film (25), cutting the film (8) inside and thereby provides passage and access to extraction thereof from the inner space of the box (9).

**[0027]** Figure 4 shows that the movable part (10) is pushed by the stopper (1) into the container when the latter is closed, which generates a tunnel for the admission of air.

**[0028]** The movable part (10) moves on strips (11) integral with the butt end (12) which is where it is supported and pushed by the stopper (1).

**[0029]** The box (13) of said movable part (10) has a lifting-type part (14) to prevent the cut plastic film from going back and plugging up the opened hole.

**[0030]** Figure 5 shows that the box (13) has a closure (15) in the rear part of the movable part (10) preventing the liquid from inside the box from filling up said box (13), and it therefore allows only air to be admitted into the box through the upper part of the box (13) while liquid is being poured.

**[0031]** Figure 6 shows that the inner part of the stopper (1) has two elements integral therewith, i.e., the pushing element (17) which acts by moving the movable part (10) into the container, and the cutting part (16) of the film of the box that makes the upper part (22) through which the liquid inside the container is poured out.

**[0032]** Figure 7 shows that the guides (18) will lead the movable part (10) into the container along the length of the box of the entry of the mouth (4) and on both sides thereof and in a parallel and longitudinal manner.

**[0033]** Figure 8 shows that the cutting part (16) is provided on the front profile with toothing (19) for tearing the inner film (25) and giving rise to the upper part (22) for pouring the liquid from the box. The volume of liquid that is emptied out is replaced with the air that is admitted through the lower part (23) of the mouth (4), without liquid being able to flow out through it, despite the tilting of the box in order to pour it out.

**[0034]** Figure 9 shows that the mouth (4) of the box is provided with a slot (20) along the four sides of the front perimeter thereof. The stopper (1) has a clipping device (7) in the form of a projection or riser, which is configured for being inserted into the slot (20) of the front perimeter of the mouth (4) allowing thus the closing of the mouth (4) once the required pouring service has been performed.

**[0035]** Figure 10 shows that the small bent sheets (21) resulting from the tearing of the inner plastic film (25) of the container by means of the pushing element (17) and the cutting part (16) do not block the admission of air into the container or the pouring of the liquid, since they are bent into the container and extended, and facing at each other.

**[0036]** Figure 11 shows the back of the base (5) of the stopper, which is configured for being glued to the cardboard of the box by means of an adhesive (24). This figure 11 shows at the back of the base (5) the lower part (23) for the flowing of the air and the upper part (22) for the pouring of the liquid, both parts (22,23) having the same size, and therefore allowing the same amount of air to be admitted through the lower part (23) than the volume of liquid that is poured out through the mouth (4) of the container.

**[0037]** Figure 12 shows the film (25) inside the box.

## Claims

**1.** Stopper for a box-type container with air admission, having:

- A mouth (4),
- a stopper (1),
- and a seal (2) attached to the mouth (4) and the stopper (1) by means of a precut, the seal (2) having a tongue (3) for pulling on the same and tearing off said seal (2) by breaking the precut joining the stopper (1) and the seal (2) as well as the precut joining the seal (2) with the mouth (4);
- the mouth (4) having a flaring or base (5) for gluing the cardboard of the box-type container;
- the stopper (1) having a clip (7) for closing, for being arranged on the mouth (4) like a perimetral catch which, by bending of the plastic material of the stopper (1), allows opening and closing the mouth (4) by gripping, wherein
- the stopper (1) has in the back a cutting part (16) **characterised in that** the cutting part (16) is with toothing (19) along the entire front edge thereof, and **in that** the stopper (1) has in the back a pushing part (17), wherein the stopper (1) is having fingerprints (6) on both sides thereof for greater extraction comfort;
- and **in that** the stopper for a box-type container has a movable part (10) closed on the sides by partitions forming a box (13) closed at the front part thereof by means of a closure (15) with toothing (19) along the entire front edge thereof, movable along the interior of the mouth (4) by means of strips (11) inserted into guides (18), this movable part (10) being insertable in the

mouth (4) portion when pushed by the pushing part (17) of the stopper (1) to penetrate into the container and to form a passage for the air during outflow of liquid, the movable part (10) generating inside the mouth (4) an upper part (22) for the admission of air and the cutting part (16) generating a lower part (23) for the outflow of liquid through the mouth (4) glued to the box with adhesive (24), the outflow of liquid through the lower part (23) being compensated with admission of air through the upper part (22) at the same time and in the same amount.

2. The stopper for a box-type container with air admission, according to claim 1, wherein the movable part (10) has a lifting part (14) at the front part, and, when the stopper (1) is clipped and closed on the mouth (4), the small bent sheets (21) resulting from the perforation of the film (25) by means of the toothing (19) of the movable part (10) and of the cutting part (16) are secured and led into the container by the lifting-part (14) of the movable part (10).

**Patentansprüche**

1. Anschlag für einen kistenartigen Behälter mit Lufteinlass, aufweisend:

   - eine Mündung (4),
   - einen Anschlag (1),
   - und eine Dichtung (2), die an der Mündung (4) und an dem Anschlag (1) mittels eines Vorschnitts befestigt ist, wobei die Dichtung (2) eine Zunge (3) zum Ziehen daran und Abreißen der Dichtung (2) durch Brechen des Vorschnitts, der den Anschlag (1) und die Dichtung (2) verbindet, sowie den Vorschnitt, der die Dichtung (2) mit der Mündung (4) verbindet, aufweist;
   - wobei die Mündung (4) eine Ausbauchung oder Basis (5) zum Kleben des Kartons des kistenartigen Behälters aufweist;
   - wobei der Anschlag (1) einen Clip (7) zum Schließen aufweist, um an der Mündung (4) wie eine Umfangsklinke angeordnet zu sein, die durch Biegen des Kunststoffmaterials des Anschlags (1) ein Öffnen und Schließen der Mündung (4) durch Ergreifen zulässt, wobei
   - der Anschlag (1) an seiner Hinterseite ein Schnittteil (16) aufweist, **dadurch gekennzeichnet, dass** das Schnittteil (16) mit Einzahnungen (19) entlang des gesamten vorderen Randes davon versehen ist und dadurch, dass der Anschlag (1) an seiner Hinterseite ein Druckteil (17) aufweist, wobei der Anschlag (1) Fingerabdrücke (6) auf beiden Seiten davon für einen größeren Extraktionskomfort aufweist;
   - und dadurch, dass der Anschlag für einen kistenartigen Behälter ein bewegliches Teil (10) aufweist, das auf den Seiten durch Trennwände geschlossen ist, die eine Kiste (13) bilden, die am vorderen Teil davon mittels eines Verschlusses (15) mit Einzahnungen (19) entlang des gesamten vorderen Randes davon verschlossen ist, entlang der Innenseite der Mündung (4) mittels Bändern (11) beweglich ist, die in Führungen (18) eingesetzt sind, wobei dieses bewegliche Teil (10) in den Mündungsabschnitt (4) eingesetzt werden kann, wenn es durch das Druckteil (17) des Anschlags (1) zum Eindringen in den Behälter und zum Bilden eines Durchgangs für Luft während des Ausflusses von Flüssigkeit gedrückt wird, wobei das bewegliche Teil (10) innerhalb der Mündung (4) ein oberes Teil (22) zum Einlassen von Luft erzeugt und das Schnittteil (16) ein unteres Teil (23) für den Ausfluss von Flüssigkeit durch die Mündung (4) erzeugt, die an die Kiste mit Klebstoff (24) angeklebt ist, wobei der Ausfluss von Flüssigkeit durch das untere Teil (23) durch Einlassen von Luft durch das obere Teil (22) zur gleichen Zeit und in der gleichen Menge kompensiert wird.

2. Anschlag für einen kistenartigen Behälter mit Lufteinlass nach Anspruch 1, wobei das bewegliche Teil (10) ein Anhebeteil (14) am vorderen Teil aufweist und, wenn der Anschlag (1) an der Mündung (4) angeklemmt und verschlossen ist, die kleinen gebogenen Folien (21), die aus dem Perforieren des Films (25) mittels der Einzahnung (19) des beweglichen Teils (10) und des Schnittteils (16) resultieren, gesichert sind und in den Behälter durch das Anhebeteil (14) des beweglichen Teils (10) geleitet werden.

**Revendications**

1. Bouchon pour un conteneur de type boîte avec admission d'air, ayant :

   - Un bec (4),
   - un bouchon (1),
   - et un sceau (2) fixé au bec (4) et au bouchon (1) au moyen d'une prédécoupe, le sceau (2) ayant une languette (3) pour tirer dessus et pour déchirer ledit sceau (2) en cassant la prédécoupe reliant le bouchon (1) et le sceau (2) ainsi que la prédécoupe reliant le sceau (2) au bec (4) ;
   - le bec (4) ayant un évasement ou une base (5) pour coller le carton du conteneur de type boîte ;
   - le bouchon (1) ayant un clip (7) pour la fermeture, pour être disposé sur le bec (4) comme une serrure périphérique qui, par pliage de la matière plastique du bouchon (1), permet l'ouverture et la fermeture du bec (4) par préhension, dans

lequel
- le bouchon (1) présente à l'arrière une pièce de découpe (16) **caractérisé en ce que** la pièce de découpe (16) a une denture (19) le long de tout son bord avant, et **en ce que** le bouchon (1) a à l'arrière une pièce de poussée (17), dans lequel le bouchon (1) a des empreintes digitales (6) sur ses deux côtés pour un plus grand confort d'extraction ;
- et **en ce que** le bouchon pour un conteneur de type boîte a une pièce mobile (10) fermée sur les côtés par des cloisons formant une boîte (13) fermée à l'avant de celle-ci au moyen d'une fermeture (15) à denture (19) sur tout son bord avant, le long de l'intérieur du bec (4) au moyen de bandes (11) insérées dans des guides (18), cette pièce mobile (10) pouvant être insérée dans la partie du bec (4) lorsqu'elle est poussée par la pièce de poussée (17) du bouchon (1) pour pénétrer dans le conteneur et pour former un passage pour l'air lors de l'écoulement de liquide, la pièce mobile (10) générant à l'intérieur du bec (4) une partie supérieure (22) pour l'admission d'air et la pièce de découpe (16) générant une partie inférieure (23) pour l'écoulement de liquide à travers le bec (4) collé à la boîte avec de la colle (24), l'écoulement de liquide à travers la partie inférieure (23) étant compensé par l'admission d'air à travers la partie supérieure (22) en même temps et dans la même quantité.

**2.** Bouchon pour un conteneur de type boîte avec admission d'air, selon la revendication 1, dans lequel la pièce mobile (10) a une pièce de levage (14) à la partie avant, et, lorsque le bouchon (1) est clipsé et fermé sur le bec (4), les petites tôles pliées (21) résultant de la perforation du film (25) au moyen de la denture (19) de la pièce mobile (10) et de la pièce de découpe (16) sont fixées et introduites dans le conteneur par la pièce de levage (14) de la pièce mobile (10).

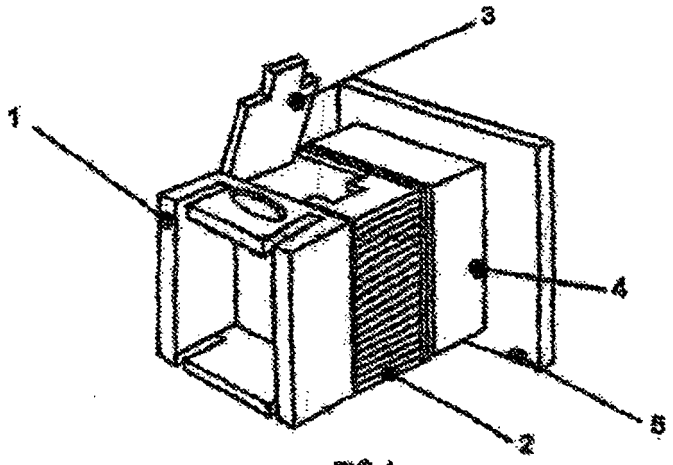


FIG-1

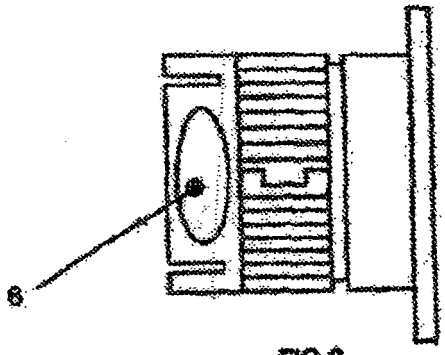


FIG-2

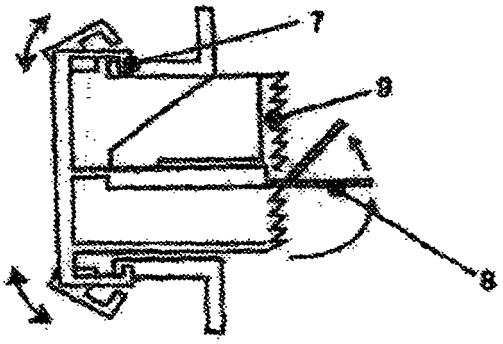


FIG-3

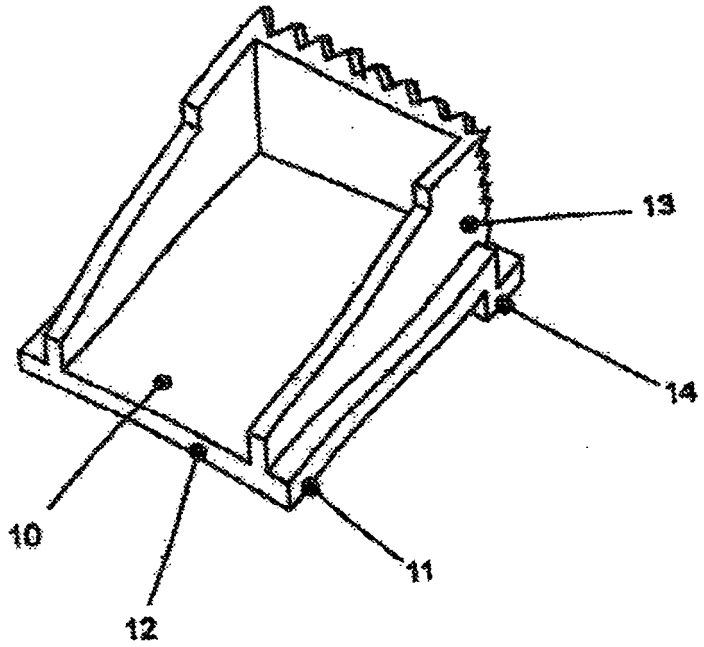


FIG-4

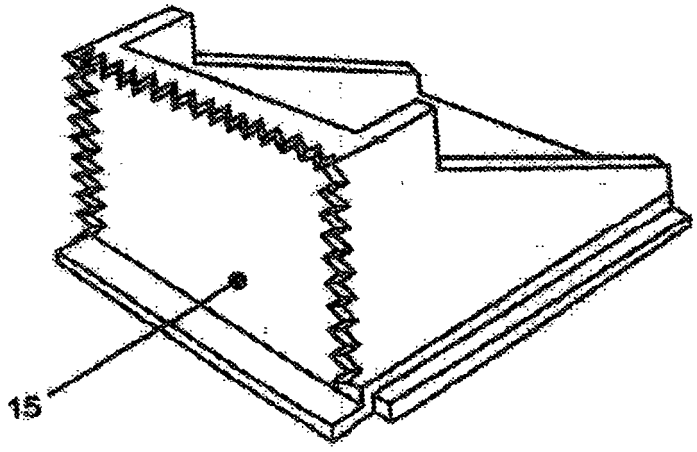


FIG-5

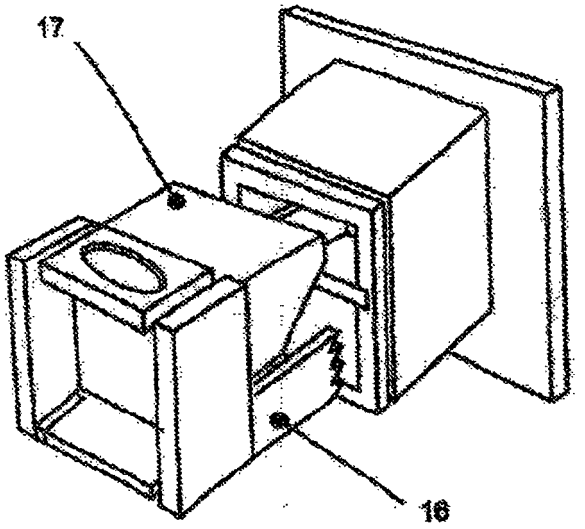


FIG-6

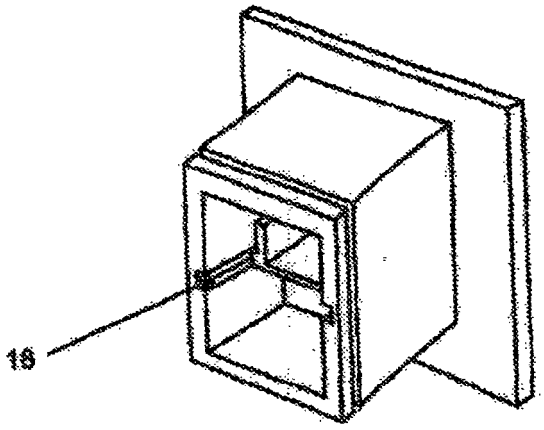


FIG-7

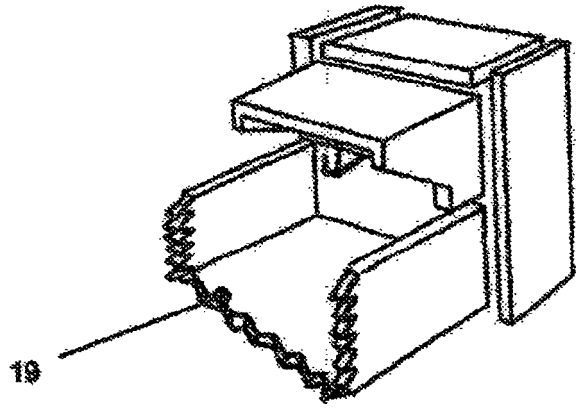


FIG-8

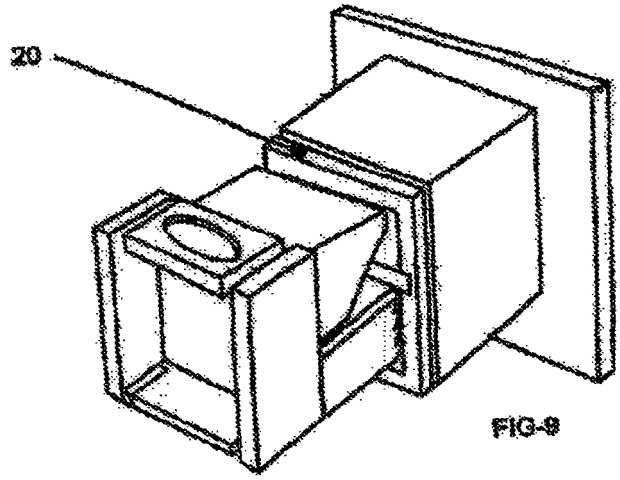


FIG-9

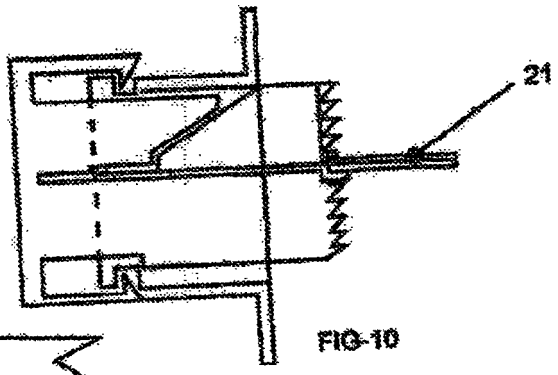


FIG-10

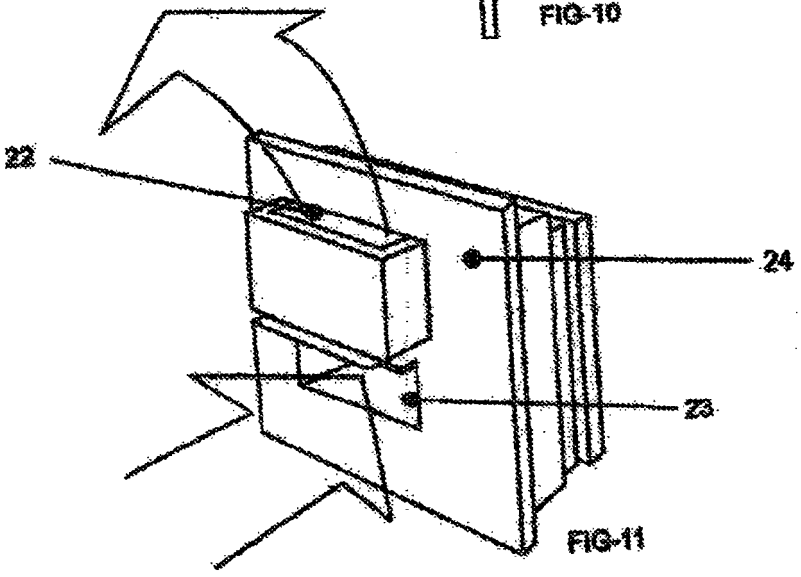


FIG-11

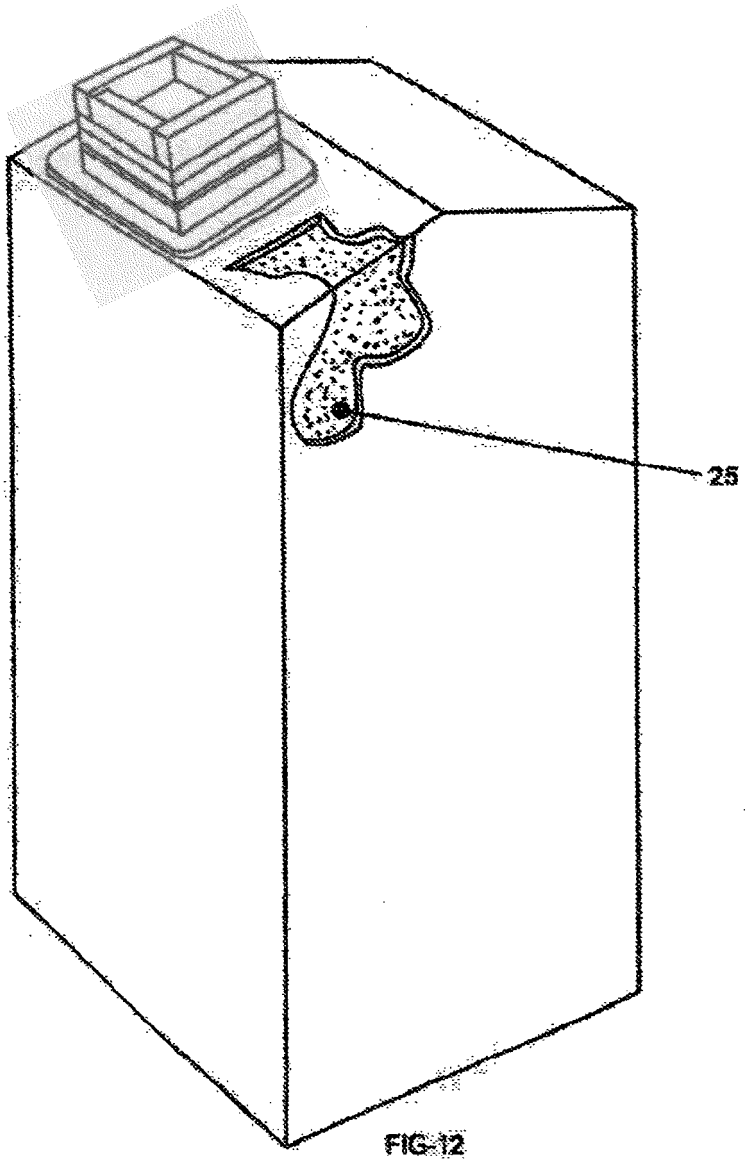


FIG-12

## REFERENCES CITED IN THE DESCRIPTION

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### Patent documents cited in the description


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