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(54) Closing device with automatic opening

(57) The present invention is directed to a closing device (10) for fitting on a container, or being a part of the container body, preferably a container for wetted tissues, comprising a stationary lid member (12), and a movable lid member (13), the stationary lid member including a means for allowing the movable lid member to slide so as to create access to the container contents. Said movable lid member and said stationary lid member are linked by at least one elastic member (21) which is charged with elastic energy when the movable lid member is in closed position, and they include means to provide a releasable locking mechanism (25) for securing the movable lid member in the closed position, or releasing the movable lid member held in tension by said elastic member, thus providing access to the container contents through a dispensing means.

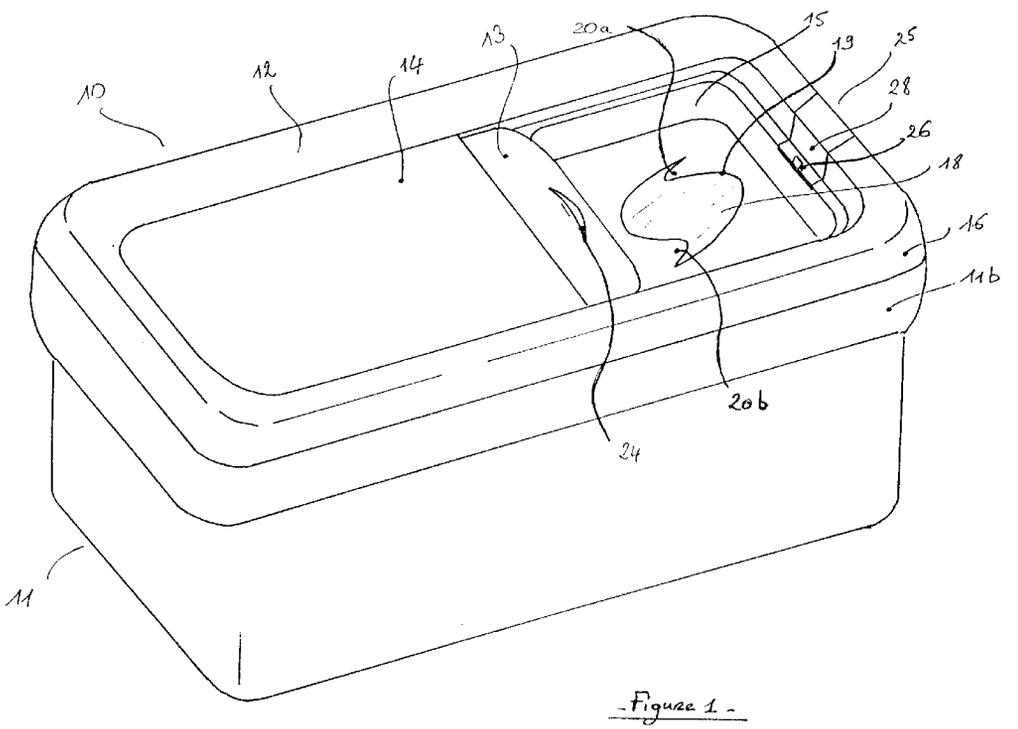

Figure 1

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Description

Field of the invention

[0001] The present invention relates to a closing device with an automatic opening, to be adapted on a container, in particular on a container for dry or wetted tissues.

Background of the invention

[0002] Containers for wetted tissues are representative of the various containers for consumer products to which the present invention can apply; such containers typically comprise, for example, a body of the container constructed so that wetted tissues for cleaning a user's skin can be picked out one by one from a stack of wetted tissues packed therein, and a closing device adapted to fit on the body to cover its upper opening. This closing device comprises a stationary lid member directly fitting on the upper opening of the body and a movable lid member having its base end hinged to one side end of an opening formed in a central zone of the stationary lid member, and through which the wetted tissues will be picked out one by one.

[0003] The following references are directed to containers for wetted tissues including a closing/dispensing device: *European Patent Application EP-0-748 748 A 1, Unicharm Corp., published 18.12.1996:* teaches a container for wetted tissues comprising a container body, a movable lid member which is hinged to a stationary lid member. An elastic strip is provided, combined to a releasable lock for automatic opening of the package; *United States Patent n° 3 982 659, The Scott Paper Company, Sept.28,1976:* discloses a dispensing package of wet sheets. The opening includes curved surfaces which are substantially free of sharp angles to form a restricting channel into which successive sheets are directed during sheet dispensing; *PCT Application n° 96/06 556, Nice Pak Products, published March 7,1996:* teaches a moisturized zigzag folded tissue stack which is retained in a container with the free end of the tissue fitted through a slit which frictionally retains the tissue unless it is manually moved through the slit. A hinged cap for the slit is designed to keep the exposed portion of the tissue moist ; *European Patent Application EP-0-629 560 A3, Kao Corp., published 21-12-1994:* discloses a cap with a hinged top lid. A rubber like elastic member is provided for automatic opening of the package ; *Japanese Patent Application JP-0-910 4484 A, Yamada Corp., published April 22, 1997 :* teaches a lid unit component, which is installed at an opening which is provided on a flexible container. The lid unit component is provided with a removal opening for removing wet tissues, and a sliding lid.

[0004] Closing devices as described in the preceding documents have a number of disadvantages. A hinging lid constitutes a protrusion when it is in open position and so the package loses stability and, in the case of a container for baby tissues, it is possible for the baby to grasp the lid or to fall on it, thus tilting or even damaging the container, moreover with such a hinging lid in open position, the contents is only accessible from the front side of the container and not from the rear, so there is a loss of convenience for the user. At the same time, the user of such containers is frequently in a situation where she/he has only one free hand to open the package, whereas most of the preceding packages do not include an easy or automatic opening. At last when the container includes a hinging lid with an automatic opening, there is a risk that the hinging lid may flip open and injure the baby.

[0005] It is one main object of the present invention to provide the user with a container for dry or wetted tissues onto which a closing device is adapted which is safe for the consumer, easy to handle, especially when only one hand is available to manipulate the package and its contents, which makes the package stable, especially when in the open position, and which provides easy and convenient access to the container contents.

[0006] It is another optional object of the present invention to provide a container which does not contain overhang nor sharp edges near the dispensing portion of the container.

[0007] It is a further optional object of the present invention to provide a container in which the spring open mechanism is not accessible from the outside of the container, especially at the time the container is being refilled.

[0008] It is another optional object of the present invention to provide a container in which the side containing the sliding lid mechanism does not have to be open for the refilling operation, and thus, is protected from being flexed and early damaged.

Summary of the invention

[0009] The present invention is directed to a closing device for fitting on a container or being a part of the container, preferably a container for dry or wetted tissues, and more preferably for wetted tissues, comprising a stationary lid member, and a movable lid member, characterized in that said stationary lid member includes a means for allowing said movable lid member to slide along a plane which is parallel to said stationary lid member, so as to create access to the container contents; said movable lid member and said stationary lid member are linked by at least one elastic member which is charged with elastic energy when the movable lid member is in closed position ; said stationary lid member and said movable lid member include means to provide a releasable locking mechanism for securing the movable lid member in the closed position, or releasing the movable lid member held in tension by said elastic member, thus providing access to the container contents, through a dispensing means.

Brief description of the drawings

[0010] The invention will now be explained in detail with reference to the accompanying drawings, in which:

- Figure 1 is a perspective view of the container according to the invention.
- Figure 2 is a top view of the stationary lid member.
- Figure 3 is a bottom view of the stationary lid member.
- Figure 4 is a profile view of the movable lid member.
- Figure 5 is a top view of the movable lid member.
- Figure 6 is a profile view of the closing device in open position.
- Figure 7 is a profile view of the closing device in closed position.
- Figure 8 is a profile view of the stationary lid member according to the invention.
- Figure 9 is a schematic top view showing one version of the closing device.
- Figure 10 is a profile view showing the closing device that fits into the rim of the container body.
- Figures 11 and 12 are enlarged views of the locking mechanism according to the invention, respectively shown in open and closed positions.

Detailed description of the invention

[0011] Referring to figures 1 to 10, a closing device (10) fits onto a container body (11), or is a part of a container body, which preferably contains a stack of dry or wetted tissues, and more preferably wetted tissues. The closing device comprises a stationary lid member (12) and a movable lid member (13) both made of a suitable synthetic resin material which are linked by at least one elastic member (21), and a releasable locking mechanism (25) which holds the closing device (10) in the closed position. Optionally, the container body can be filled with a flexible pouch containing a stack of dry or wetted tissues, and more preferably wetted tissues.

[0012] In a first embodiment of the present invention the container body (11) comprises an upper opening (11a) and a flange (11b), extending along an outer peripheral edge of the opening (11c). The container body is made from a suitable synthetic resin material in a generally rectangular parallelepiped.

[0013] In another embodiment of the present invention, the container body (11) comprises a second open side, preferably the bottom side, which is closed by a removable cover, in such a way that when it is empty, the container can be refilled with a new stack or a new roll of wipes. Optionally but preferably, the base surface of the container (11) is greater than the top surface, so as to increase the stability of the container. Moreover and optionally, the removable cover is made out of a material whose flexibility is such as to increase the tightness between said removable cover and the container body.

[0014] In both of the preceding embodiments of the present invention, the stationary lid member (12) of the closing device (10) can be molded as an integral part of the container body (11), and then preferably forms the upper side of said container body, or it can be a separate part which fits onto the container body.

[0015] As shown in figures 2, 3, 6 and 7, the stationary lid member (12) comprises firstly, a top floor (14) which contains at least one opening (15) over which the movable lid member is free to slide, said opening (15) being preferably located on one side of the stationary lid member. Said stationary lid member secondly comprises peripheral walls (16) that are integrally molded with said top floor (14). The stationary lid member (12) also includes a means, for example guide rails, allowing said movable lid member (13) to slide along a plane which is parallel to said stationary lid member, so as to create access to the container contents through the opening (15). Preferably, in particular when the container contents is dry or wetted tissues, and more particularly when the contents is wetted tissues, the stationary lid member includes a dispensing means (18), which is either part of the stationary lid member, or a separate element which fits onto said stationary lid member (12). Said dispensing means is located in a lower part of the stationary lid member. This dispensing means (18) includes surfaces (19) which are free of sharp angles, said surfaces forming a restricting channel (20) through which the successive tissues are directed during use. Said restricting channel (20) is preferably S-shaped with dimensions preferably within the range of 20 to 60 mm of width, most preferably 55 mm of width. As a tissue is dispensed, the leading edge of said tissue furls around one arm (20a) of the S-shape, then as the next tissue is dispensed, its leading edge furls around the opposite arm (20b) of the S-shape opening and this continues in an alternating manner as first one and then a next tissue is dispensed. This arises because the tissues are folded in an alternating zigzag pattern whereby the tissues are pulled up from first the front of the tub and then the rear, alternately. In the optional case where the container body is to be filled with a flexible pouch containing the product to dispense, the dispensing device may not be required to be mounted on, nor molded with the stationary lid member. In this case, the dispensing device is part of the flexible pouch and is accessible through a wide opening which is created in the stationary lid member as soon as the locking mechanism is released by the user and the movable lid member slides open.

[0016] As shown in figures 4, 5, 6 and 7 the movable lid member (13) is composed of one or two plates, preferably one, with a polygonal or rounded shape, preferably rectangular. Its dimensions are such that it completely overlaps the dispensing means (18) when the closing device is in the closed position (see figure 7), and such that when the closing device is in the open position (see figure 6), said movable lid member (13) is slidably positioned under the top floor part (14) of the

stationary lid member, so that an access to the container contents through the dispensing means (18) is created. The movement by which the movable lid member slides in open or close positions is either linear or rotating, preferably linear, and optionally, while being linear in a horizontal plane, the stationary lid member can be arcuate on its top surface, so that the sliding movement of the movable lid member is arcuate in a vertical plane. The means by which the movable lid member is slidably positioned onto the stationary lid member, is preferably achieved by two series of continuous or discontinuous guide rails (17) whose length is at least 10mm, and which are parallel to the long sides of said stationary lid member (12) and are molded as an integral part of the stationary lid member, so that the movable lid member (13) is slidably positioned between said guide rails (17) and the top floor part (14) of the stationary lid member, in a plane that is horizontal. The inner surface of the stationary lid member includes at least one protrusion (22) which stops the sliding movement of the movable lid member in open position, so that at least one portion (23) of said movable lid member (13) remains accessible to the user to close the container. Optionally, a means (24), for example a catch, can be added onto said portion of the stationary lid member to facilitate the closing operation.

[0017] As shown in figures 6 and 7, one or more elastic member(s) (21), preferably one, is attached in at least one point to the stationary lid member and at least in one other point to the movable lid member, so that when the closing device is in the closed position, said elastic member (21) is charged with a sufficient elastic energy to automatically open the movable lid member (13) under the elasticity of said elastic member, as soon as the locking mechanism (25) is released by the user. Said elastic energy can either be of the compression, torsion, or stretching type, but is preferably of the stretching type.. For example, the elastic member is a flat band with a section comprised between 0,5 and 5 mm, and it includes holes at its both ends; it is fixed at its one end to the inner part of the stationary lid member (12), by a means (21a), for example a hook, which is molded as part of said stationary lid member while its other end is fixed to the movable lid member (13) by another means (21b), for example another hook. Preferably, as shown in figures 4 and 5, the movable lid member contains a recess (21c) into which said means (21b) is positioned, so that it cannot contact or damage the contents.

Optionally, the elastic member (21) can be a single or multiple winding coil spring with elongated ends which is positioned between said stationary lid member and said movable lid member so that when the closing device is in the closed position, it is charged with a sufficient spring energy to automatically open the movable lid member as soon as the locking mechanism is released by the user. Said spring energy can either be of the compression, stretching or torsion type.

As shown in figures 6, 7, 10 and 11, the locking mechanism (25) is achieved by using a catch (26) that fits into one or more, preferably one corresponding recess (27). Either the catch or the recess is located on the movable lid member (13), and the other is located on the stationary lid member (12). Said locking mechanism (25) keeps the movable lid member (13) in the closed position. In one embodiment of this invention, said locking mechanism (25) is directly released by displacing a movable element (28), for example a pushbutton, onto which said catch is connected, thus disengaging said catch (26) from said recess (27). In another and alternative embodiment of the invention, the locking mechanism is indirectly released when the user applies an elastic deformation onto an area which is located close enough said locking mechanism, thus disengaging said catch from said recess. Said elastic deformation should be achievable with only a limited applied strength such as to allow to use a single finger to release the locking mechanism.

[0018] Another version of the invention, as shown in figure 9, differs from the previous description in that: the movable lid member (13) is divided into two separate lids (13a) and (13b). These lids have a polygonal or rounded shape, but are preferably rectangular. Said sliding lids (13a) and (13b) slide in opposite directions from a jointing line (13c), thus creating access to the dispensing means and the container contents. In accordance with what is previously described, said sliding movement can be strictly linear or can be arcuate in a vertical plane, thus following the general shape of the closing device's top part. Moreover, the inner surface of the stationary lid member includes two protrusions which stop the sliding movement of the two sliding lids (13a) and (13b) in the open position, so that two portions of respectively said sliding lids (13a) and (13b), remain accessible to the user to close the container. Optionally, means, for example catches (24), can be added respectively onto said portions of said sliding lids (13a) and (13b) to facilitate the closing operation.

[0019] In this particular version of the invention and in accordance with what is previously described in the first version of the present invention, the stationary lid member (12) contains one opening over which the two separate lids (13a) and (13b) of the movable lid member are free to slide, said opening being preferably centered in the stationary lid member. The stationary lid member (12) also includes two series of continuous or discontinuous guide rails whose length is at least 10mm, and which are parallel to the long sides of said stationary lid member (12) and are molded as an integral part of the stationary lid member, so that the sliding lids (13a) and (13b) are slidably positioned between said guide rails in a horizontal plane.

[0020] Each of the two sliding lids (13a) and (13b) include at least one elastic member as described previously, so that when the closing device is in the closed position, said elastic members are charged with a sufficient elastic energy to respectively automatically open each of the two sliding lids (13a) and (13b), as soon as

the locking mechanism (25) is released by the user. Said elastic energy can either be of the compression, torsion or stretching type, preferably of the stretching type.

Optionally, the elastic member can be a single or multiple winding coil spring with elongated ends which is positioned between said stationary lid member and said sliding lids of said movable lid member so that when the closing device is in the closed position, it is charged with a sufficient spring energy to automatically open the movable lid member as soon as the locking mechanism is released by the user. Said spring energy can either be of the compression, stretching or torsion type.

[0021] A releasable locking mechanism (25) is provided as described previously in the first version of the present invention, which is achieved by using catches that fit into corresponding recesses. In one embodiment of the present version of the invention, said locking mechanism (25) is directly released by displacing a movable element (28), for example a push-button, onto which said catches are connected, thus disengaging said catches from said recesses. In another and alternative embodiment of the version of the present invention, the locking mechanism (25) is indirectly released when the user applies an elastic deformation onto an area, said area being located near said locking mechanism (25), thus disengaging said catches from said recesses as explained above.

In the first preceding embodiment, the movable element (28) can be positioned onto the stationary lid member (12), for example centered in one of the two long sides of said stationary lid member (12). In the second preceding embodiment, the area onto which an elastic deformation is applied, can be located for example, on one of the two sliding lids of the movable lid member (13), to which a catch will be connected, while a recess is located in the second sliding lid, so that the releasable locking mechanism (25) is centered between the sliding lids (13a) and (13b) of the movable lid member (13).

[0022] Another version of the invention differs from the first description in that: the movable lid member is a polygonal, rounded-shaped or circular plate, preferably circular, which includes a hole located near its peripheral edge. Said hole fits onto a lug which is located on the inner surface of the stationary lid member, so that the movable lid member describes a rotating movement around said lug. The stationary lid member includes a protrusion at its inner surface to stop the rotating movement of the movable lid member so that when the closing device is in the open position, the dispensing opening is accessible and a portion of the movable lid member still remains accessible to the user, so that she/he can close the container. Optionally, a means, for example a recess, can be added respectively onto said portion of said sliding lid to facilitate the closing operation. This particular version of the invention also includes a releasable locking mechanism, as previously described in the first version of the present invention.

[0023] In any of the preceding versions of the present invention, the stationary lid member, the movable lid member, and the separate dispensing means if one, are molded from a polypropylene material or other suitable materials such as polyethylene, polystyrene, acrylonitryl butadiene styrene, polyester, polyvinyl chloride, polycarbonate or elastomer, but preferably from a polypropylene material. Obviously, the container body may also be molded from any one of the previously mentioned materials. The elastic member is molded from rubber or synthetic resin materials having a rubber elasticity such as silicone rubber, chloroprene rubber, butadiene rubber, urethane rubber, ethylene-propylene copolymer or natural rubber.

[0024] Optionally in any of the preceding versions of the present invention, in which the closing device is a separate element that fits onto the container body, and as shown in figure 10, said container body (11) can comprise an upper opening (11a), with an external peripheral upper edge (11b) and a flange that shall extend therefrom; the internal surfaces of this upper opening (11a) comprise ribs and/or grooves (29) that extend longitudinally along the small and the long sides of the container body (11), said ribs and/or grooves (29) fit into corresponding ribs and/or grooves (30) of the stationary lid member (12) in such a way that no step nor overlap results from the assembling, and the surface of the package especially on its top part is regular and does not include sharp edges. Still, on one face of the package, preferably one of the small sides, the closing device may include an opening tab overlapping the external peripheral upper edge of the container body, said overlap having a dimension of less than 5 mm, preferably less than 3 mm, and said opening tab preferably having an arcuate shape, so that it is not aggressive for the consumer's fingers.

Claims

1. A closing device (10) for fitting on a container body (11), or being a part of the container body, comprising a stationary lid member (12), and a movable lid member (13), characterized in that,

   (a) said stationary lid member (12) includes a means for allowing said movable lid member (13) to slide along a plane which is parallel to said stationary lid member (12), so as to create access to the container contents.

   (b) said movable lid member (13) and said stationary lid member (12) are linked by at least one elastic member (21) which is charged with elastic energy when the movable lid member (13) is in closed position.

   (c) said stationary lid member (12) and/or said movable lid member (13) include means to provide a releasable locking mechanism (25) for securing the movable lid member (13) in the

closed position, or releasing said movable lid member (13) held in tension by said elastic member (21), thus providing access to the container contents.

2. A closing device according to claim 1, wherein the releasable locking mechanism (25) contains a catch (26) which fits into a corresponding recess (27).

3. A closing device according to claims 1 to 2, wherein the releasable locking mechanism (25) is directly released by displacing a movable element to which said catch (26) is connected, thus disengaging said catch (26) from said recess (27).

4. A closing device according to claims 1 to 2, wherein the releasable locking mechanism (25) is indirectly released by applying an elastic deformation onto an area, said area being located near enough to said locking mechanism (25) to disengage said catch (26) from said recess (27).

5. A closing device according to claims 1 to 4, wherein the elastic member (21) is fixed in, at least, one point to the stationary lid member (12) and at least one other point to the movable lid member (13).

6. A closing device according to claims 1 to 5, which includes a dispensing means (18) with surfaces (19) which are free of sharp angles, said surfaces (19) defining a restricting channel (20) into which successive tissues are directed during use.

7. A closing device according to claim 6, wherein said dispensing means (18) is molded as an integral part of the stationary lid member (12).

8. A closing device according to claim 6, wherein said dispensing means (18) is a separate element adapted to fit said stationary lid member (12).

9. A closing device according to claims 1 to 5, wherein said dispensing means (18) is a part of a separate flexible pouch containing the product, which is stored in the container.

10. A closing device according to claims 1 to 9, wherein the sliding movement of the movable lid member (13) is linear in both horizontal and vertical planes, and is provided by guide rails (17) that are molded as part of the stationary lid member (12).

11. A closing device according to claims 1 to 9, wherein the sliding movement of the movable lid member is arcuate in a vertical plane and provided by guide rails (17) that are molded as part of the stationary lid member (12).

12. A closing device according to claims 10 and 11, wherein the guide rails (17) are continuous.

13. A closing device according to claims 10 and 11, wherein the guide rails (17) are discontinuous.

14. A closing device according to claims 1 to 13, wherein the movable lid member (13) is composed of a single lid.

15. A closing device according to claims 1 to 14, wherein the releasable locking mechanism is located in the stationary lid member (12) and in the movable lid member (13).

16. A closing device according to claims 1 to 13, wherein the movable lid member (13) is composed of two sliding lids (13a) and (13b) with opposed sliding directions from a jointing line (13c), so that access to the container contents is created between the two sliding lids (13a) and (13b) when the closing device is in the open position.

17. A closing device according to claims 1 to 13 and 16, wherein the releasable locking mechanism (25) is located in the movable lid member (13).

18. A closing device according to claims 1 to 9, wherein the sliding movement of the movable lid member (13) is a rotating movement around an axis, and is provided by a lug which is protruding from the stationary lid member (12).

19. A closing device according to claims 1 to 18, wherein said access to the container contents and said dispensing means (18), are centered in the stationary lid member (12).

20. A closing device according to claims 1 to 18, wherein said access to the container contents and said dispensing means (18), are located on one side of the stationary lid member (12).

21. A closing device according to any of the preceding claims, which is to be used for tissues, preferably for wetted tissues, that are folded for removal one by one from the container.

22. A closing device according to any of the preceding claims, wherein said movable lid member (13), said stationary lid member (12), and said separate dispensing device (18) if one, are made out of plastic material.

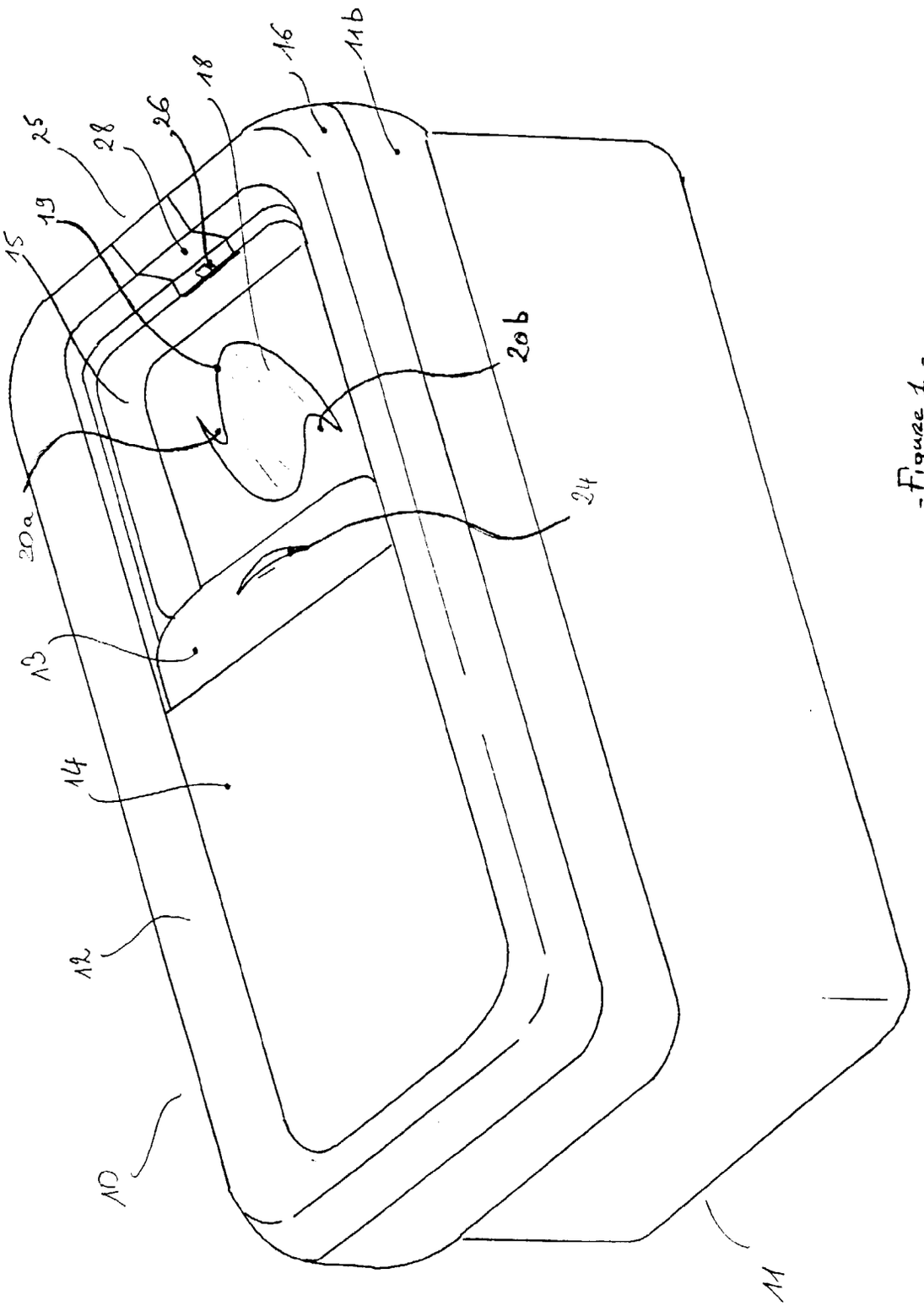
23. A closing device according to any of the preceding claims, wherein said elastic member (21) is made out of natural rubber or synthetic derivatives.

24. A closing device according to claims 1 to 22, wherein said elastic member (21) is a single or multiple winding coil spring with elongated ends.

25. A closing device according to any of the preceding claims, which contains ribs and grooves (30) that fit into corresponding ribs and grooves of the container body (29), said closing device being adjustably attached to said container body (11) so that the resulting assembling surfaces are edgeless.

26. A closing device according to claim 25, which contains an opening tab that overlaps the external peripheral upper edge (11b) of the container body.

27. A closing device according to any of the preceding claims, for fitting on, or being a part of one side of the container body (11), said container body (11) comprising a second open side, preferably the bottom side, which is closed by a removable cover.



- Figure 1 -

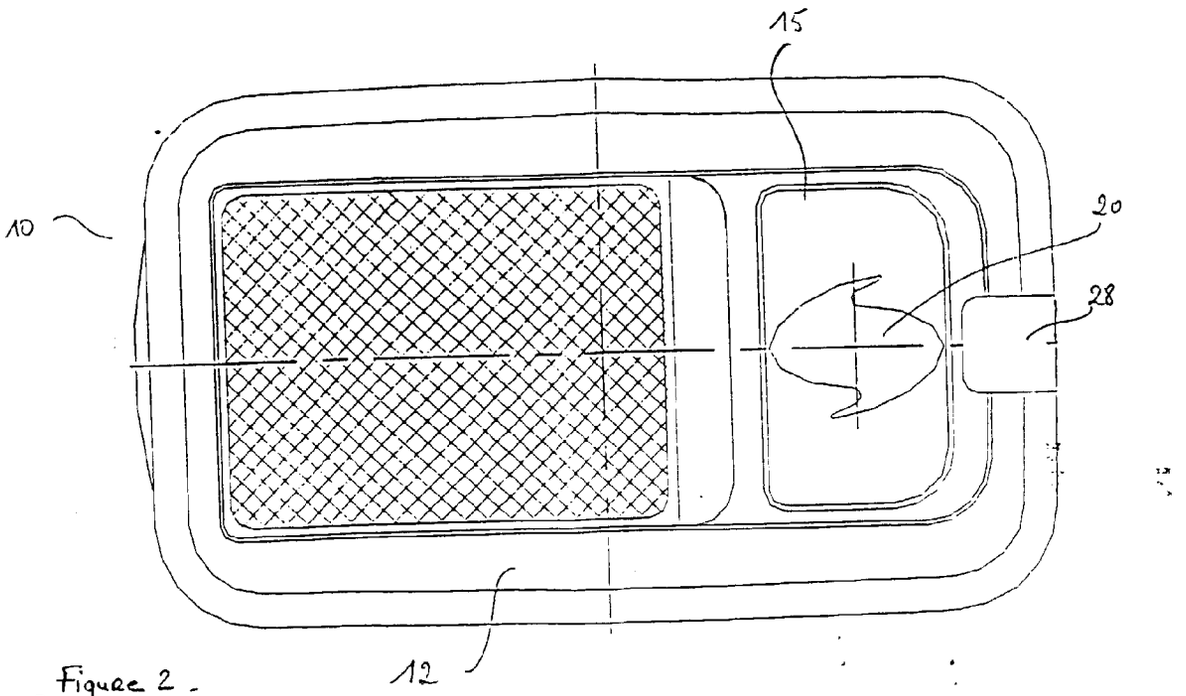


Figure 2

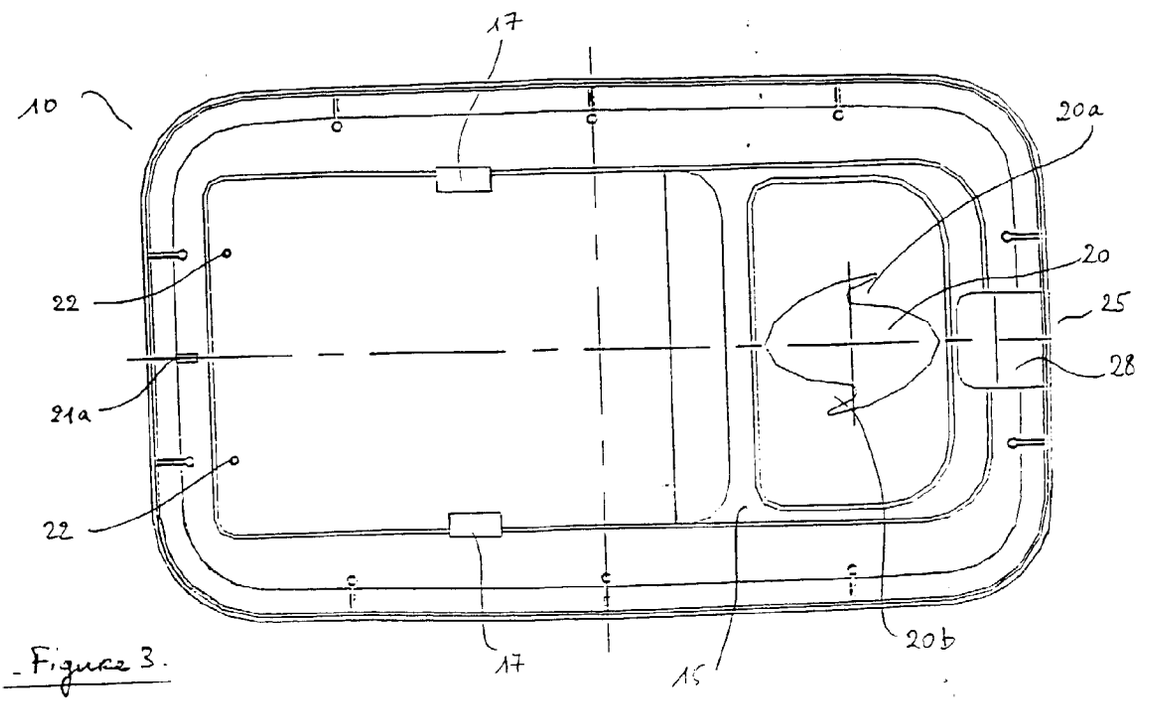
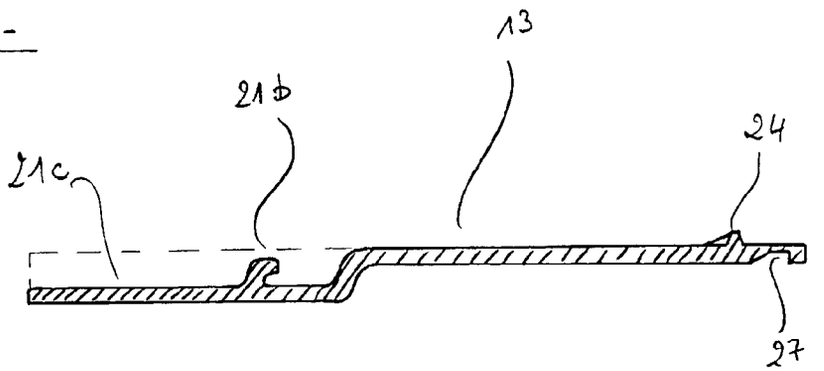
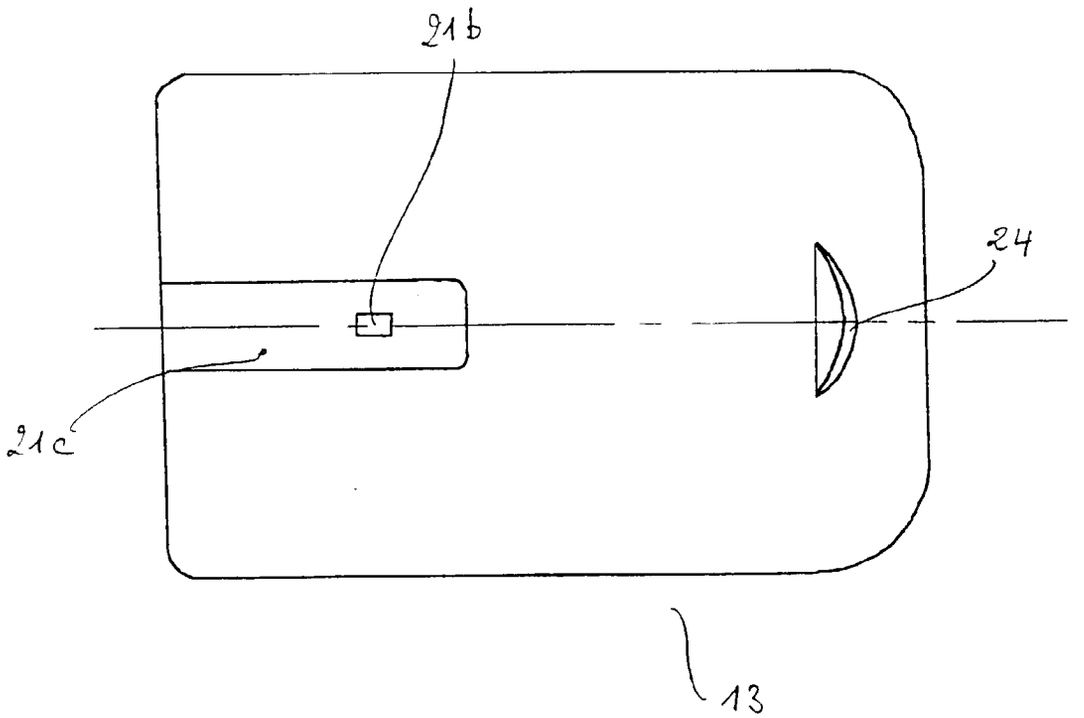


Figure 3

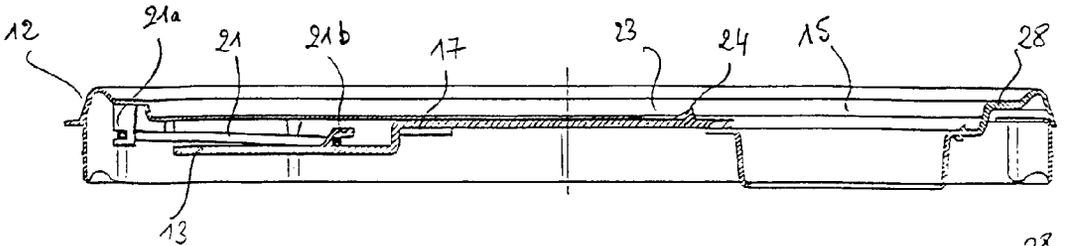
- Figure 4 -

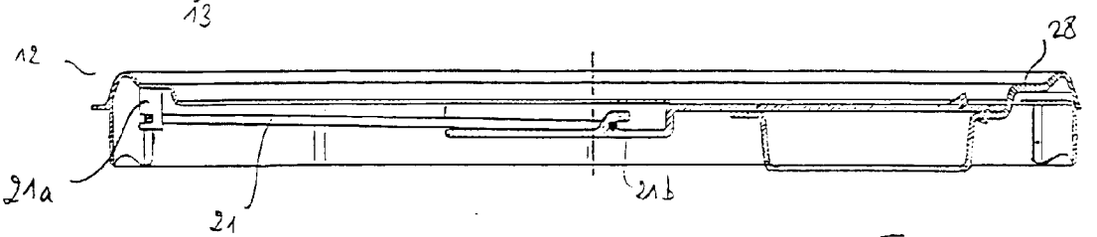




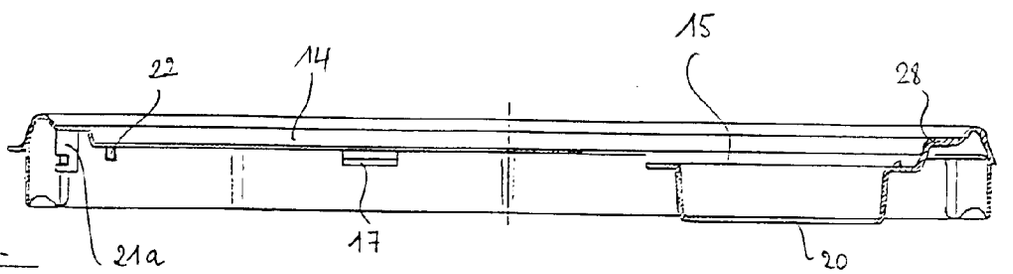
- Figure 5 -

- Figure 6 -

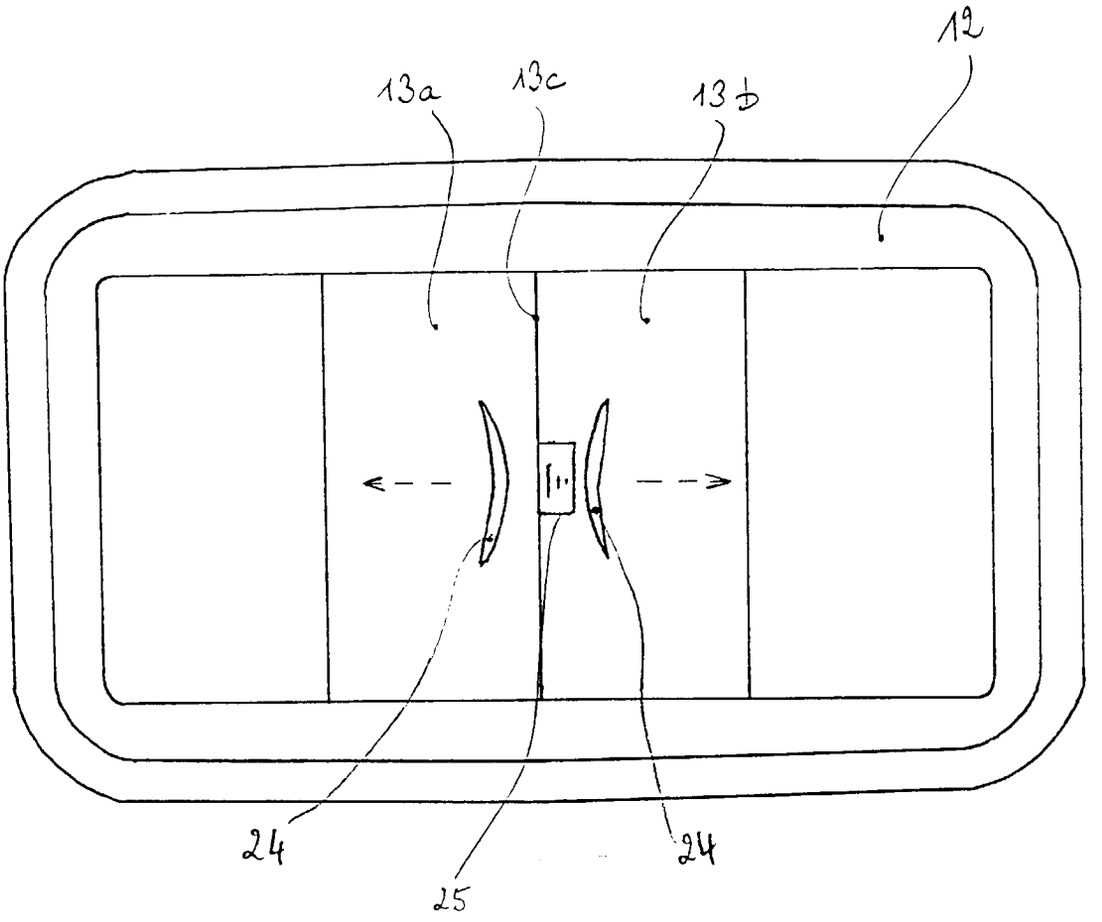




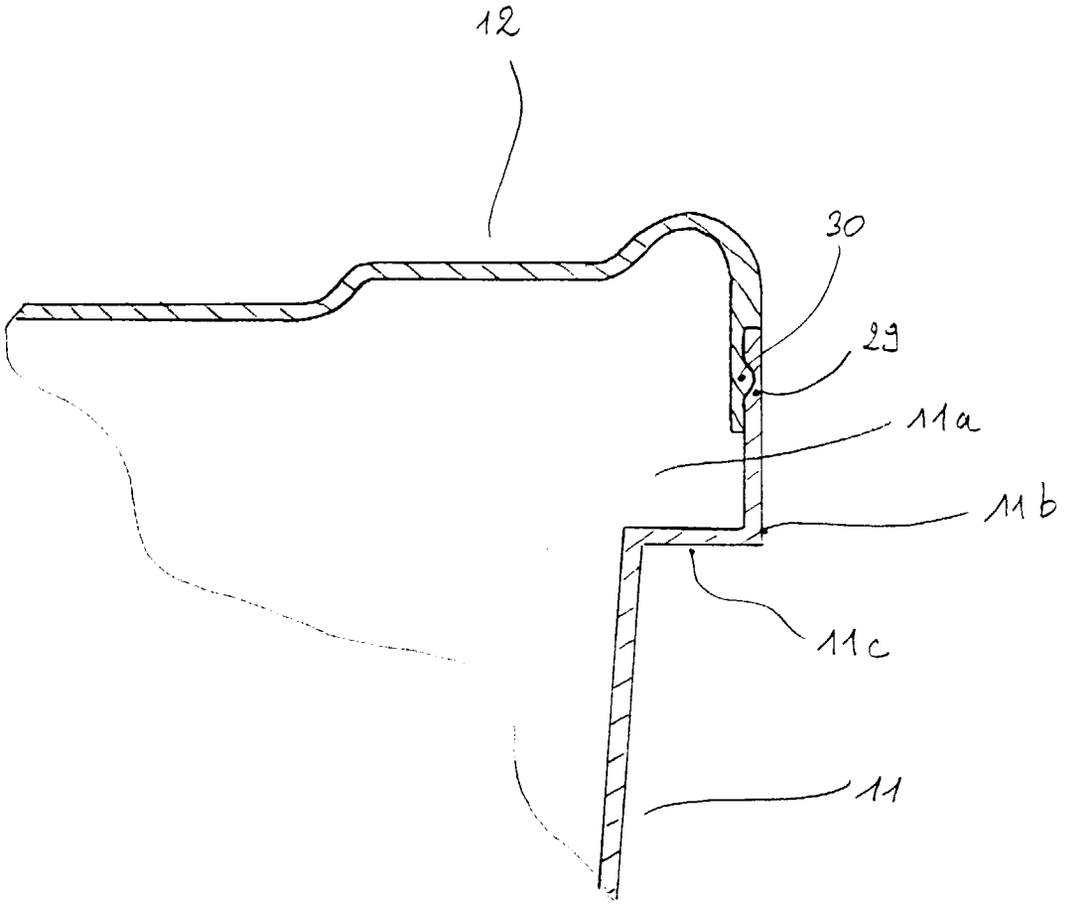
- Figure 7 -



- Figure 8 -



- Figure 9 -



- Figure 10 -

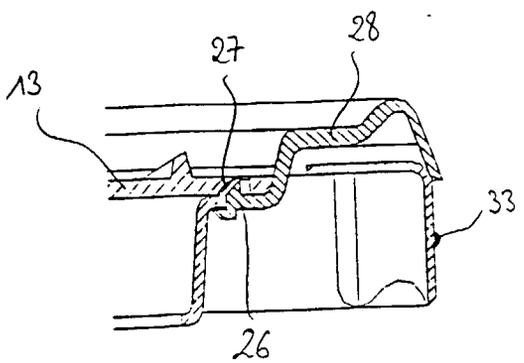


Figure 12

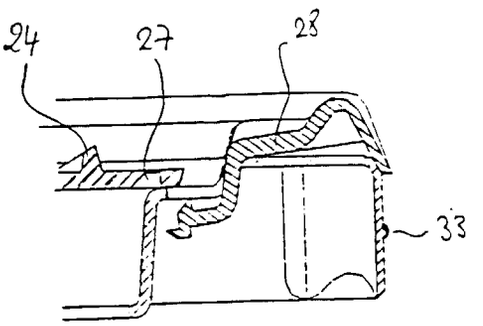


Figure 11

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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	6 January 1999	Lenoir, C

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