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(54) Container particularly for cosmetics.

(57) This container particularly for cosmetics comprises a lower half-shell and an upper half-shell which respectively define a base and a lid and are mutually pivoted proximate to one of their rear edges. At least one first closure element is provided near the front edge of one of the half-shells and can snap engage with a second closure element provided on the other half-shell.
The closure elements have mutually opposite coupling portions which extend along directions which are substantially parallel to the pivoting axis of the half shells.

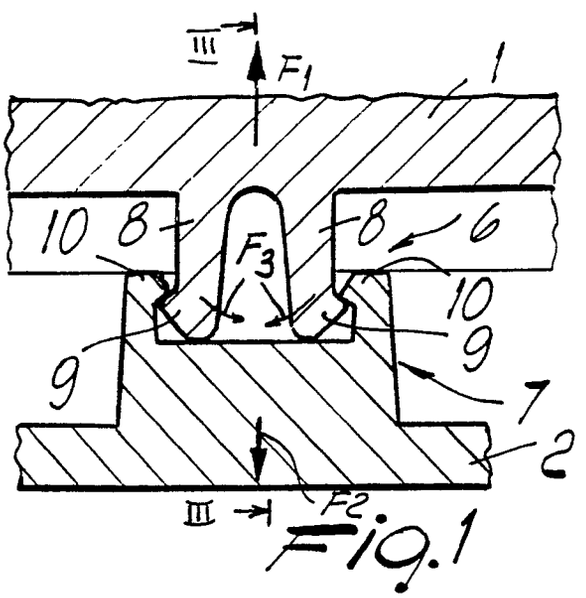

Fig.1

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CONTAINER PARTICULARLY FOR COSMETICS

The present invention relates to a container particularly but not exclusively for cosmetics.

Containers formed by two half-shells of plastic material or the like are normally used in this field of application; said half-shells define a lid and a base arranged mutually opposite and pivoted proximate to their rear edges.

A known container of this kind has a closure device which comprises, proximate to the front edge of one of the half-shells, a first closure element adapted to elastically couple by snapping with a second closure element provided on the other of said half-shells.

Opposite coupling portions are provided for the engagement of said closure elements and extend respectively towards the front edge of the container and towards the rear edge thereof, along directions which are substantially perpendicular to the pivoting axis and are parallel to the plane of contact of the half-shells.

In this known container the force required to couple and uncouple the closure elements therefore depends on the relative distance between said closure elements in the direction along which their coupling portions extend, and may vary between a minimum value, producing a loose coupling or none at all, and a maximum value, leading to a forced or impossible coupling due to absolute interference.

In view of the fact that the closure elements are provided on the front edges of the half-shells, the effectiveness of the coupling of the closure elements is a function of their relative position, which largely depends on the precision of the pivoting of the half-shells and on the different shrinkage of the materials employed.

In practice it has been observed that even small errors in positioning the seats for the hubs or the pivoting pins can give rise to severely incorrect couplings between the closure elements.

In order to improve this aspect, a solution could be to reduce production tolerances as to the seats for the pivoting pins, but this would lead to unacceptable increases in production costs.

The aim of the present invention is to obviate the above described disadvantages by providing a container which can be easily closed and opened.

Within the scope of the above described aim, a particular object of the present invention is to provide a container with a closure device the functionality whereof is substantially independent from the precision of the pivoting means of the lid with respect to the base.

A further object of the present invention is to provide a container which can be opened with one hand.

Not least object of the present invention is to provide a container which is relatively easy and economically advantageous to manufacture.

This aim, the mentioned objects and others which will become apparent hereinafter are achieved by a container, particularly for cosmetics or the like, comprising a pair of mutually opposite half-shells which define a base and a lid which are mutually pivoted proximate to one of their rear edges, characterized in that it comprises, proximate to the front edge of one of said half-shells, a first closure element which can be elastically snap coupled to a second closure element provided on the other of said half-shells, said closure elements having mutually opposite mutual coupling portions which extend along directions which are substantially parallel to the pivoting axis of said half-shells.

Further characteristics and advantages will become apparent from the description of some preferred but not exclusive embodiments of a container for cosmetics and the like, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figures 1 and 2 are sectional front views of a detail of the container according to the invention in a first embodiment, respectively in closed and in open position;

figures 3 and 4 are sectional side views of the detail illustrated in figures 1 and 2, taken along the lines III-III and IV-IV;

figure 5 is a general schematic top view of the container according to the invention;

figure 6 is an enlarged top view of a detail of the closure device illustrated in figures 1 to 4;

figure 7 is an enlarged front view of a second embodiment of the container according to the invention, with the closure device in engaged position;

figures 8 and 9 are sectional side views of a detail of the container according to the invention, in a third embodiment, respectively in closed and in open position;

figure 10 is a top view of the detail of figure 8, taken along the line X-X;

figures 11 and 12 are sectional front views of the details of figures 8 and 9, taken respectively along the lines XI-XI and XII-XII;

figure 13 is a sectional front view of a detail of the container according to the invention, in a fourth embodiment, in its closed position;

figure 14 is a sectional view of a container for cosmetics with the closure element provided on the insert, in closed position;

figure 15 is a sectional view of a container with the closure element provided on the insert, in its open position;

figure 16 is a schematic perspective view of the button with the closure element;

figure 17 is a schematic top plan view of the button in closed position;

figure 18 is a schematic top plan view of the button in open position;

figure 19 is a sectional view taken along the line XIX-XIX of figure 17.

With reference to the above described figures, in particular to figures 1 to 6, a container is shown which comprises two half-shells which define a lid 1 and a base 2 which are mutually pivoted along the axis 3 proximate to the rear edge 4. The container has a closure device proximate to its front edge 5; said closure device comprises a first closure element, generally indicated by the reference numeral 6, proximate to the front edge of the lid 1, which is adapted to elastically snap with a second closure element 7 provided proximate to the front edge of the base 2.

According to the invention, the closure elements 6, 7 have mutually opposite coupling portions which extend along directions which are substantially parallel to the pivoting axis 3.

According to the invention, the first closure element 6 conveniently comprises at least one tab 8 which extends in a direction which is substantially perpendicular to the coupling plane of the half-shells and has a hook-like coupling portion 9 adapted to elastically snap with a corresponding coupling counter-hook portion 10 defined on a wall 11 of the second closure element.

In a preferred embodiment, the first closure element 6 comprises a pair of said tabs 8 which are spaced apart and substantially parallel to one another; said tabs together define a fork which extends in a plane which is substantially perpendicular to the contact plane of the half-shells and is parallel to the pivoting axis 3. The coupling portions 9 are provided on the outer walls of the fork, on opposite sides with respect to the center distance line of the tabs 8.

In this preferred embodiment, the second closure element comprises a pair of said side walls 11 which are substantially mutually parallel and together define said coupling counter fork portions 10 which are arranged mutually facing each other.

Figure 1 illustrates the opening device with the closure elements 6, 7 engaged, before opening. By exerting separation forces along the directions indicated by the arrows Fl and F2 on the two half-shells, by virtue of the inclined surfaces 9a, 10a of portions 9, 10, the coupling portions 10 of the closure element 7 induce reaction forces on the coupling portions 9 of the closure element 6 along the directions indicated by the arrows F3; said forces tend to move the tabs 8 of the closure element 7 closer to one another.

Figure 2 illustrates the closure elements 6, 7 after their disengagement.

It can be seen that the configuration of the coupling portions 9, 10, with inclined surfaces 9b, 10b, combined with the elasticity of the tabs 8 and of the walls 11, provide a self-centering coupling between the closure elements 6 and 7 when they are engaged by moving them mutually closer.

Advantageously, according to the invention, the width of the coupling portion of one of the closure elements, in a direction which is substantially perpendicular to the pivoting axis and parallel to the contact plane of the half-shells, is greater than the width of the coupling portion of the other of said closure elements.

More particularly, as is better illustrated in figures 3 and 4, the width of the coupling portion 10 defined in the closure element 7 is greater than the thickness of the tabs 8 and consequently than the coupling portion 9 of the closure element 6.

A peculiar characteristic of the present invention resides in the fact that the width of the contact surface between the coupling portions, considered along a direction which is substantially perpendicular to the pivoting axis and parallel to the contact plane of the half-shells, is substantially constant and equal to the smallest width of the inclined faces 9a, 10a of said coupling portions (in this case to width of face 9a), as the mutual position of the closure elements varies in said direction.

In detail, it can be seen, again from figures 3 and 4, that a mutual movement of the closure elements 6, 7 due to a possible misalignment of the half-shells caused by manufacture errors in the hinges causes no substantial variation in the extent of the contact surfaces of the coupling portions 9, 10 within certain limits. The maximum extent of this misalignment can be considered approximately equal to the difference between the widths of the coupling portions 9, 10.

Figure 7 illustrates a second embodiment of the closure element 6, comprising a monolithical portion 8a instead of two spaced and elastic tabs, imparting greater rigidity to the closure element 6.

According to the invention, controllable release means are conveniently provided and interact with the closure elements 6, 7 to exert thereon releasing forces along a direction which is substantially perpendicular to the coupling plane of the half-shells.

According to the invention and as shown in figures 8 to 12, the release means preferably comprise a button 12 slidably mounted around the side walls 11 of the counter-fork defining the closure element 7. Said button has an actuation portion

protruding from the base 2 and an opposite active portion extending between the side walls 11. The active portion defines an inclined surface 13 adapted to interact with the end portions 14 of the fork defined by the tabs 8 which constitute the closure element 6. By exerting a force along the direction indicated by the arrow F4 on the button 12, as indicated in figures 8 and 9, its inclined surface 13 induces on the lid 1 a lifting force in the direction indicated by the arrows F5, as indicated in figures 9 and 11. As a consequence of said lifting force in the direction indicated by the arrow F5, the tabs 8 of the element 6 are pushed against each other in the direction indicated by the arrows F6, as indicated in figure 11, releasing the coupling portions 9, 10 of said tabs 8. The button is preferably formed as a tab which protrudes from the front edge of the base 1 of an insert 15 which is removably accommodated inside the base 2 or is fixed to its bottom.

In order to allow the elastic movement of the button 12 with respect to the insert 15 and the base 2, said button 12 is joined to the insert 15 by means of an elastic coupling portion 16 with a weakened cross section.

Figure 13 illustrates a further embodiment of the closure device, including a first closure element 6 which is formed monolithically instead of with two separate elastic tabs, according to the embodiment of figure 7, and is associable with a second closure element 7 provided with a release button 12 equal to the one shown in figures 8 to 12.

As shown in figures 14 to 19, one of said closure elements may be defined by the insert which is again indicated by the reference numeral 15.

In this embodiment, the closure element 7 comprises a pair of opposite teeth 30 which are provided in a recess 31 defined on the button, which is now indicated at 32.

Laterally to the teeth 30, which define a snap coupling with the first closure element, again indicated at 6 and formed on the upper half-shell 1, an inclined surface 33 is formed at the inner edge of button 12, said inclined surface 33 allowing opening of the lid 1 by acting on a corresponding inclined surface 34a formed by a projecting portion 34 rigid with the lid, when the closure element 6 is disengaged from the teeth 30 when the button 32 moves elastically toward the interior of the container.

According to a preferred embodiment, the button 32 is advantageously connected to the insert 15 by means of a weakening line 35 defined in the lower coupling portion of wings 37 which extend from the button 32 and are connected to the front portion of the insert 15.

Conceptually, the elastic movement of the button 32, instead of being obtained by means of a rotation about the weakening line 35, may be obtained by a translatory motion caused by the elastic resilience of a weakened front portion of the insert 15.

With this kind of arrangement, when the container is closed the first closure element 6 and the teeth 30 snap together; while the container is opened by virtue of the disengagement between teeth 30 and element 6 caused by the movement of the button 32, which causes the inclined surface 33 to act on portion 34 of the first closure element 6, consequently causing lifting of lid 1.

From what has been described it can thus be seen that the invention achieves the intended aims and in particular that it provides a container which is easy to open and close.

The container according to the invention furthermore has a closure device the functionality whereof is substantially independent from the precision of the pivoting means between the lid and the base.

Furthermore, when the push-button 12 is provided, the container may be opened with only one hand, and in all its embodiments the container according to the invention has a relatively simple and economically advantageous manufacture.

The invention thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, as well as the dimensions and the contingent shapes, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. A container, particularly for cosmetics, characterized in that it comprises a pair of mutually opposite half-shells defining a base, a lid and a contact plane and being mutually pivoted at a rear edge thereof along a pivoting axis, a first closure element formed at a front edge of a first of said half-shells, said first closure element being elastically associable in a snap-together manner with a second closure element formed on another of said half-shells, said closure elements having mutually

opposite coupling portions which extend along directions which are substantially parallel to said pivoting axis of said half-shells.

2. A container according to claim 1, characterized in that the width of the coupling portion of said first closure element in a width direction which is substantially perpendicular to said pivoting axis and parallel to said contact plane of said half-shells is greater than the width of the coupling portion of said another closure element along said width direction.

3. A container according to claim 2, characterized in that the width of a contact surface between said coupling portions, along said width direction, is substantially constant and equal to said smaller width in said width direction, as a mutual position of said closure elements varies.

4. A container according to one or more of the preceding claims, characterized in that said first closure element comprises at least one tab extending in a direction which is substantially perpendicular to said contact plane of said half-shells and defining a hook-like coupling portion and said second closure element comprises a corresponding counter-hook coupling portion, said hook-like coupling portion and said corresponding counter-hook coupling portion being elastically snap engageable when said closure elements approach to each other and elastically snap disengageable when said closure elements are moved mutually apart.

5. A container according to one or more of the preceding claims, characterized in that said first closure element comprises a pair of spaced apart, substantially parallel tabs defining together a fork which extends in a plane which is substantially perpendicular to said contact plane and parallel to said pivoting axis between said half-shells, said fork defining hook-like facing apart coupling portions for engagement with said coupling portions of said second closure element.

6. A container according to one or more of the preceding claims, characterized in that said second closure element comprises a pair of substantially parallel side walls defining together a complementary fork which has counter-hook shaped mutually facing coupling portions, said counter-hook shaped coupling portions being associable with said hook-like coupling portions of said fork for closing said half-shells.

7. A container according to one or more of the preceding claims, characterized in that it comprises controllable release means interacting with said closure elements to exert thereon forces for spacing apart said closure elements along an opening direction which is substantially perpendicular to said contact plane of said half-shells.

8. A container according to one or more of the preceding claims, characterized in that release means include a button slidably mounted between said side walls of said complementary fork, said button having a front actuation portion and an opposite active portion defining an inclined surface interacting with facing end portions of said fork and of said complementary fork to cause a mutual release of said coupling portions upon pushing said button, thereby opening said half-shells.

9. A container according to one or more of the preceding claims, characterized in that said button is joined to an insert accommodated on a bottom of one of said half-shells through elastic connecting portions having weakened cross sections.

10. A container, particularly for cosmetics, comprising a pair of mutually opposite half-shells defining a base and a lid pivoted to each other at a rear edge thereof along a pivoting axis, an insert accommodated in a first of said half-shells and defining an opening button, characterized in that it comprises a first closure element formed at a front edge of another of said half-shells and being elastically snap associable with a second closure element formed on said insert, said closure elements having mutually opposite coupling portions which extend along directions which are substantially parallel to said pivoting axis of said half-shells.

11. A container according to the preceding claim, characterized in that said insert defines, laterally to said second closure element, an inclined portion acting on said another half-shell for disengaging the closure elements of said half-shells upon an elastic release movement of said button.

12. A container according to one or more of the preceding claims, characterized in that said second closure element is defined in an opening formed in said button and defining said inclined portion.

13. A container according to one or more of the preceding claims, characterized in that said button is associated with said insert by means of a weakening portion allowing an elastic movement of said button with respect to said half-shells.

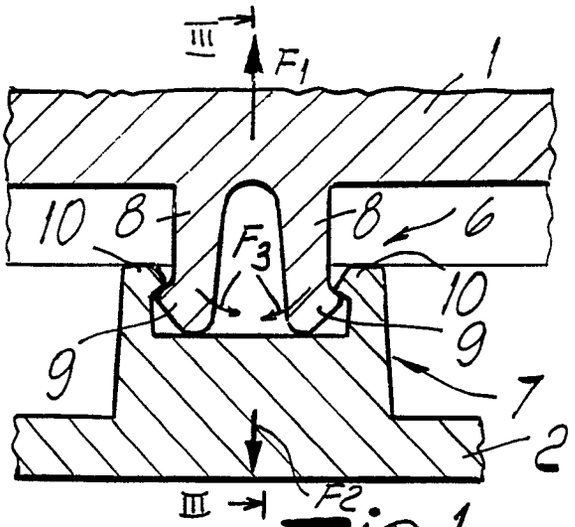


Fig.1

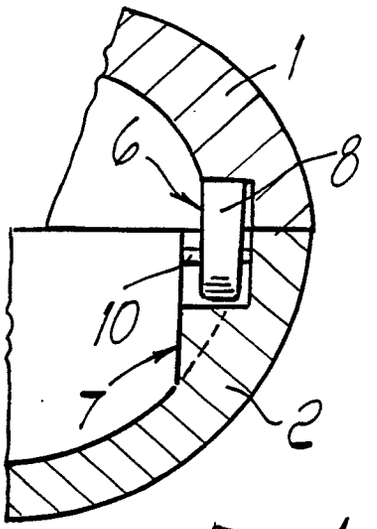


Fig.3

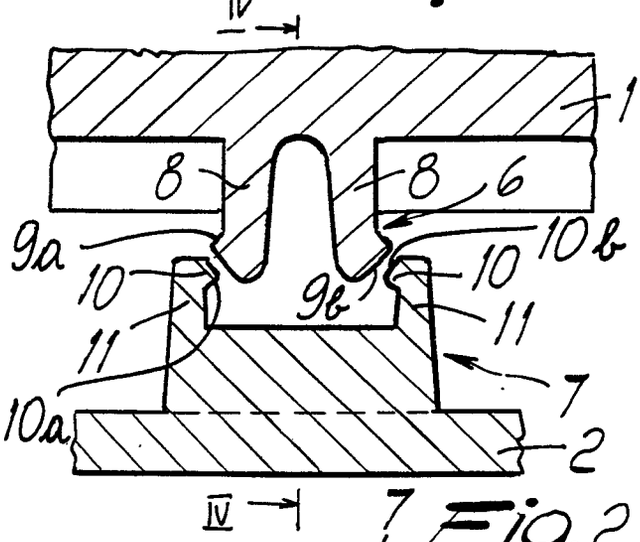


Fig.2

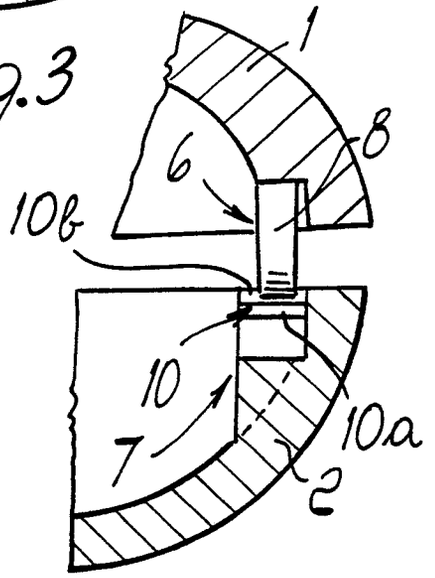


Fig.4

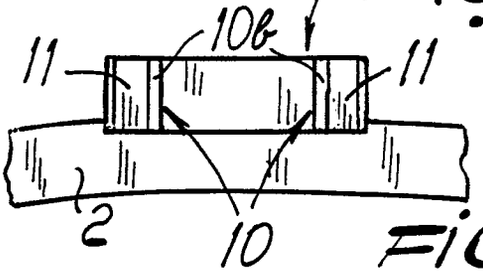


Fig.6

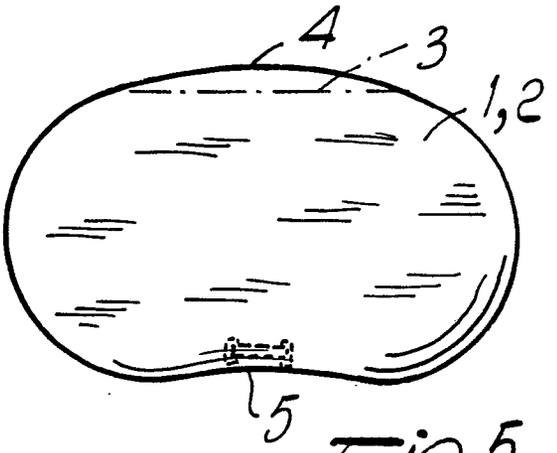


Fig.5

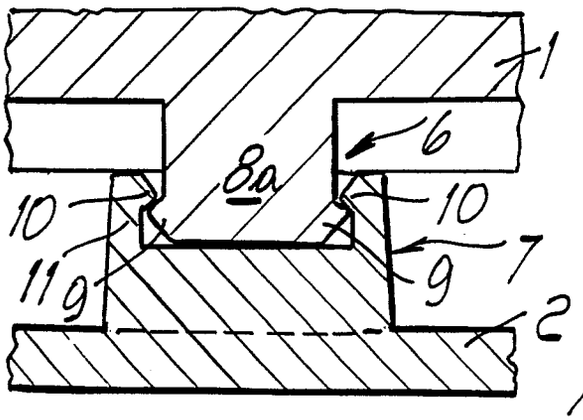


Fig.7

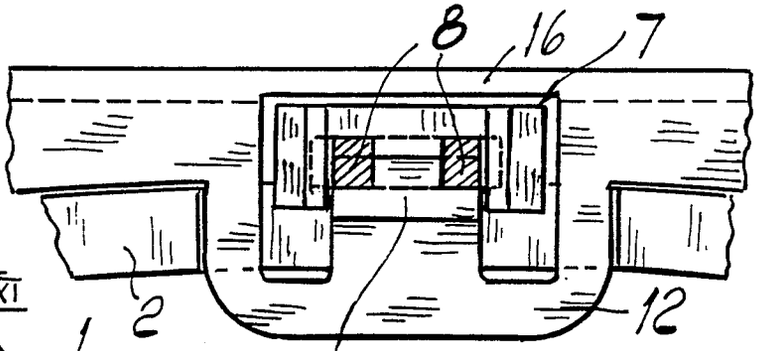


Fig. 10

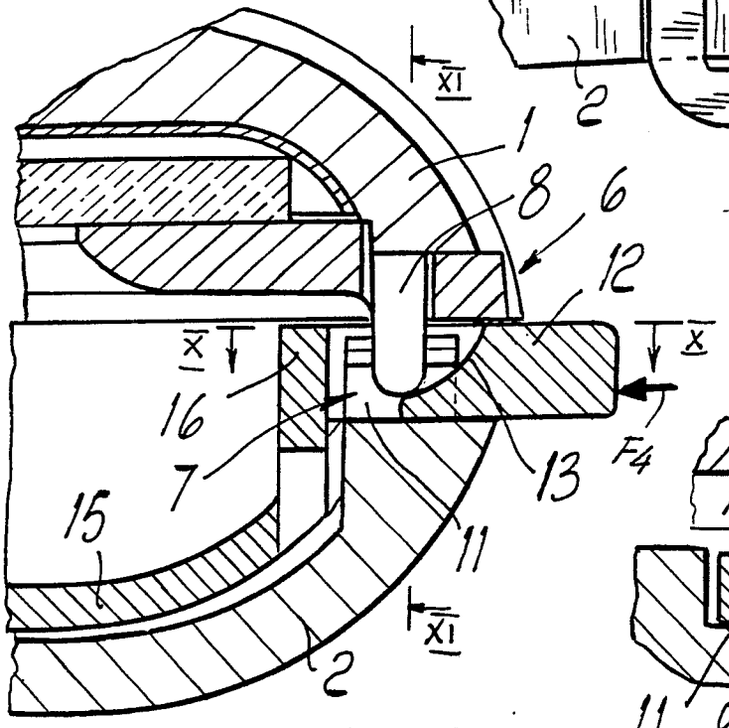


Fig. 8

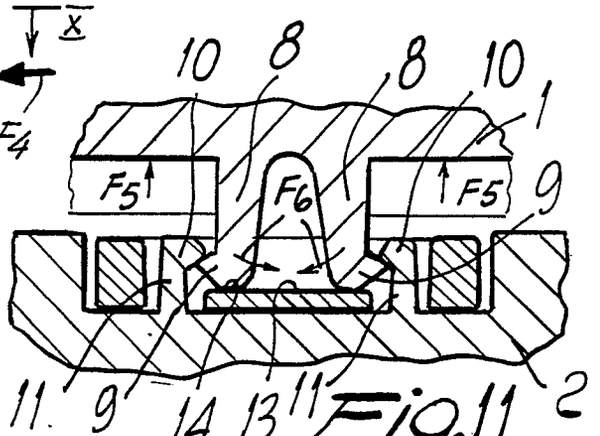


Fig. 11

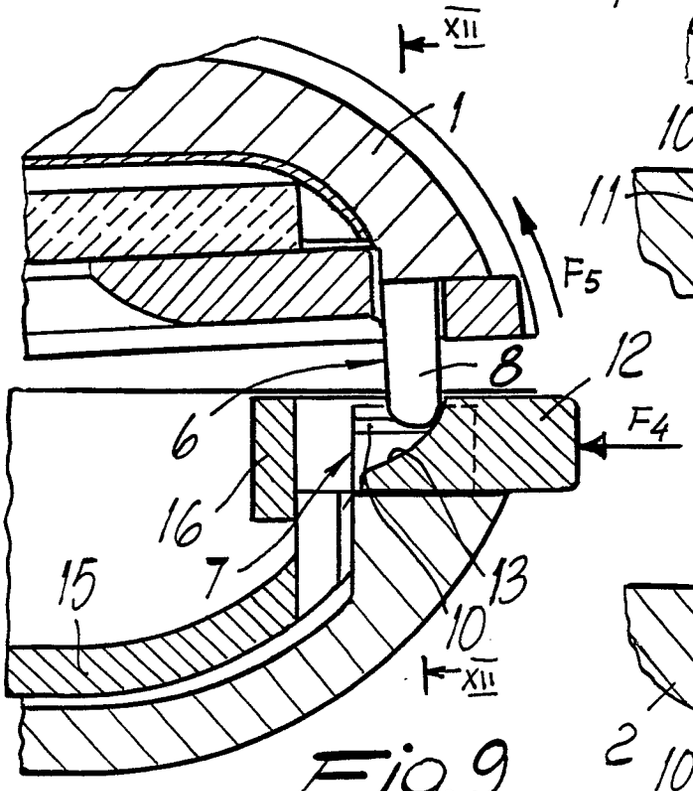


Fig. 9

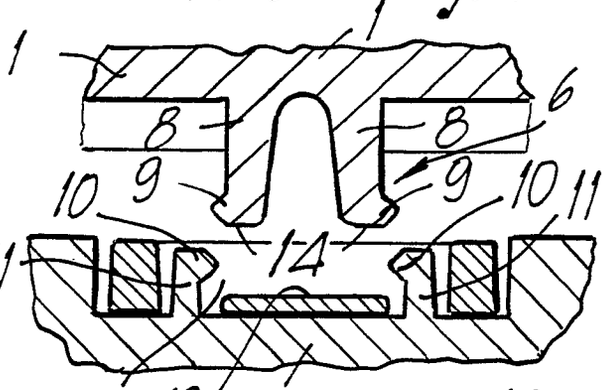


Fig. 12

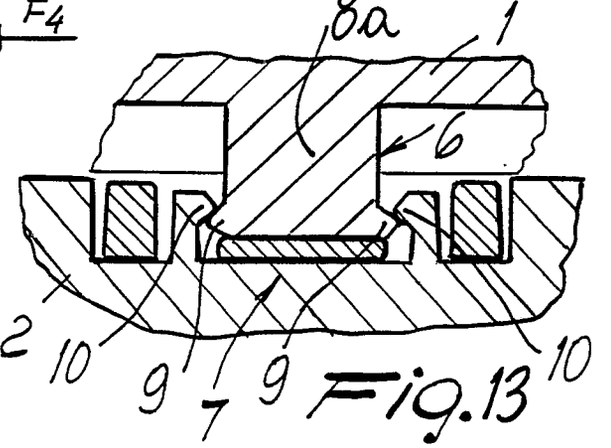
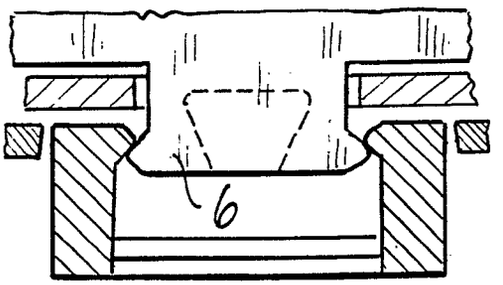


Fig. 13

Fig. 19



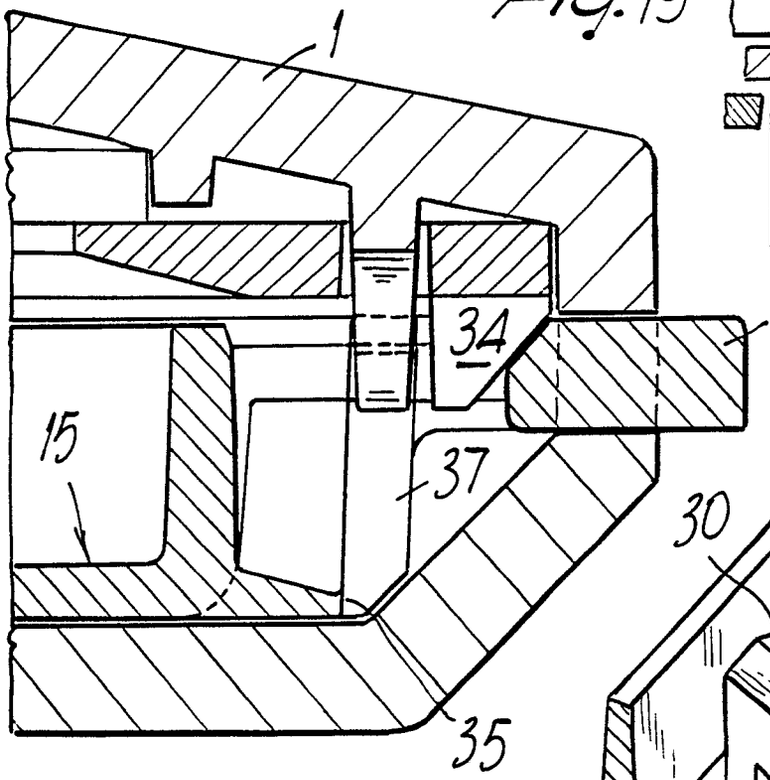


Fig. 14

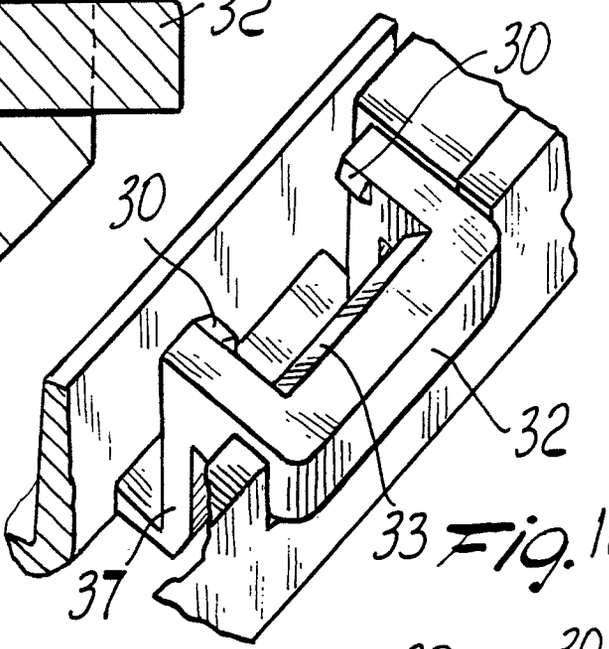
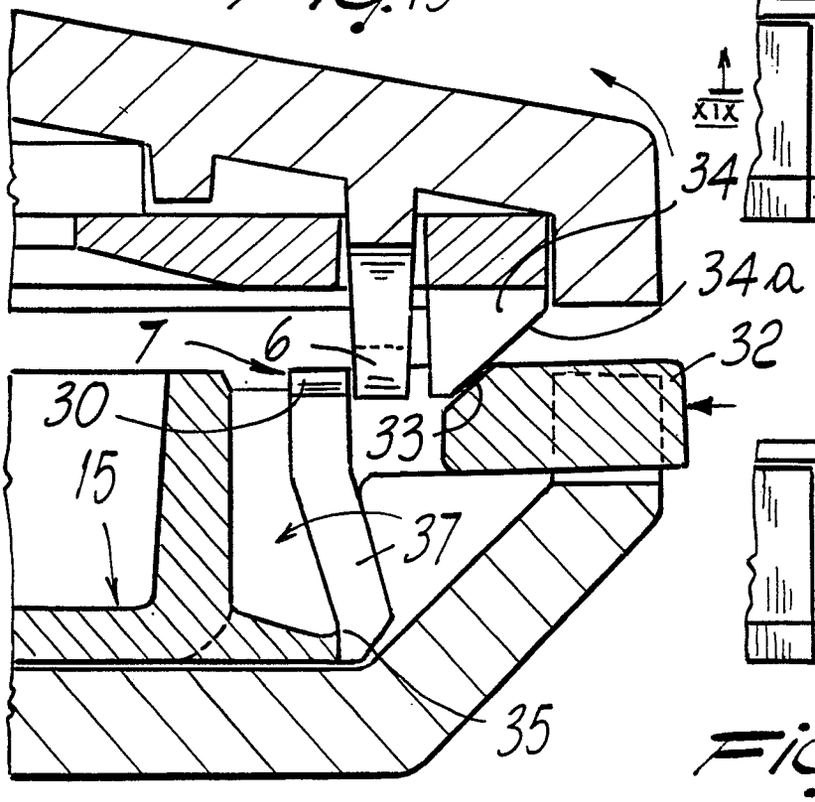


Fig. 16

Fig. 15



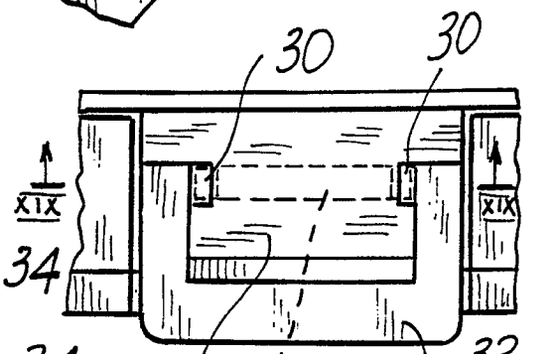


Fig. 17

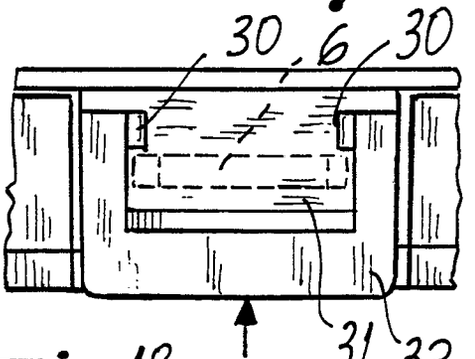


Fig. 18