(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 626 320 A2**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **94500033.9**

(51) Int. Cl.[5]: **B65D 47/08**

(22) Date of filing: **18.02.94**

(30) Priority: **03.03.93 ES 9300424**

(43) Date of publication of application:
30.11.94 Bulletin 94/48

(84) Designated Contracting States:
CH DE ES FR GB IT LI

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(54) Tube container with hinged cap.

(57) A container tube (1) and a hinged cap (6, 16) both cylindrical, with the tube printed on one front face and another rear face, in which the finger cot area (7) of the cap is centred in relation to the printing on the front. The neck of the tube and an internal skirt in the cap are provided with longitudinal teeth (4) and (17, 18) which correspond with each other in the longitudinal assembly of both. The cap is provided with a reference, by means of which it is possible to centre the finger cot area with relation to the printing on the front of the tube.

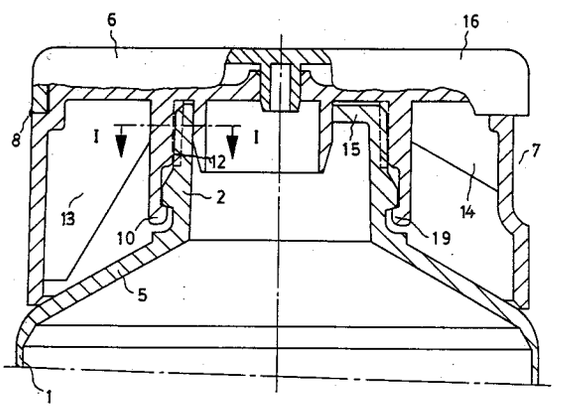

Fig.: 6

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This invention relates to container tubes for various products provided with a closer cap or lid for the tube, in which the tube has a neck through which the product can flow to the exterior and to which the cap is connected.

The exterior of these tubes is usually printed with texts, drawings, etc. allusive to the product contained, because of which there is a current tendency in containers with a cap or lid provided with a hinge to situate the finger cot or presser area of the lid in such a way that it becomes centred in relation to the main printed area of the tube, which means in relation to the front printing.

When dealing with tubes and hinged caps which are oval in shape, the existence of this fact is already known, with the neck of the tubular container being made with a guide on which an internal protrusion from the cap fits, and this neck guide being centred in relation to the main printing.

In these oval or eliptical containers, the printing is relatively simple due to the shape of the section, but the centring of the head with its guide in relation to the front printing cannot be carried out on a normal injection machine, which makes it necessary to carry out this operation on each container individually, with the undoubtedly high cost that this entails for each container.

As far as is known, containers of this kind which are circular have not been produced up to now in which the fact that the finger cot area of the cap is centred in relation to the main printing on the tube is also fulfilled.

The object of the invention is therefore to provide a container made up of a container tube provided with a neck or head, with a circular cross-section, and a hinged cap, also circular, according to which the finger cot in the cap is situated in a centred position in relation to the main printing on the tube.

In general terms, and as a guide, a conventional technique is used in order to produce a container of this type, starting with the extrusion of the tube, followed by the printing of the tube, the injection of the neck or head of the tube and the fitting of the cap. In this sequence, the order for injection of the neck of the tube and the printing can be altered.

Following these classical operations, and in an appropriate installation or assembly, the centring processes of the front printing with the finger cot area are carried out, so that once they have been suitably positioned, the assembly of tube and cap can be carried out.

As the object of this invention is not the procedure or method of carrying out the assembly, but the container itself, we must point out that in order to carry out the object mentioned above, the invention proposes a container tube with a circular cross section, which is closed and sealed at one of its ends by diametral welding or by some other alternative method, whereas the other end receives the neck with the cap. The outer side surface of the container tube is printed in two portions, one main and one secondary and usually printed on diametrally opposed planes.

The neck of the tube is of a diameter substantially smaller than that of the tube itself and at the portion of it which is closest to the tube, it is provided with a ring-shaped recess situated below a ring-shaped ledge, with access being, from above, by means of a trunco-conical cross section.

Above the ring-shaped ledge the neck, cylindrical in shape, extends towards its upper end, with all its outer side surface grooved by a series of longitudinal teeth cut parallel to the longitudinal axis of the container. The number of teeth is not defined, although considerable in number, which means that the teeth will be small in material size and generally triangular in shape.

The above mentioned toothed portion can be finished at its upper end with an internal diameter corresponding to the thickness of the material itself, and can also be finished by a front wall holed with a diameter smaller than that of the interior of the neck, as will be seen later with respect to the sheets of drawings which are attached.

In both cases, the upper end of the neck determines a seating for the cap which can provide a greater or smaller surface contact.

As regards the cap, it is a straight-sided cylinder with the upper hinge articulated onto its body and forming a whole with it, including one hinge area and another finger cot area diametrally separated from each other, with it being precisely this latter area which must be assembled centrally with the main printing on the container tube. The hinge has a tubular projection on its lower internal face which is housed in a hole in the cap itself.

The cap is provided with three concentric skirts, with the most outer one containing the finger cot portion, in the form of a recess, being adjusted in a greater or lesser degree to the external diameter of the container tube.

The second or middle skirt is adjusted to the exterior of the neck of the tube and includes a lower edge with a ring-shaped ledge next to a recess, also ring-shaped, by means of which it can be fitted by pressure to the above mentioned exterior of the tube neck, which, as was mentioned earlier, is provided with the corresponding means.

This second skirt is provided with a series of longitudinal teeth situated above the recess in it, which act in correspondence with the teeth in the tube neck.

The third or innermost skirt is housed inside the neck of the tube, receiving the front end of this

in a tight fit. This skirt is situated at a variable distance from the second one, in order to be able to receive the two previously mentioned possibilities for the front end of the neck.

The interrelationship between the longitudinal teeth in the cap and in the neck is carried out by inserting the letter into the former, obviously in a longitudinal direction. As there are a considerable number of teeth, the assembly of the neck and the cap can be carried out without excessive precautions about their mutual positions, since although on insertion the finger cot area and the centre of the main printing do not correspond with total precision, the number of teeth permits a slight circular play or movement of both, which engages the teeth perfectly without being noticeable to anyone watching.

The outermost skirt on the cap is connected to the toothed skirt by means of a series of regularly distributed ribs, which reinforce the cap assembly. It is established that one of these ribs will be oversized so that it can be used as a reference for the centring of the cap and the tube. It can be situated at any position inside the cap, for example separated by 180º from the finger cot area or any other, so that by taking it as a reference with a certain area of the tube, the centring can be achieved.

The positioning and assembly of the tube and the cap are carried out easily and without the possibility of the cap being extracted, as will be clear from the explanations already given and from the attached drawings, which show the following:

- Figure 1 is a sectional elevation of the neck of a tube according to the invention.
- Figure 2 shows a cap to be fitted to the above tube.
- Figure 3 is a bottom view of the previous Figure.
- Figure 4 is a sectional elevation of the neck of a variant of the tube.
- Figure 5 shows a cap to be fitted to the tube in the previous Figure.
- Figure 6 represents an enlarged view of the connection between the neck and the cap, showing the two constructive variants.

As shown in Figure 1, a container tube (1) is represented, with its head provided with a tronco-conical portion (5) and the neck. The latter is provided with the ring-shaped recess (3), the ring-shaped ledge (2) and its upper end is provided with a series of longitudinal teeth.

Figures 2 and 3 represent the cap to be connected to the said tube, with its upper hinged area (6) forming the hinge at (8) to the lower remaining part, in which the finger cot that operates the hinged part is formed. This cap has three skirts: the outermost one, in which the finger cot (7) is made, and the other two interior ones (middle and innermost), between which the neck of the tube will be housed. The outer one of these two skirts, being the middle one (9) in the cap, includes an internal lip (10) and a toothed area (12) with triangular teeth.

The outermost and the middle skirts are connected by means of the regularly distributed or spaced ribs (14), one of them (13) being oversized so that it can be used as a reference in the centring.

The other constructive variant for the tube, shown in Figure 4, represents the neck with its toothed portion (4) finished off by the holed closure area (15) which reduces the flow outlet from the interior of the tube. This tube is connected to the cap shown in Figure 5, which is similar to that shown in Figure 2, with the variation consisting of a greater dimension (17) between the inner skirts in order to accommodate the closure area (15) of the tube.

Referring now to Figure 6, we can observe here how the two tubes are shown with their two caps. Thus, in the left portion, the teeth (12) of the cap (6) become engaged with those in the neck of the tube, while the lower portion (10) of the middle skirt is housed in the ring-shaped recess in the neck. The thickness of the front end of the neck fits perfectly between the two skirts.

In identical conditions, the other variant, shown on the right of the axis, increases the space between the inner skirts in order to receive the greater neck dimension at this upper front end area.

The cross section cut through I-I, illustrated in Figure 7, allows the engagement between the teeth in the neck (2) and the corresponding ones in the cap (12), as can be appreciated clearly.

It is important to point out, once having described the nature and advantages of this invention, the non-restrictive character of the same, inasmuch as changes in the shape, material or sizes of its constituent parts will not in any way alter its essentiality, as long as they do not mean a substantial variation in the assembly.

Claims

1. Cylindrical tube with hinged cap centred with the printing on the front of the tube, with a container tube (1) closed and sealed at one end and provided with a circular neck with a lower ring-shaped recess (3) at its other end, and a cap that is connected to the said neck having a diametral hinge (6), an outermost skirt (7) that adjusts to the outer surface of the container tube and two inner skirts, between which the thickness of the neck of the container tube is received, and of which the larger

one is provided with an internal lip (10) which is housed in the ring-shaped recess (3) in the said neck of the container tube, with this container tube having printed matter on its diametrally opposed front and rear outer surfaces, which is essentially characterized in that both the container tube (1) and the cap (6) have a circular cross section, with the neck of the container tube having, between its free upper end and the area close to the ring-shaped recess, a portion occupied by a series of longitudinal teeth (4) which take up the whole side surface of this portion, in that the inner (middle) skirt is provided with a portion, close to where it starts from the cap, with another series of longitudinal teeth (12), by means of which it engages with the teeth in the neck of the tube when both are longitudinally assembled, in that the cap contains a portion (13) to act as a reference, which is made at an angular distance from the portion of the finger cot area, so that the latter can be adjusted in relation to the main printing on the container tube.

2. Cylindrical tube with hinged cap centred with the printing on the front of the tube, according to claim 1, characterized because the toothed portion of the neck of the tube finishes in a front end wall, centrally holed (15) with a smaller diameter, into which the smaller innermost skirt of the cap fits, with the whole of this front wall fitting tightly into the base of the cap from which the two inner skirt emerge and being taken in between the said skirts.

3. Cylindrical tube with hinged cap centred with the printing on the front of the tube, according to claim 1, characterized because the toothed portion of the neck of the tube culminates in the same thickness as the neck itself, with this front end resting on the base of the cap from which the two inner skirts emerge and being taken in between the said skirts.

4. Cylindrical tube with hinged cap centred with the printing on the front of the tube, according to claim 1, characterized because the reference in the cap for its centring in relation to the printing on the tube is an inner rib (13) in the cap, between the outermost skirt and the larger of the two inner ones or middle one, which is oversized and separated an angular span from the finger cot.

5. Cylindrical tube with hinged cap centred with the printing on the front of the tube, according to Claim 1, characterized because the teeth (4, 12, 18) in the neck of the tube and in the cap are preferably of a triangular cross section.

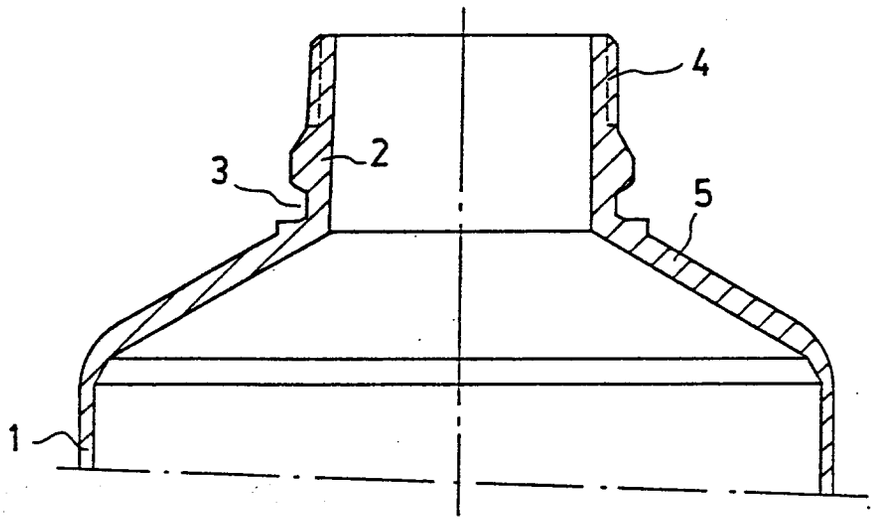

Fig.: 1

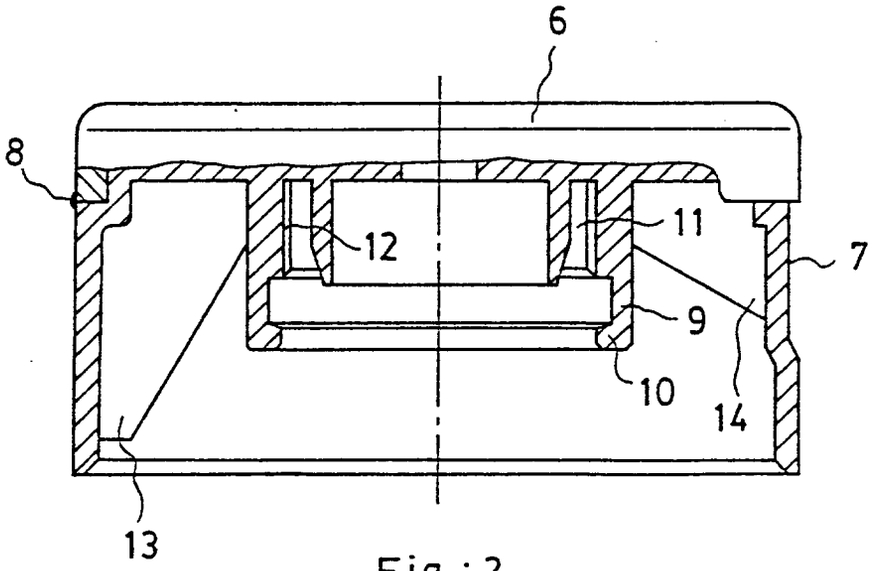

Fig.: 2

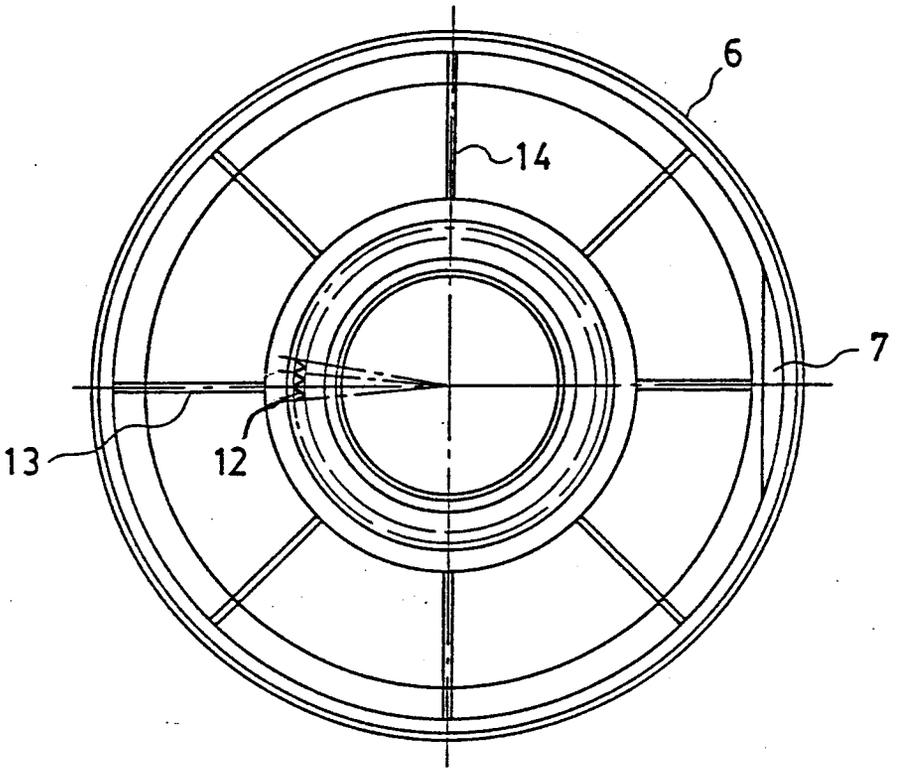

Fig.: 3

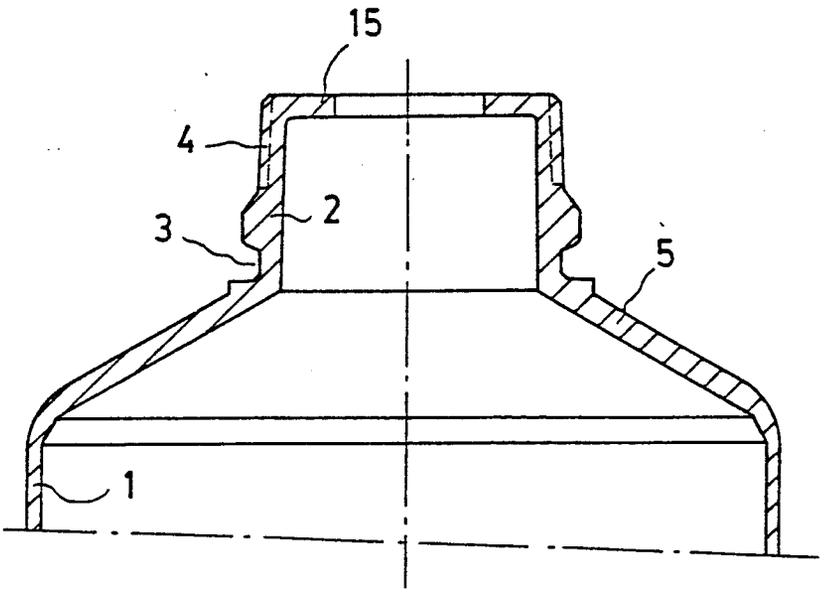

Fig.: 4

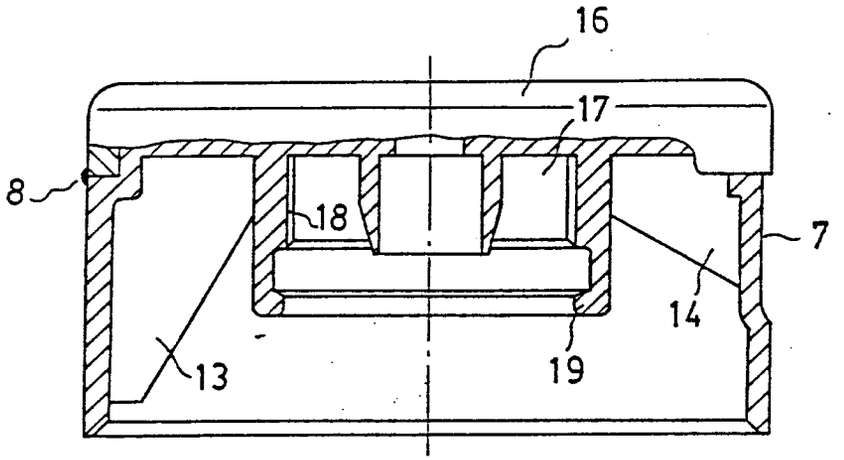

Fig.: 5

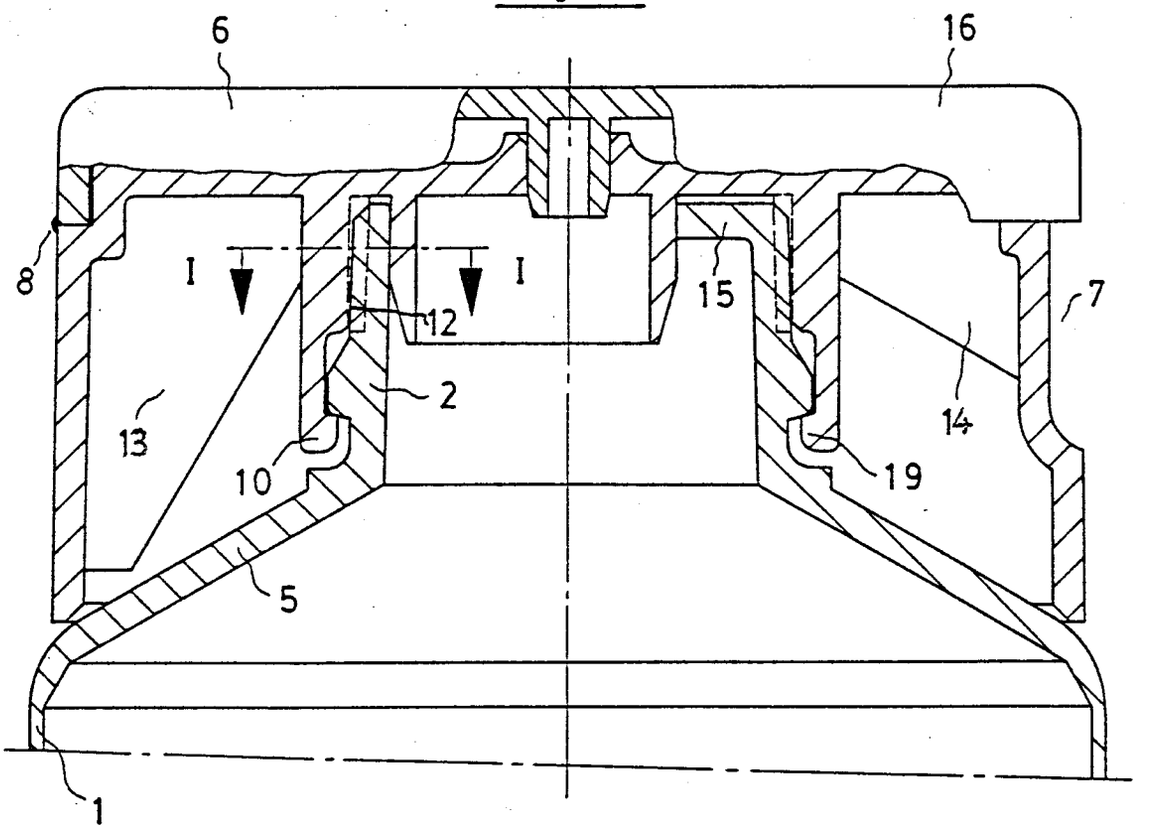

Fig.: 6

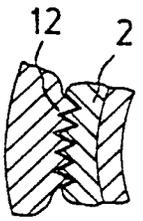

Fig.: 7