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(54) **A preformed disposable insert for fitting in a holder.**

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## Description

The present invention is a preformed disposable insert for fitting in a holder having bottom and sidewall portions defining a space for receiving the insert, the insert having an upper portion which is relatively stiff compared with the remainder of the insert and having a downwardly extending collar, the collar being connected with the upper portion by an upper rim that, in use, is arranged above the upper portion of the holder.

Cups having disposable inserts used, for example for drinks, are known in a number of different forms. The known inserts are constructed of a stiff material, usually plastic and most often polystyrene, of a constant material thickness. Examples of such inserts are disclosed in Swedish patents Nos. 224.840 and 302.254. In another known construction, described in Swedish patent No. 337.455, the holder has a substantially rigid shell and an insert is pushed down into the shell. The insert is formed with a downwardly extending external collar, which together with the insert wall, defines an annular V-groove that receives the upper edge of the shell. The insert is suspended from the inner edge of the shell and hangs freely down from the V-groove into the interior of the shell. One of the disadvantages of this known insert is that its V-groove suspension over the shell upper edge causes it to be tightly encircled so that it is difficult to remove.

Another difficulty to this upper V-groove support construction arises due to the fact that inserts of this type are normally marketed in stacks. If an insert is to be removed from a stack, to be fitted in a holder, the stack inserts tend to be pinched together in the V-collar portions stacked one inside the other, and thus several inserts may bunch together. This can make removal difficult and can require the stack to be manipulated by hand. Thus, the inserts tend to become dirty, which is unhygienic.

In another known construction, an insert has retaining lips in the relatively thick base section of the insert for the purpose of locating the insert in a shell. The insert base is then pressed tightly into the container base. Here again, the same difficulties arise when the insert is to be removed from the container.

The prior art inserts tend to be relatively thick so as to be stiff, and are relatively expensive in material and manufacturing costs.

The present invention is an improved disposable insert and a holder therefor, which are suitable for mass production, which provide appreciable savings in material and manufacturing costs, which are hygienic to use, and which cooperate to form a sturdy drinking cup or other type of container.

More particularly, a disposable one piece insert in accordance with the invention is provided near its upper end with circumferentially disposed, laterally projecting means positioned to bear against the adjacent wall of the holder and

arranged fixedly to locate the insert within the holder against both vertical upward and horizontal movements, the insert is releasably retained against removal from the holder solely by said projecting means, and the wall thickness of the insert gradually decreases from the upper portion towards the bottom which is adapted to rest on the bottom of the holder.

In one embodiment of the invention, the diameter of the insert projecting means differs slightly from the diameter of the holder sidewall in the corresponding abutment surface in order to create a radial surface pressure which produces, in turn, axial retention. Such a projecting means also acts as an abutment for stacking a plurality of inserts, and extends continuously around the top part of the insert on the stiff upper sidewall.

In another embodiment of the invention, the annular projection is adapted to cooperate with an annular recess formed in the sidewall of the holder. The insert projection and holder sidewall so formed have cooperating engagement surfaces to provide axial retention of the insert.

In one form of this embodiment, the top part of the holder sidewall has a continuous, annular recess adapted to receive the projection on the insert. The recess is formed on the inside of the holder sidewall.

In a modified form of the embodiment, the annular recess on the holder has an upper diameter  $D_1$  that increases toward a maximum diameter  $D_2$ , in the deepest portion of the recess, and a substantially horizontal lower shoulder having an inside diameter  $D_3$ , the diameter  $D_3$  being smaller than the diameter  $D_1$ . In this embodiment, the insert can be pressed down into the holder and will just fit through the holder sidewall having the diameter  $D_1$  into the recess. Once in the recess, the projection fits snugly in the portion having diameter  $D_2$ , but is prevented from being pushed further into the holder by the shoulder portion containing the relatively small diameter  $D_3$ , which is too small for the projection to be pushed through.

For a better understanding of the invention, reference is made to the following detailed description of the preferred embodiments, taken in conjunction with the drawings accompanying the application.

Fig. 1 is a side elevation, partially in section of a cup having a disposable insert in accordance with the invention;

Figs. 2 and 3 are longitudinal section views, on an enlarged scale, through a portion of additional embodiments of inserts, and a holder therefor, in accordance with the invention;

Fig. 4 is a sectional view through a portion of three inserts stacked one inside the other;

Fig. 5 is an enlarged scale sectional view of the upper portion of another embodiment of a holder for use with an insert in accordance with the invention;

Fig. 6, 7, 8, 9 and 10 are longitudinal sectional views, on an enlarged scale, through a portion of

alternative embodiments of inserts and holders therefor in accordance with the invention;

Fig. 11 is a perspective pictorial view of a plurality of stacked inserts and illustrates the removal by the holder of one of the inserts from the stack; and

Fig. 12 is a longitudinal sectional view of another type of insert in accordance with the invention.

In the figures, like numerals represent corresponding elements of the various embodiments of inserts and holders for use therewith, in accordance with the invention.

Referring to Fig. 1, a cup 1 has a substantially rigid cup-shaped container or holder 2, of substantially circular cross-section. The holder 2 has a substantially vertical sidewall 3 and a bottom 4 containing a central aperture 5. An annular bottom flange 6 acts as the base for the holder 2.

A disposable, thin walled insert 7 is disposed inside the cup-shaped holder 2. The insert 7 has a substantially vertical sidewall 8 joined to a bottom wall 9. The sidewall 8 of the insert 7 is relatively thin walled in the vicinity of the bottom wall 9, and increases in thickness towards a rounded upper edge 10. The stiff upper portion of the sidewall 8 is joined via the rounded edge 10 to a stiff, substantially vertically downwardly extending collar 11. The angle between the sidewall 8 and the collar 11 is generally between 12° and 24°, and preferably between 16° and 20°. The insert 7 is made in one piece, for example by hot-forming as disclosed in Swedish Patent No. 77 08 234-5 to have the stiff upper portion 12 (which includes both the collar 11 and the stiff upper portion of the sidewall 8 of the insert). The sidewall 8 of the insert becomes increasingly thinner toward the bottom wall 9, and thus has a material thickness much less than the upper portion 12 of the insert.

The holder 2 and insert 7 form a unit which can serve as a cup or beaker, for example for hot drinks. The collar 11 acts as a protection against direct contact with the holder wall 3 itself. In this way, the insert 7 after use can be thrown away and a new insert 7 fitted into the holder 2 without it being necessary to wash the holder.

The stiff upper portion 12 of the insert is also formed with a continuous annular projecting means 13 extending toward the holder wall 3 near the upper edge of the holder. In the Fig. 1 embodiment, the projecting means 13 is formed on the upper portion of the insert sidewall 8 to engage the inside of the holder sidewall 3 so that the insert 7 is laterally located in the upper portion of the holder 2. In addition, the projecting means 13 positions the insert bottom wall 9 to abut the holder bottom wall.

In the embodiment shown in Fig. 2, the holder 2' is formed with a continuous recess 15' in the upper portion of the holder that extends from the holder top edge 14 to a shoulder adapted to receive the projection 13a on the insert. The distance between the projection 13a and the upper edge 10 of the insert 7a is larger than the

distance between the shoulder of the recess 15' and the upper edge 14 of the holder 2'. As a result, the insert 7a can be more easily removed from the holder 2' because the upper edge 10 of the insert does not wrap around and enclose the upper edge 14 of the holder 2'.

Fig. 3 discloses a modified form of the Fig. 2 embodiment. The insert 7b contains a projection 13b, and the distance between the projection 13b and the upper edge 10 of the insert is larger than the distance between the shoulder of recess 15' and the upper edge 14 of the holder wall 3'. In this embodiment, the upper edge 10 of the insert 7b is spaced a distance from the top edge 14 of the holder wall 3' so that the collar 11 is disposed over, but does not overlie (as in Fig. 2), the top edge 14 of the holder. The collar 11 and upper edge 10 nevertheless protect the user from unwanted contact of the holder since the collar 11 is disposed a sufficiently large distance outwardly (in a radial direction) from the top edge 14 of the holder.

As shown in Fig. 4, in an insert having a projection, for example insert 7b having projection 13b, the inserts may be stacked together and the projection 13b used as a stacking abutment. This facilitates the removal of one insert at a time from the pack without jamming so that, as illustrated in Fig. 11, one insert at a time may be attached to a holder without need to manipulate the entire stack.

Fig. 5 illustrates another construction of a holder 2'' in which the sidewall of the holder 2'' has a substantially V-shaped annular recess 15'' extending around the top portion of the holder 2''. As shown, immediately above the actual recess 15'' the holder 2'' has an inside sidewall diameter  $D_1$ , which is somewhat smaller than the diameter  $D_2$  corresponding to the maximum depth of the recess 15''. By suitable sizing of the diameters  $D_2$  and  $D_1$  to cooperate with a projection 13 on the disposable insert 7, the projection 13 passes resiliently over the top part of recess 15'' and into the recess 15'' itself. Since the projection 13 is somewhat resilient, the insert 7 remains in its position of engagement in the recess 15'' subject to relatively weak radial forces. However, the insert can be removed readily by pulling out of its located position in the holder 2'' using the fingers. The resilience of the projection 13 is thus readily overcome so that the insert 7 can be removed and another inserted in its place.

When inserted and removed, the projection 13 of the insert 7 engages the wall surface at diameter  $D_1$  and enters into the gradually sloped groove 15''. Thus, in the direction in insertion and removal, the diameter change of the recess 15'' occurs gradually to facilitate insertion and removal. However, the bottom portion of the groove 15'' is in the form of a shoulder having a bearing surface 16. The shoulder has an inside diameter  $D_3$  which is smaller than the diameter  $D_1$ . Due both to the fact that the bearing surface 16 is substantially horizontal, and the fact that the shoulder diameter  $D_3$  is relatively small, the insert

cannot be pressed down past the required position of retention, i.e. where projection 13 is resting on bearing surface 16.

A hot-formed insert 7, with the above described stiff upper portion and thin walled sidewalls and bottom walls, has the property that, when filled with liquid, it is self supporting and will retain its shape even without the holder. In other words, the weight of the liquid in the insert presses on the thin sidewalls and bottom wall to support the stiff upper portion from the bottom and prevent the insert from collapsing. Consequently, it is unnecessary for the disposable insert to be so constructed that its upper edge 10 rests on the upper edge 14 of the holder 2, i.e. so that the thin walled portions are hung from the edge 14.

In an alternative embodiment, illustrated in Fig. 6, the insert retaining function of the projection is achieved without a cooperating groove or recess 15 in the holder 2. The diameter of the insert 7d at the surface of the projection 13d, which abuts the holder 2, is slightly larger than the holder diameter at the corresponding abutment surface. The radial surface pressure thus produced between the projection 13d and the container wall produces the required axial retention force for the insert 7d. Optionally, the collar 11 can be disposed to engage the holder sidewall when located by the projection 13, as shown in Fig. 6.

The projection 13d, in the Fig. 6 embodiment, is provided on the stiff upper wall portion of the insert 7d and thus cooperates with the inside of the holder sidewall. Alternatively, the projection may be provided on the downwardly extending collar 11 of the insert to engage the outside of the holder wall.

Fig. 7 illustrates a modification of the insert 7b shown in Fig. 3. The Fig. 7 insert 7e may be used on a holder 2 of the type shown in Figs. 1 and 6 such that the retaining action is achieved without using any internal recess or groove in the holder 2. In addition to the retainment provided by the projection 13e, an outwardly projecting shoulder 17 is provided in the upper stiff wall portion of the insert 7e above the projection 13e in such a way that the insert rests on the upper edge 14 of the container. This variation has the advantage that for a certain stated volume the holder 3 can be made considerably lower than the other embodiments according to the invention. This is important from material point of view, and thus economically, but also considering the fact that the lower holders require considerably less space when stacked.

In the Fig. 8 embodiment, the insert 7g is provided with an annular projection 13g on the stiff upper portion of the insert sidewall, which cooperates with a groove 15<sup>iv</sup> on the inside sidewall of a holder 2<sup>iv</sup>. In this embodiment, neither the upper portion of the insert 7g nor the collar 11 engages the upper portion of the holder 2<sup>iv</sup>.

In the Fig. 9 embodiment, the inserts 7h, 7f are provided with two annular projections 13h, 13h', 13f, 13f' the upper of which are intended to

cooperate with a groove 15<sup>v</sup> on the inside wall of a holder 2<sup>v</sup> as shown in Fig. 10. When the inserts are stacked one inside the other the upper projection 13h abuts the upper edge of the insert below.

This embodiment of the insert can also be used in combination with a modified holder 2<sup>vi</sup> as shown with dotted lines in Fig. 9. In this alternative embodiment one of the annular projections is used for stacking and the other is used for engagement with a groove or shoulder adjacent the upper edge of the insert.

Referring to Fig. 11, a plurality of inserts 7 are stacked one inside the other. As described below, the retaining effect produced in accordance with the invention between the holder 2 and the insert 7 facilitates the fitting of an insert into a holder and removal from the stack.

For handling, storage and shipping purposes, such inserts are distributed in a pack in which a plurality of inserts are nested one inside the other. Known inserts may at times be difficult to remove from such packs because the collars of adjacent inserts wedge one inside the other. The difficulty in separating the stacked inserts requires that they be handled to be pulled apart, such that the collar portions readily become dirtied when the insert is actually fitted in the holder. This is particularly unhygienic since these parts subsequently come into direct contact with the mouth.

In the present invention, in contrast, the inserts do not become packed so tightly as to produce a wedge effect between consecutive inserts in the stack, since the projections 13—13h act as stacking abutments. Thus, as shown in Fig. 11, a holder may be inverted and pressed lightly down over the top insert 7 in the inverted stack, and the insert will engage the holder for removal. The top insert in the stack is thus lifted freely in its position of retention in the holder while the remaining inserts in the stack remain undisturbed without the need to grab hold of and secure the remaining inserts.

The method of securing the insert to the holder by force is important when the inserts are placed in a holder. It is thus possible to tip the holder with the insert or turn it upside down without the insert falling out. However, normally no securing effect is required when the drink has been consumed, for instance coffee. It has now proved possible to neutralize the securing effect in a simple way when using inserts and holders for hot drinks. If the plastic material utilized is equipped with such qualities that it shrinks after being reheated to e.g. not less than 50°C and if the diameter of the projection 13 is suitably selected in relation to the diameter of the upper, securing part of the holder, the diameter of the projection 13 can be reduced when the material shrinks after having been heated by the hot drink, so that the securing effect is neutralized. In other words, according to this embodiment of the invention, it is possible to secure the insert in the holder until the hot drink has been consumed. The shrinking of the material takes place momentarily so that when the drink is finished the holder has been

relieved from the securing. Thus it is only necessary to turn the holder upside down over for example a garbage bag and thus the insert is forced by its own weight to fall out of the holder.

A suitable material to achieve this effect is for example cold stretched polypropylene. Also other plastic materials with similar qualities are of course possible to use.

It is readily apparent that considerable savings can be achieved relative to the material and production costs of the insert and cooperating holder in accordance with the invention. By way of example, a disposable insert in accordance with the invention can be made from a plastic material with an initial thickness of 0,12 mm. An insert of this kind suitable for a coffee cup holder has a total weight of approximately 1,0 g. Corresponding inserts for the same liquid volume capacity, which are made conventionally with a constant thickness material of polystyrene, have a weight of approximately 4,2 g. The inserts proposed according to the invention can readily be stacked one inside the other and also readily separated from the stack despite the fact that they have very thin bottom and lower sidewalls. Since the top part of the insert bears against the projection provided according to the invention, and its thin base bears against the container bottom, a stable and heat-resistant drinking container is produced with a very light weight and thin walled disposable insert.

In the above examples the insert had a weight of 1,0 g and was made from a polypropylene film having an initial thickness of 0,12 mm. The disposable insert had a volume of 2,0 dl. In another example an insert of the same shape and volume was manufactured of polypropylene with an initial thickness of 0,25 mm. The thin bottom had a thickness of 0,06 mm and the weight of the insert was 1,5 g.

Figure 12 shows a sectional view of the wall material disposition of an insert manufactured in

accordance with the invention. The sectional area through a portion of an equal insert, corresponding for example to the insert in Fig. 8, is marked with dotted lines in Fig. 12. The lateral scale has been enlarged so that the differences in wall thickness will appear clearly. A traditionally shaped insert would, if it had the same wall thickness all over, have the inner, dotted outline according to Fig. 12. Theoretical calculations show that for the described cup-shaped products the weight difference depending on difference in material disposition would mean that an insert according to the invention would have about half the weight of an insert with a uniform wall thickness.

In practice, the weight difference is even greater. This depends on the fact that it is impossible to achieve a uniform wall thickness by traditional vacuum forming. In order to distribute the material as evenly as possible, the material is first mechanically formed in the mould with a plunge and thereafter formed with vacuum. Thus, to a certain degree uneven material disposition with thicker and thinner portions is obtained. Since the demand made of a traditionally shaped insert is that it should be stiff throughout, it is necessary to check during the manufacturing that the thinnest part has a sufficient thickness so as to get a good stiffness. This means that the remaining portions of the insert due to the above mentioned non-uniformities will be overdimensioned, which leads to the fact that in most cases the net weight of a traditionally shaped insert is up to three times that of an insert formed according to the invention.

The table below shows a comparison between different inserts for hot drinks collected from the market and compared with bowl-shaped cups with a form corresponding to Fig. 1 of the present invention, where H signifies an insert corresponding to e.g. the one in Figs. 2 and 8, while B corresponds to the insert shown in Fig 7.

	H	B	1	2	3	4
Net weight, gram	1,6	1,6	4,4	4,0	4,8	3,7
Contents, dl	2,2	2,2	2,2	1,6	2,0	2,2
Gram/dl	0,73	0,73	2,0	2,5	2,4	1,70
Wall thickness upper portion, mm	0,20	0,20	0,34	0,36	0,33	0,35
Wall thickness lower portion, mm	0,05	0,06	0,20	0,20	0,23	0,18

As appears from the above table, the relevant traditionally shaped cups 1—4 have a wall thickness in the lower portion of between 0,18 and 0,23. This is apparently the lowest thickness required in order to obtain sufficient stiffness for the type of cup and material in question. The other portions of these cups are thicker. In the cups of type H and B the wall thickness in the

upper portion is 0,20 which as mentioned before provides an adequate stiffness.

In the above example the cups have been produced from a polypropylene film. This material has proved to be most suitable for several reasons. One reason is that the polypropylene provides an appropriate flexibility as regards the manner of securing the insert to the

holder, where a certain flexibility is desirable. Secondly, propylene is very suitable for example hot drinks as there are no environmental risks.

The foregoing represents a description of the preferred embodiments of the invention. Modifications and variations of the insert constructions disclosed herein, and of the cooperating holders, will be apparent to persons skilled in the art without departing from the scope of the invention as defined by the appended claims. For example, the inventive principle can be applied to the production of vessels for other differing applications, e.g. food preparation and storage vessels, waste receptacles, vessels for medical or dental purposes, and food containers for ready-cooked meals.

### Claims

1. A preformed disposable insert (7) for fitting in a holder (2) having bottom (4) and sidewall (3) portions defining a space for receiving the insert, the insert having an upper portion which is relatively stiff compared with the remainder of the insert (7) and having a downwardly extending collar (11), the collar (11) being connected with the upper portion by an upper rim (10) that, in use, is arranged above the upper portion (14) of the holder, characterized in that:

the insert (7) is provided near its upper end with circumferentially disposed, laterally projecting means (13) positioned to bear against the adjacent wall of the holder (2) and arranged fixedly to locate the insert within the holder against both vertical upward and horizontal movements,

the insert (7) is releasably retained against removal from the holder (2) solely by said projecting means (13),

the wall thickness of the insert (7) gradually decreases from the upper portion towards the bottom which is adapted to rest on the bottom (4) of the holder (2).

2. An insert according to claim 1, in combination with a holder therefor characterized in that said holder (2) has a recess (15) extending around an upper portion of the holder sidewall (3) for cooperating with said annular projecting means (13), and said annular projecting means engages said recess to position said insert (7) in said holder.

3. An insert according to claim 2 in combination with a holder therefor, characterized in that said recess (15) extends from the holder upper portion (14) toward the holder bottom portion (4).

4. An insert according to claim 2 in combination with a holder therefor, characterized in that said recess (15) is spaced from the holder upper portion (14).

5. An insert according to claim 4 in combination with a holder therefor, characterized in that said recess (15) is preformed in cross-section, to have a depth gradually increasing in the direction of the holder bottom portion (4) and to terminate in

a lower, substantially horizontal shoulder for engaging said annular projecting means (13).

6. An insert according to claim 5 in combination with a holder therefor, characterized in that said insert (7) is cup-shaped and wherein said annular projecting means (13) extends annularly around said stiff upper portion (12).

7. An insert according to claim 1 in combination with a holder therefor, characterized in that said collar (11) is spaced above and radially outwardly from the holder upper portion (14).

8. An insert according to claim 7 in combination with a holder therefor, characterized in that said insert (7b) has an outwardly extending portion between said annular projecting means (13b) and the insert upper rim (10) for engaging said holder upper portion (14) to support said collar (Fig. 3).

9. An insert according to claim 1, characterized in that said insert (7) is stackable inside another insert and that said annular projecting means (13) forms an abutment for preventing engagement of collars (11) of adjacent inserts in a stack.

10. An insert according to claim 1, characterized in that said annular projecting means (13) is disposed on said stiff upper portion.

11. An insert according to claim 1, characterized in that said collar (11) and said stiff upper portion (12) are disposed at a relative angle of between 12° and 24°.

12. An insert according to claim 1, characterized in that said collar (11) and said stiff upper portion (12) are disposed at a relative angle of between 16° and 20°.

13. An insert according to claim 1, characterized in that said annular projecting means (13) extends annularly around said stiff upper portion, and wherein said insert (7) is formed of a plastic material in which said stiff upper portion (12) shrinks after being heated.

### Patentansprüche

1. Ein in einen Halter (2) einsetzbarer Einweg-Formeinsatz (7), wobei der Halter (2) Boden (4)—und Seitenwandbereiche (3) aufweist, um einen Aufnahmeraum für den Einsatz (7) zu definieren, wobei der Einsatz (7) ein im Vergleich mit dem übrigen Einsatzteil relativ steifes Oberteil und einen nach unten weisenden Kragen (11) besitzt, der mit einer Oberkante (10), die in eingetzter Lage über dem Oberteil (14) des Halters (2) liegt, mit dem Oberteil des Einsatzes (7) verbunden ist, dadurch gekennzeichnet, dass der Einsatz (7) nahe seinem oberen Ende mit wenigstens einem seitlich herausragenden, ringförmigen Vorsprung (13) vorgesehen ist, wobei dieser Vorsprung (13) am Seitenwandbereich des Halters (2) angreift um den Einsatz (7) im Halter (2) senkrecht und horizontal zu fixieren, das der Einsatz (7) lediglich mit diesem Vorsprung (13) im Halter abnehmbar fixiert ist, dass die Wandstärke des Einsatzes (7) zu seinem Boden (9) hin allmählich abnimmt und dieser Boden (9) derart angeordnet ist, dass er auf der Bodenfläche (4) des Halters (2) aufliegt.

2. Einsatz nach Anspruch 1 in Kombination mit einem zugehörigen Halter, dadurch gekennzeichnet, dass der Halter (2) eine rund um einem oberen Bereich seiner Seitenwand (3) verlaufende Vertiefung (15) besitzt, in welche der Vorsprung (15) des Einsatzes (7) zwecks Fixierung des Einsatzes im Halter eingreift.

3. Einsatz nach Anspruch 2 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass die Vertiefung (15) sich von einer Oberkante (14) des Halters (2) zu dessen Bodenteil (4) erstreckt.

4. Einsatz nach Anspruch 2 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass die Vertiefung (15) im Abstand von der Oberkante (14) des Halters angeordnet ist.

5. Einsatz nach Anspruch 4 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass die Vertiefung (15) im Querschnitt gesehen in Richtung auf das Bodenteil (4) des Halters allmählich tiefer wird und in einer im wesentlichen wagerechten am Vorsprung (13) angreifenden Schluter endet.

6. Einsatz nach Anspruch 5 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass der Einsatz (7) Becherform besitzt und dass der Vorsprung (13) ringförmig rund um das steife Oberteil (12) verläuft.

7. Einsatz nach Anspruch 1 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass der Kragen (11) im Abstand oberhalb und radial ausserhalb der Oberkante (14) des Halters verläuft.

8. Einsatz nach Anspruch 7 in Kombination mit einem Halter dafür, dadurch gekennzeichnet, dass der Einsatz (7b) ein nach aussen weisendes Teil zwischen dem Vorsprung (13b) und der Oberkante (10) des Einsatzes besitzt, welches an der Oberkante (14) des Halters angreift und den Kragen abstützt (Fig. 3).

9. Einsatz nach Anspruch 1, dadurch gekennzeichnet, dass der Einsatz (7) in einen anderen Einsatz stapelbar ist und dass der Vorsprung (13) einen ein ineinandergreifen von Krägen (11) aneinander anliegender Einsätze verhindernden Anschlag bildet.

10. Einsatz nach Anspruch 1, dadurch gekennzeichnet, dass der Vorsprung (13) am steifen Oberteil ausgebildet ist.

11. Einsatz nach Anspruch 1, dadurch gekennzeichnet, dass der Kragen (11) und das steife Oberteil (12) einen Winkel von 12° bis 24° miteinander bilden.

12. Einsatz nach Anspruch 1, dadurch gekennzeichnet, dass der Kragen (11) und das steife Oberteil (12) einen Winkel von 16° bis 20° miteinander bilden.

13. Einsatz nach Anspruch 1, dadurch gekennzeichnet, dass der Vorsprung (13) ringförmig rund um das steife Oberteil (12) verläuft und dass der Einsatz (7) aus einem Kunststoff hergestellt ist, bei welchem das steife Oberteil (12) nach Erhitzung schrumpft.

## Revendications

1. Garniture jetable préformée (7) destiné à s'adapter dans un support (2) ayant des parties de fond (4) et de paroi latérale (3) définissant un espace pour recevoir la garniture, ayant une partie supérieure qui est relativement rigide comparée au reste de la garniture (7) et ayant un collier (11) s'étendant vers le bas, ce collier (11) étant relié à la partie supérieure au moyen d'un bord supérieur (10) qui, pendant l'utilisation, est disposé au-dessus de la partie supérieure (14) du support, garniture caractérisé en ce que la garniture (7) est pourvue, au voisinage de son extrémité supérieure, de parties en saillie (13) périphériques, à projection latérale, placées de façon à s'appuyer contre la paroi adjacente du support (2) et disposées de façon fixe afin de maintenir la garniture à l'intérieur du support, malgré les mouvements verticaux vers le haut et aussi horizontaux, que la garniture (7) est maintenue de façon amovible contre l'évacuation du support (2) seulement par la partie en saillie (13), que l'épaisseur de paroi de la garniture (7) décroît graduellement à partir de la portion supérieure vers le fond, qui est adapté à reposer sur le fond (4) du support (2).

2. Garniture selon la revendication 1, en combinaison avec un support, caractérisée en ce que le support (2) comporte une cavité (15) s'étendant autour d'une partie supérieure de la paroi latérale (3) du support afin de coopérer avec la partie en saillie (13) annulaire, et cette partie en saillie annulaire s'engage dans la cavité pour positionner la garniture (7) dans le support.

3. Garniture selon la revendication 2, en combinaison avec un support, caractérisée en ce que la cavité (15) s'étend à partir de la partie supérieure (14) du support jusqu'à la partie de fond (4) du support.

4. Garniture selon la revendication 2, en combinaison avec un support, caractérisée en ce que la cavité (15) est à une certaine distance de la partie supérieure (14) du support.

5. Garniture selon la revendication 4, en combinaison avec un support, caractérisée en ce que la cavité (15) est préformée en section transversale de façon à présenter une profondeur augmentant graduellement dans la direction de la partie de fond (4) du support et se terminer en un épaulement inférieur pratiquement horizontal, destiné à s'enclencher avec la partie annulaire en saillie (13).

6. Garniture selon la revendication 5, en combinaison avec un support, caractérisée en ce que la garniture (7) présente la forme d'une tasse et que la partie annulaire en saillie (13) s'étend de façon annulaire autour de la partie supérieure rigide (12).

7. Garniture selon la revendication 1, en combinaison avec un support, caractérisée en ce que le collier (11) est à une certaine distance, au-

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dessus et radialement vers l'extérieur, de la partie supérieure (14) du support.

8. Garniture selon la revendication 7, en combinaison avec un support, caractérisée en ce que la garniture (7b) présente une partie s'étendant vers l'extérieur entre la partie annulaire en saillie (13b) et le bord supérieur (10) de la garniture afin de s'enclencher avec la partie supérieure (14) du support pour soutenir le collier (figure 3).

9. Garniture selon la revendication 1, caractérisée en ce que la garniture (7) peut être empilée en s'emboîtant dans une autre garniture, et que la partie annulaire en saillie (13) forme une butée pour empêcher le coincement des colliers (11) des garnitures adjacentes dans une pile.

10. Garniture selon la revendication 1, caracté-

térisée en ce que la partie annulaire en saillie (13) est disposée sur la partie supérieure rigide.

11. Garniture selon la revendication 1, caractérisée en ce que le collier (11) et la partie supérieure rigide (12) sont disposés avec une angulation relative comprise entre 12° et 24°.

12. Garniture selon la revendication 1, caractérisée en ce que le collier (11) et la partie supérieure rigide (12) sont disposés avec une angulation relative comprise entre 16° et 20°.

13. Garniture selon la revendication 1, caractérisée en ce que la partie en saillie annulaire (13) s'étend de façon annulaire autour de la partie supérieure rigide, et que la garniture (7) est constituée par une matière plastique dans laquelle la partie supérieure rigide (12) se rétracte après avoir été chauffée.

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Fig.1

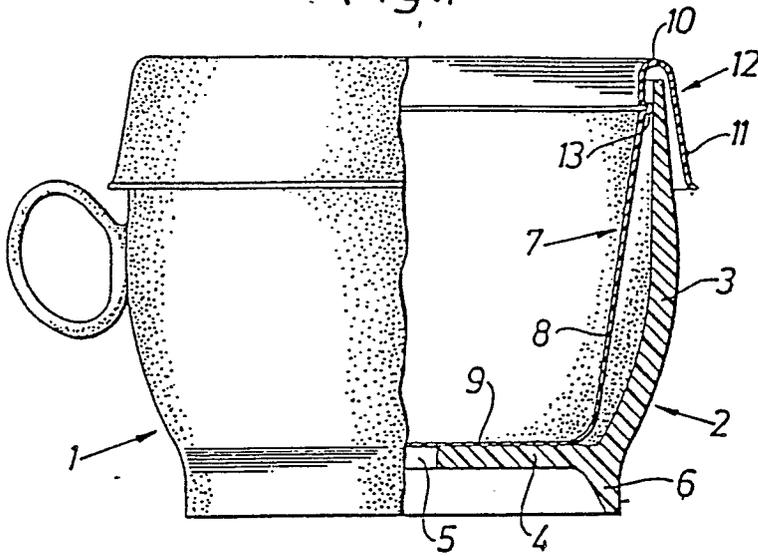


Fig.4

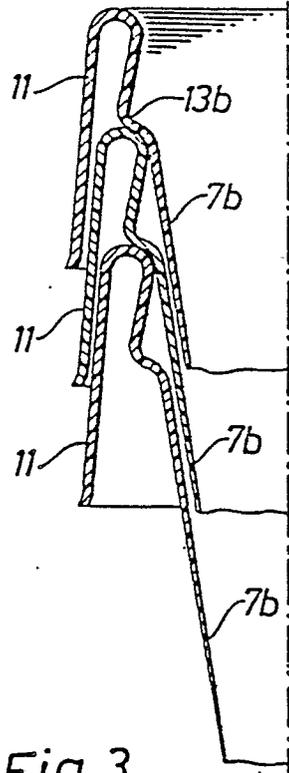


Fig.2

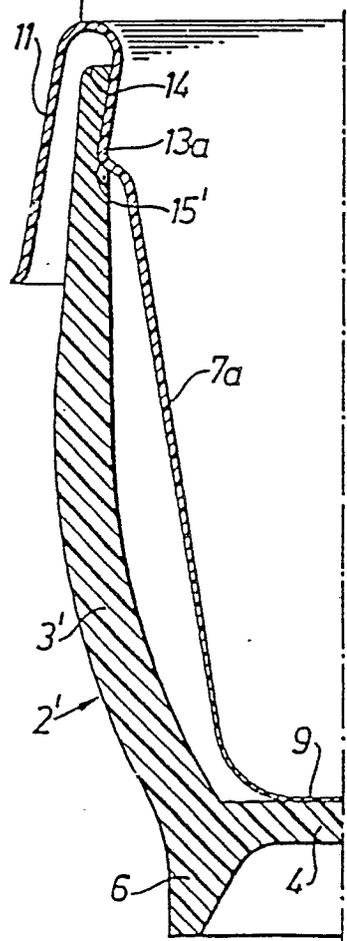


Fig.3

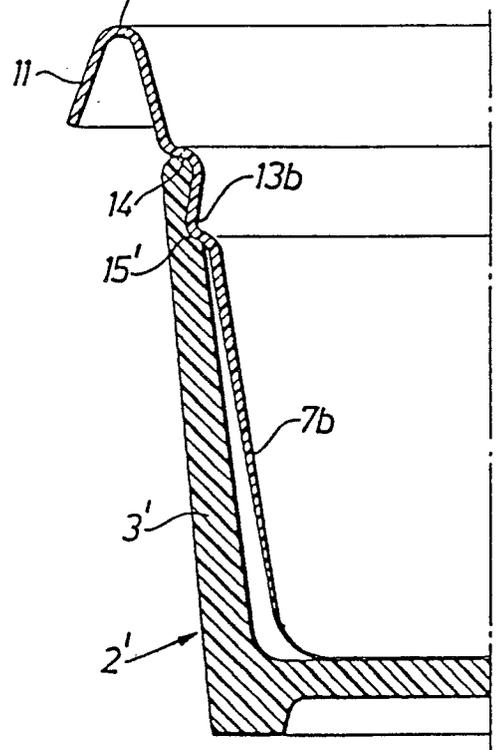


Fig.5

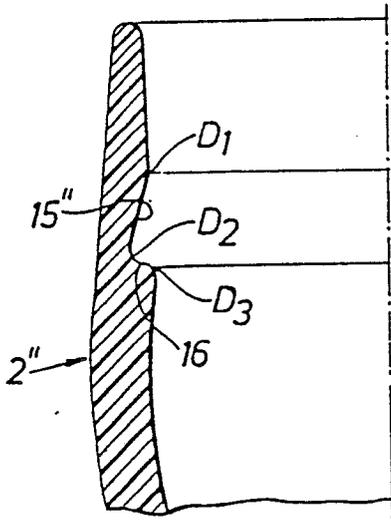


Fig.6

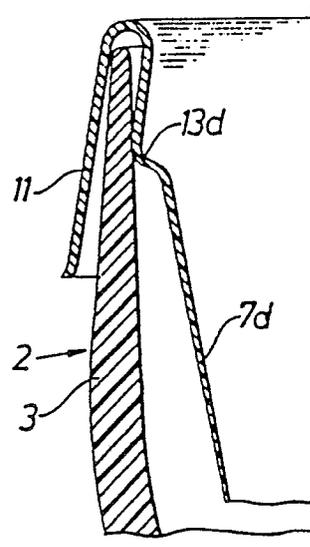


Fig.7

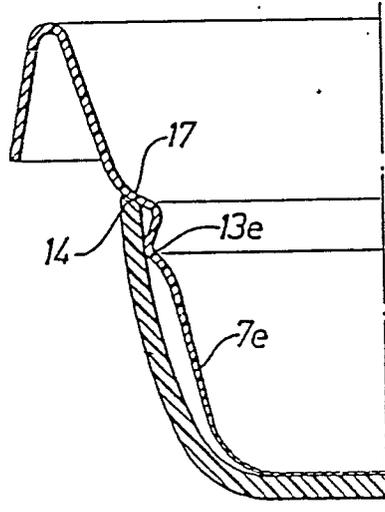


Fig.8

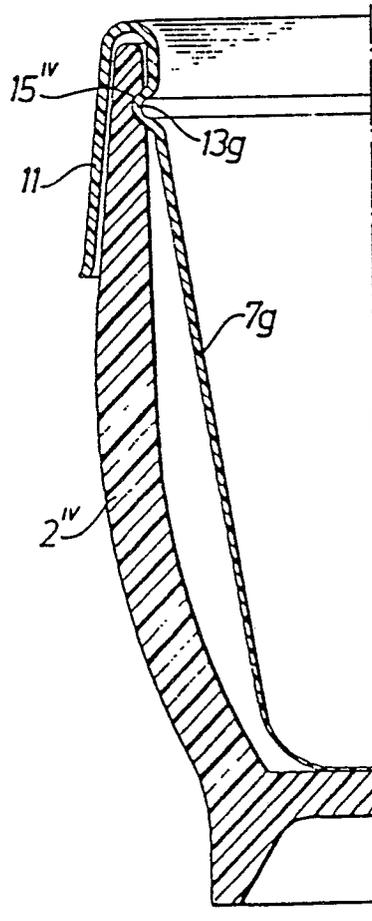


Fig. 9

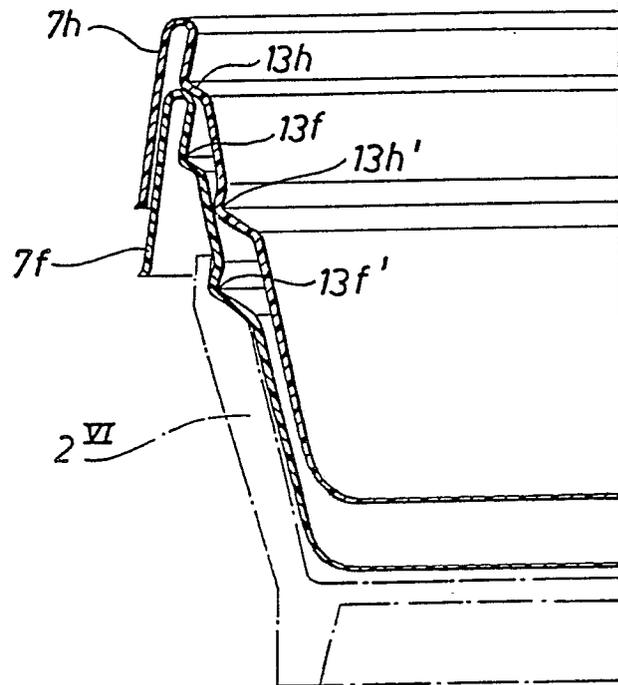


Fig. 10

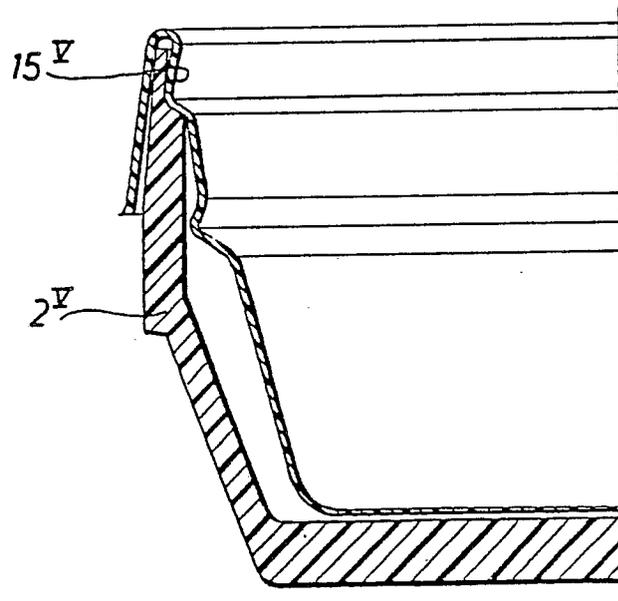


Fig.11

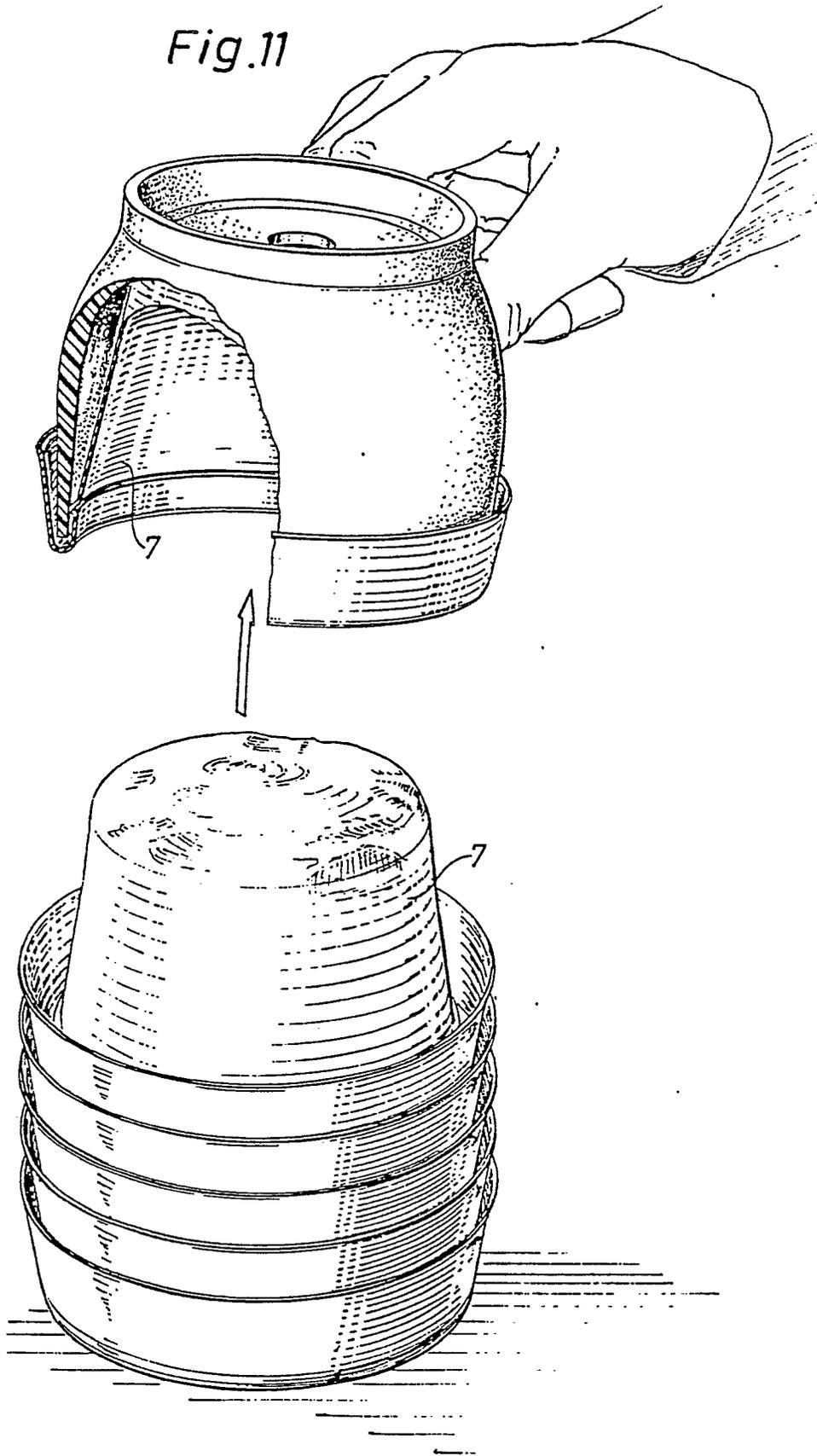


Fig.12

