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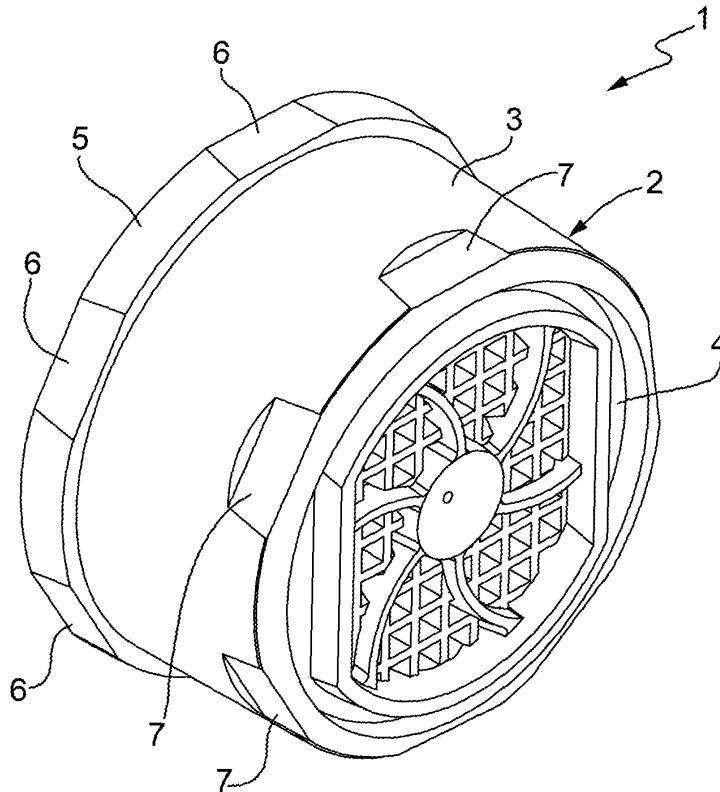
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(54) **Capsule for infusion products**

(57) The capsule for infusion products comprises a cup (2) made of plastic material having a bottom wall (4) and a side wall (3) provided with an upper edge (5). The main characteristic of the present invention consists of the fact that the body defining the cup (2) has, as pre-

ferred, a slightly truncated-cone shape or a cylindrical shape, and is provided with at least a facet (6 and/or 7) made, as preferred, along the perimetral contour of the upper edge (5) of the side wall (3) and/or on the external face of the side wall (3) close to the bottom wall (4).



**FIG.1**

**EP 2 179 943 A1**

## Description

[0001] The present invention relates to a capsule for the containment of infusion products in granular, leaf or powder form such as for example coffee, barley, milk powder, tea, chamomile, etc.

[0002] As is known, the capsules for infusion products currently available on the market comprise a cup made of plastic material closed at the top by a cover made of plastic material or by a film. Inside the cup there is a filter arranged so that it comes into contact with the bottom wall of the cup and the infusion product. In use, the capsule is inserted in a percolation chamber of a beverage extraction machine, where hot water is delivered under pressure onto the cover and reaches the product contained in the capsule through at least one hole already provided in the cover or through at least one hole provided in the cover inside the percolation chamber. The water mixes with the product and flows out of the capsule through holes already provided in the bottom wall of the cup or through holes provided in said bottom wall inside the percolation chamber; the filter being suitable to withhold the powder product. The percolation chamber of a beverage extraction machine is defined by an upper hot water supply element that rests sealingly against the cover of the capsule and by a lower beverage extraction element on which the capsule rests sealingly.

[0003] The capsules described above have a number of drawbacks.

[0004] In particular in the capsules currently available on the market it is not possible to obtain a perfectly watertight seal between the bottom wall and the lower element of the percolation chamber or between the upper edge of the cup and the upper element of the percolation chamber. Moreover, widespread use is now made of beverage extraction machines that are granted on free loan subject to the user making use of capsules marketed by the manufacturer of the machine.

[0005] The purpose of the present invention is to provide a capsule for infusion products that overcomes the drawbacks described above.

[0006] According to the present invention there is provided a capsule for infusion products of the type comprising a cup in plastic material having a bottom wall and a side wall provided with an upper edge, **characterized in that** the body defining said cup has, as preferred, a slightly truncated-cone shape or a cylindrical shape, and is provided with at least one facet made, as preferred, along the perimetral contour of said upper edge of said side wall and/or on the external face of said side wall close to said bottom wall.

[0007] The present invention will now be described with reference to the accompanying drawings, illustrating a preferred embodiment thereof, in which:

figure 1 is a perspective view of a capsule according to the present invention; and

figure 2 is a cross-sectional view of the capsule of

figure 1.

[0008] With reference to figures 1 and 2, designated as a whole by number 1 is a capsule for infusion products comprising a cup 2 defined by a side wall 3 and by a bottom wall 4. The body that defines the cup 2 could have a slightly truncated-cone shape or a cylindrical shape. The side wall 3 has an upper edge 5 which is preferably thicker than the side wall 3. The cup 2 is made, as preferred, of a rigid plastic material or of a thermoformed plastic material suitable for use with food. A cover made either of plastic material or of plastic film and which is not illustrated is fitted to said edge 5. The bottom wall 4 and the cover that is not illustrated may be of the type already provided with holes, or of the type in which the holes form during the percolation process, or of the type provided with weakened areas suitable to tear during the percolation process.

[0009] The main characteristic of the present invention consists of the fact that the body that defines the cup 2 is provided with facets which can be made along the external perimetral contour of the edge 5 indicated by number 6 in the accompanying figures and/or can be made on the external face of the side wall 3 close to the bottom wall 4 and indicated by number 7 in the accompanying figures. Moreover just a single facet 6 could be provided on the external perimetral contour of the edge 5 and a single facet 7 on the external face of the side wall 3 close to the bottom wall 4. In this embodiment there are six facets 6 and six facets 7. Moreover in this embodiment the facets 6 are connected to each other by means of a respective section of the perimetral contour of the edge 5 shaped as an arc of a circle but in a different construction solution the facets 6 could be arranged adjacent to one another, and likewise for the facets 7.

[0010] In use the capsule 1 is inserted in a percolation chamber 11 (illustrated with the dashed line in figure 2) of a beverage extraction machine (not illustrated). Said percolation chamber 11 is defined by an upper hot water supply element 12 that rests sealingly against the edge 5 of the capsule 1 and by a lower beverage extraction element 13 on which the bottom wall 4 of the cup 2 rests sealingly; the capsule 1 being pressed with force between the elements 12 and 13 of the percolation chamber 11. As illustrated by the dashed line in figure 2, the upper element 12 is provided with a semi-annular projection 14 which extends downwards and which is provided with facets 15 on its internal face suitable to cooperate with the identical facets 6 of the edge 5. Moreover the lower element 13 is provided with a semi-annular projection 16 which extends upwards and which is provided with facets 17 on its internal face suitable to cooperate with the facets 7 of the side wall 3 of the cup 2. Substantially both the upper element 12 and the lower element 13 of the percolation chamber 11 are provided with guides for inserting the capsule 1 into the chamber 11 so that it is perfectly centred and the cooperation between the facets 6 and 15 and between the facets 7 and 17 only allows a capsule

having the same form as the capsule 1 to be introduced into the chamber 11, and always perfectly centred. Moreover the cooperation between the facets 6 and 15 and between the facets 7 and 17 makes it possible to achieve a correct and effective watertight seal between the cup 2 and the elements 12, 13 of the percolation chamber 11.

[0011] Hot water is delivered under pressure into the cup 2 through the cover that is not illustrated. The hot water comes into contact with the product in the cup 2 and flows out of this through holes that are not illustrated into an underlying vessel that is not illustrated.

[0012] The advantages of the present invention are apparent from the above description.

[0013] In particular, the capsule 1 is provided with a cup 2 shaped so as to determine a correct and effective watertight seal between the cup 2 and the elements 12 and 13 of the percolation chamber 11. Moreover, as is apparent from the above description, the cooperation between the facets 6 and 15 and between the facets 7 and 17 increases the mechanical strength of the walls 3 and 4 which are subject to the pressure and to the temperature of the hot water and to the pressure exerted on the cup 2 by the elements 12 and 13 of the percolation chamber 11. It is also important to note that thanks to the cooperation between the facets 6 and 15 and between the facets 7 and 17 the user is certain that the cup 2 will be guided and centred perfectly in the percolation chamber 11. Lastly the manufacturers of beverage extraction machines can ensure that only the capsule 1 produced with an infusion product made to specific quality standards can be used in their machines. Besides assuring the consumer of the quality of the product, this also encourages companies to invest in promotion by offering the use of the machine on free loan.

[0014] Lastly, it is clear that modifications and variations may be made to the capsule 1 described and illustrated herein without departing from the scope of the present invention, as set forth in the appended claims.

## Claims

1. Capsule for infusion products of the type comprising a cup (2) in plastic material having a bottom wall (4) and a side wall (3) provided with an upper edge (5), **characterized in that** the body defining said cup (2) has, as preferred, a slightly truncated-cone shape or a cylindrical shape, and is provided with at least a facet (6 and/or 7) made, as preferred, along the perimetral contour of said upper edge (5) of said side wall (3) and/or on the external face of said side wall (3) close to said bottom wall (4).
2. Capsule according to Claim 1, **characterized in that** at least two of said facets (6) are provided along the perimetral contour of said upper edge (5) of said side wall (3).

3. Capsule according to Claim 2, **characterized in that** said upper edge (5) is thicker than said side wall (3).
4. Capsule according to at least one of the preceding Claims, **characterized in that** at least two of said facets (7) are provided on the external face of said side wall (3) close to said bottom wall (4).
5. Capsule according to Claim 2 and/or Claim 4, **characterized in that** there are six facets (6 and/or 7).
6. Capsule according to Claim 2 and/or Claim 4 and/or Claim 5, **characterized in that** said facets (6 and/or 7) are adjacent to each other.
7. Capsule according to Claim 2 and/or Claim 4 and/or Claim 5, **characterized in that** said facets (6 and/or 7) are connected to each other by means of a respective section shaped as an arc of a circle.
8. Capsule according to one of the preceding Claims, **characterized in that** said cup (2) is made of a rigid plastic material.
9. Capsule according to one of Claims 1-7, **characterized in that** said cup (2) is made of a thermoformed plastic material.

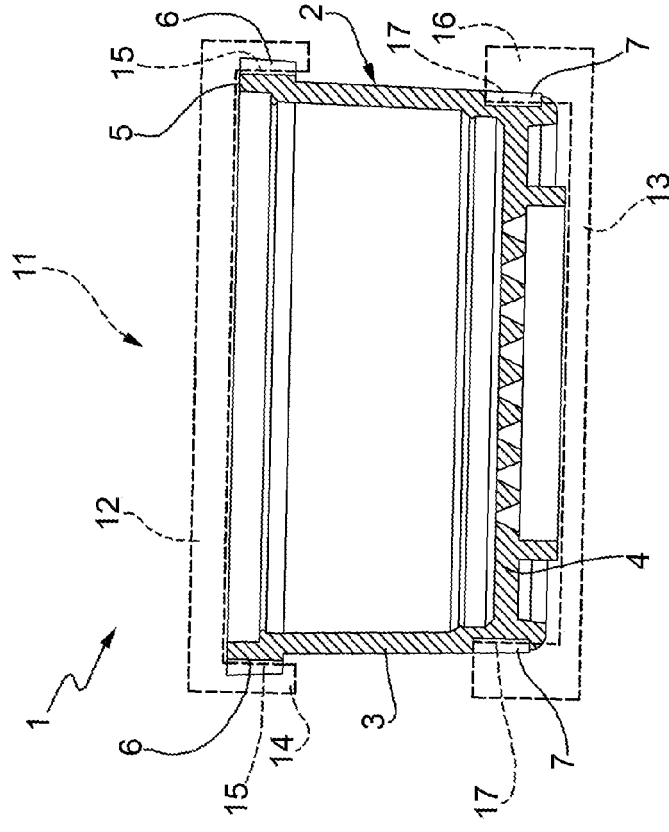


FIG. 2

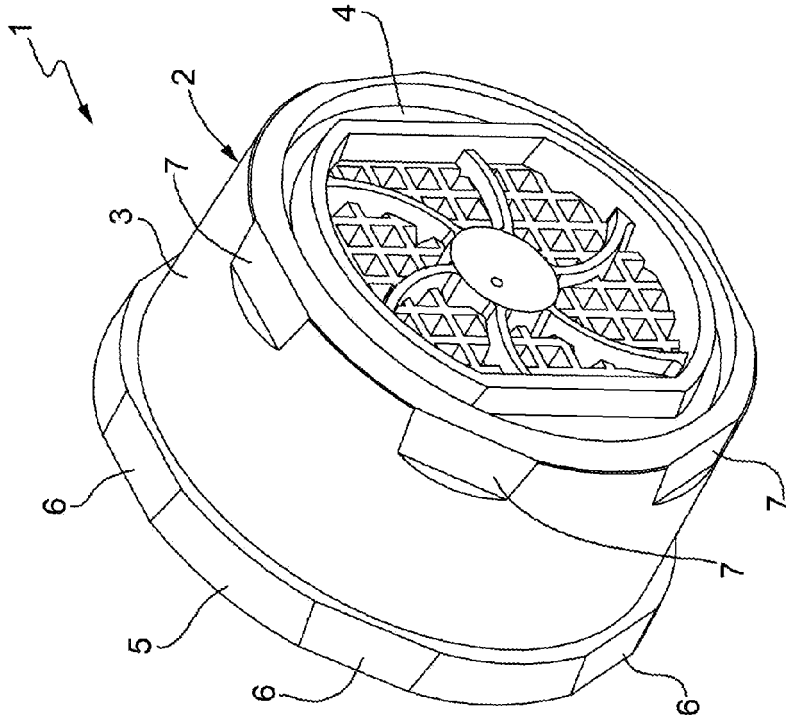


FIG. 1



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Application Number  
EP 09 17 4262

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
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Place of search		Date of completion of the search	Examiner
The Hague		27 January 2010	Fournier, Jacques
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X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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