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Remarks:
Amended claims in accordance with Rule 86 (2) EPC.

(54) Pitcher for emulsifying milk

(57) The bottom wall (3, 30) of the pitcher is sloping with respect to an horizontal plane by an angle α ranging from 5° to 30° , the shape is of a truncated cone with the side walls tapered towards the top by a taper 1/K ranging from 0,20 to 0,40 and the inner edges between the bottom wall and the side walls are sensibly round (Fig. 1).

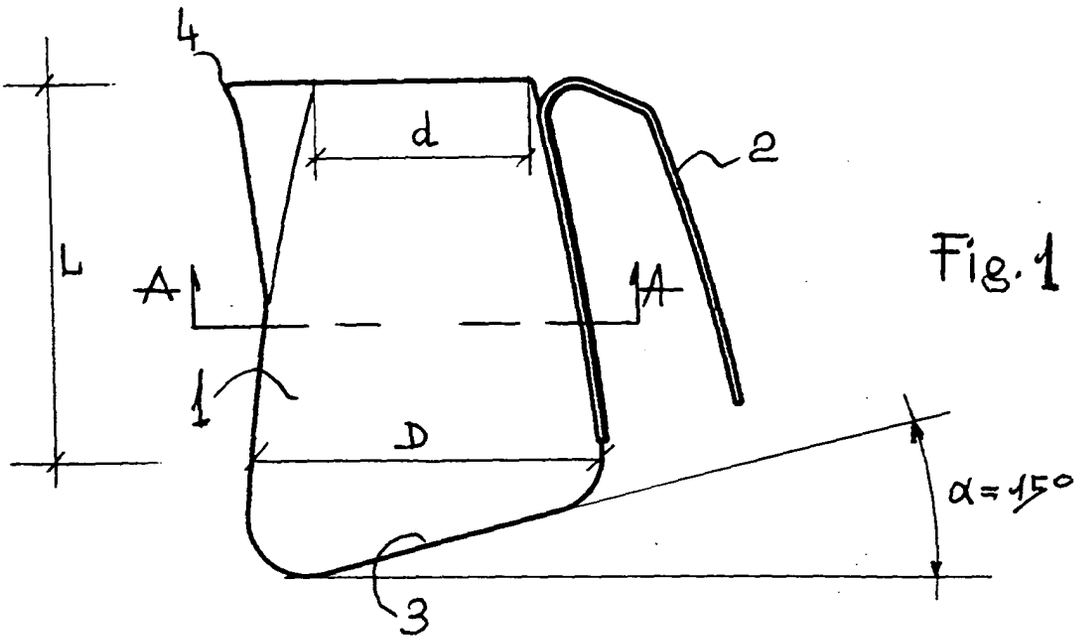

Fig. 1

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Description

[0001] The present invention refers to a pitcher for emulsifying milk, in particular for emulsifying that portion of milk that an operator in a bar, cafeteria or simply at home may be willing to emulsify for preparing a cappuccino. As known, the operator uses a jet of water steam for emulsifying the milk and getting the desired cream that then he pours on the coffee contained in a cup.

[0002] Although the term -cappuccino- is known nearly everywhere, it does not appaer that it has an English or other non Italian language equivalent. So, it is proper to make clear that cappuccino is a beverage made of express coffee, milk and milk cream, where the latter is just got by the above referenced operation.

[0003] An operator uses currently a conventional pitcher for operating ; he treats the milk in the pitcher by a water steam jet ejected from the nozzle provided on purpose in a conventional express coffee maker, with the nozzle plunged into the upper layer of the milk poured into the pitcher, and gives the pitcher such movements as to cause a rotation of the milk, along the pitcher walls, which helps the production of a homogeneous milk cream that he then pours on the coffee that has been previously served into a cappuccino cup. This operation should lead to a good result if the operator is a skilled one, but also in this case the operation often produces a cream on whose surface there are air macrobubbles. These macrobubbles prevent from the desired integration of part of the cream into the coffee and also cause on the cream surface a part of cream not so agreable because such a part of cream is not homogeeneous, silky and enduring as desired.

[0004] The invented pitcher obviates said drawbacks. If one looks at the pitcher with its main longitudinal axis in vertical position, the pitcher shows the bottom wall sloping with respect to a horizontal plane, a shape of a truncated cone and rounded inner edges at the bottom.

[0005] If one refers to this pitcher lying on a horizontal plane, on a table for instance, then the pitcher appears as sloping with respect to a vertical line.

[0006] When an operator holds this pitcher in his hand naturally, with its mouth substantially horizontal, then the bottom wall of the pitcher results sloping with respect to a horizontal plane. Experiments, along with tests based on the physical principles relevant to the motion of fluids in turbulent or viscous state gave evidence that said sloping, the truncated cone shape and the rounded edges at the bottom lead the milk subjected to said operation to such a physical condition : the production is reduced of those microvortexes that hinder the homogeneous rotation of the milk in the pitcher, i.e. that rotation that produces a desired milk cream thanks to formation of air microbubbles.

[0007] Said effect is achieved by a pitcher wherein the bottom wall is sloping with respect to the horizontal plane by an angle α ranging from 5° to 30° and the shape is tapered towards the top by a taper 1/K ranging from 0,20 to 0,40. Sloping α may be of any orientation.

[0008] In said truncated cone shape the inner edges between the bottom wall and the side walls are sensibly rounded and the pitcher side walls may be rectilinear, bent towards inside or outside.

[0009] The main advantage of this pitcher is to provide for an axcellent cappuccino even if the operator is not a skilled one.

[0010] The invention will now be described by way of example and with reference to the accompanying drawings in which :

Figg. 1 and 2 are lateral views,
Fig. 3 is a front view,
Fig. 4 is a first cross section according to A - A of fig. 1,
Fig. 5 is a second cross section according to A - A of fig. 1.

[0011] Fig. 1 shows a pitcher 1 in the shape of truncated cone as if the handle 2 is held by an operator so that the mouth appears in horizontal position. The sloping of the bottom wall 3 is of an angle α = 15° and the taper of the side walls is 1/K = (D-d)/L = 0.30 (D, d, L being indicated in the figure); it is shown that the side walls are slightly bent towards the ouside, as they might be bent towards inside, and the inner edges between the bottom wall and the side walls are sensibly round (the curvature radius difining such rounding depends on the size of the pitcher). From the figure the sloping α of the bottom wall appears directed from the spout 4 to the handle 2.

[0012] Fig. 2 shows pitcher 1 put on a table T.

[0013] Fig. 3 shows a pitcher 5 wherein the bottom wall 30 is sloping by an angle α = 13° and is turned by 90° with respect to the sloping illustrated in figures 1 and 2.

[0014] Fig. 4 shows the circular horizontal cross section of pitcher 1 again bearing the handle 2 and the spout 4.

[0015] Fig. 5 shows the oval horizontal cross section of a pitcher 1a again bearing the handle 2 and the spout 4. The handle 2 and the spout 4 may be located at any points of the perimeter, provided the points are opposite, as it is preferably but not absolutely necessary.

Claims

1. Pitcher (1, 5) of truncated cone shape for emulsifying milk to be used for preparing a cappuccino provided with a handle and a spout **characterized in that** the bottom wall (3, 30) is sloping with respect to an horizontal plane by an angle α ranging from 5° to 30° and the shape is of a truncated cone with the side walls tapered towards the top by a taper 1/K ranging from 0,20 to 0,40.

2. Pitcher (1, 5) according to claim 1 **characterized in that** the inner edges between the bottom wall and the side walls are sensibly round.

3. Pitcher (1, 5) according to claims 1 and **characterized in that** has circular horizontal cross section.

4. Pitcher (1, 1a, 5) according to claims1 and 2 **characterized in that** has oval horizontal cross section.

Amended claims in accordance with Rule 86(2) EPC.

3. Pitcher (1, 5) of truncated cone shape for emulsifying milk to be used for preparing a cappuccino provided with a handle (2) and a spout (4) at the upper rim **characterized in that** the bottom wall (3, 30) is sloping with respect to an horizontal plane by an angle α ranging from 5° to 30° and the shape is of a truncated cone with the side walls tapered towards the top by a taper 1/K ranging from 0,20 to 0,40.

4. Pitcher (1, 5) according to claim 1 **characterized in that** the inner edges between the bottom wall and the side walls are sensibly round.

4. Pitcher (1, 5) according to claims 1 and **characterized in that** has circular horizontal cross section.

5. Pitcher (1, 1a, 5) according to claims1 and 2 **characterized in that** has oval horizontal cross section.

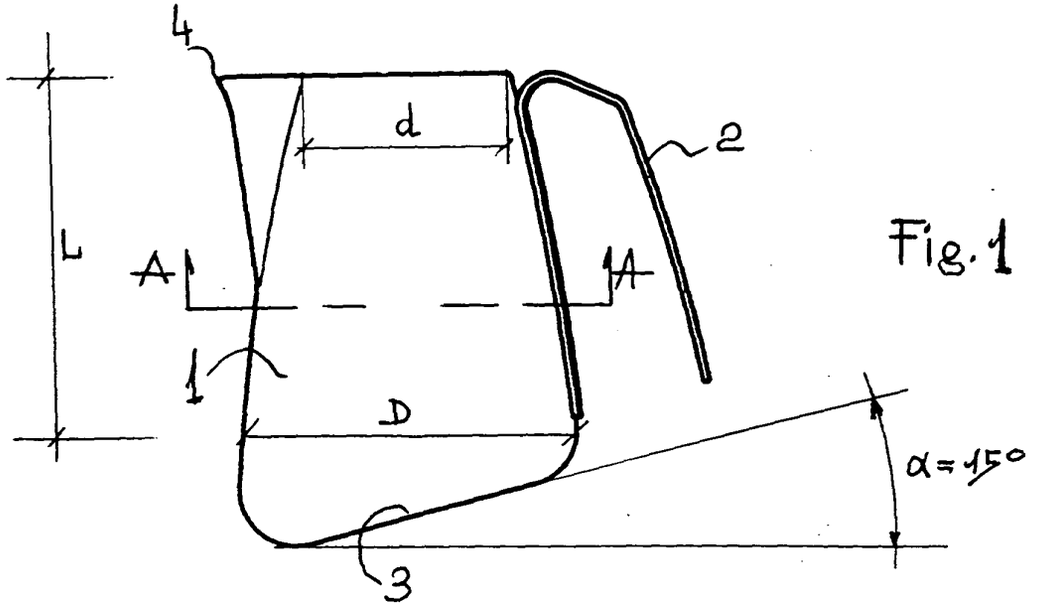

Fig. 1

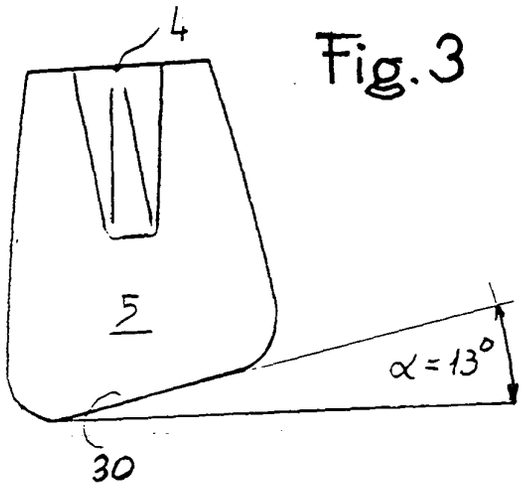

Fig. 3

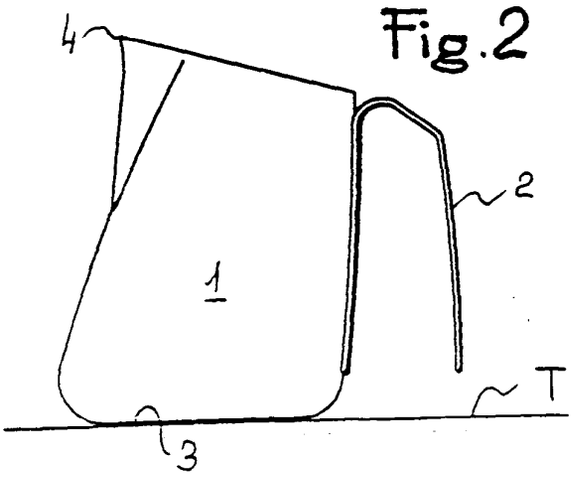

Fig. 2

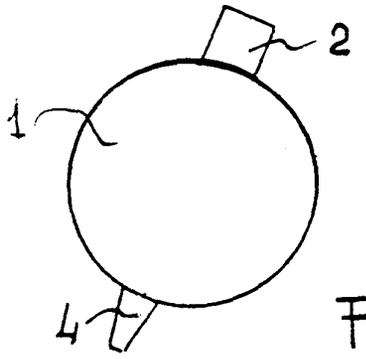

Fig. 4

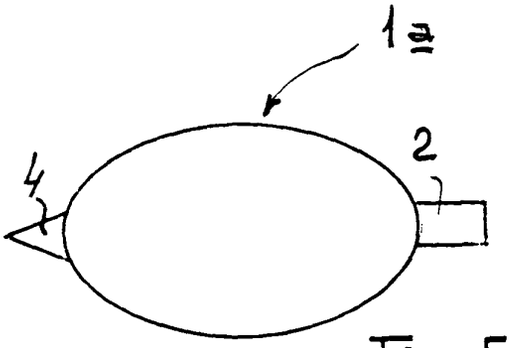

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 03 42 5792

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A47G
A47J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 June 2004	Lehe, J

CATEGORY OF CITED DOCUMENTS

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03-06-2004

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