Oct. 16, 1945. P. SCHLUMBOHM 2,387,092

WHIRLPOOL FLASK

Filed Nov. 17, 1942

Fig. 1.

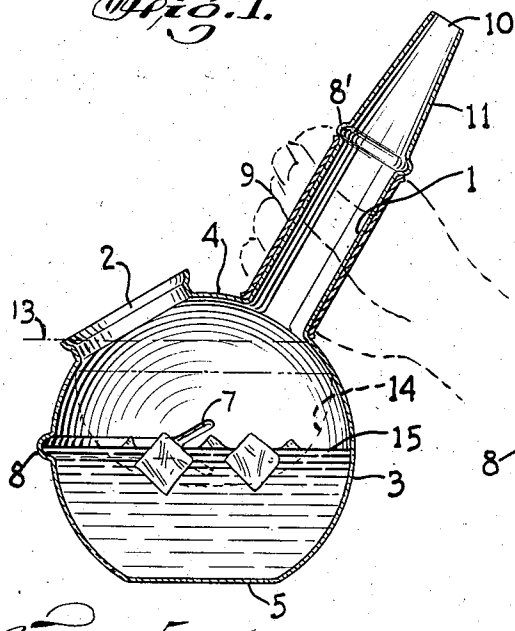


Fig. 2.

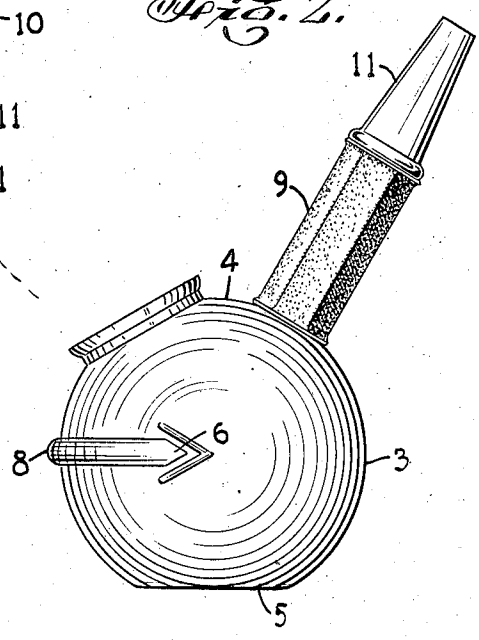


Fig. 5.

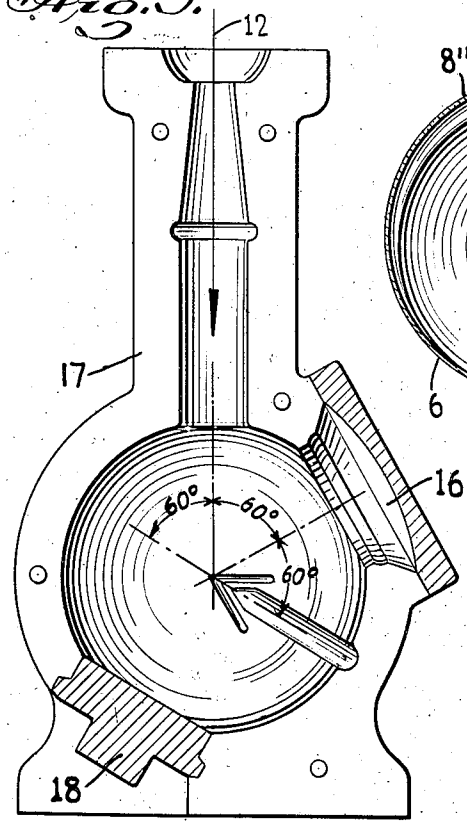


Fig. 4.

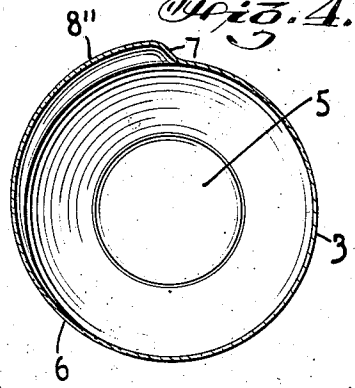
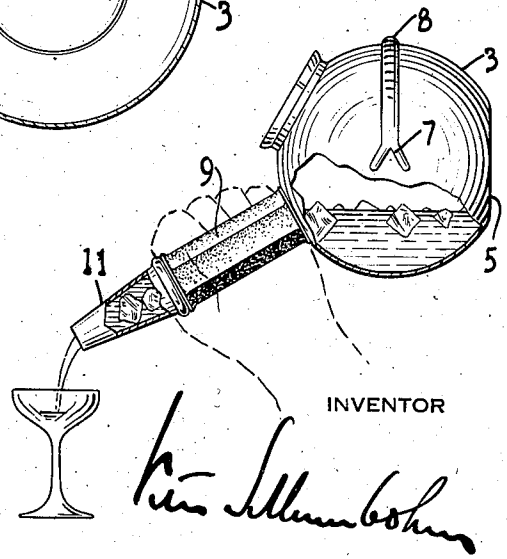


Fig. 3.



INVENTOR

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WHIRLPOOL FLASK

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6 Claims. (Cl. 65—31)

The invention refers to a device for holding and pouring liquids, and more specifically for mixing iced drinks and decanting and pouring them while retaining the ice-cubes. The invention is hard to classify among the numerous groups of devices designed for the same purposes, such as "ice-pitchers," "cocktail-shaker," "decanters" and others; and I suggest to name this new type of device a bowl-flask, as it is a kind of a cross-breeding between a bowl and a flask, combining characteristic features of both. This will be easier understood by reading the accompanying drawing, Fig. 1–Fig. 5.

Fig. 1 shows a bowl-flask in vertical section;

Fig. 2 illustrates the bowl-flask of Fig. 1 in view.

Fig. 3 shows the bowl-flask of Fig. 1 and Fig. 2, partly in view, partly in section, in pouring position for filling a glass, indicating the upper-grip of the hand, diagrammatically, in contrast to the undergrip of the hand as indicated in Fig. 1.

Fig. 4 shows a horizontal section through a bowl-flask varying in a detail from the bowl-flask shown in the Fig. 1–Fig. 3.

Fig. 5 shows a "hot-iron mould" designed for blowing a bowl-flask in glass, showing one half of the mould in view and two elements in vertical section.

The new bowl-flask is of utmost simplicity and is a one-piece job. In reviewing the above mentioned groups of pitchers, decanters, cocktail-shakers and similar devices, one will always find as object of the invention: to provide one wide opening for introducing ice-cubes, to provide a strainer to retain the ice-cubes when pouring and finally to provide safeguards against spilling during the mixing operation. With the same objects in mind, I tried to avoid not only the assembling of several parts—which are hard to clean, or get lost or broken—and joints—which some day will leak—but I tried especially to avoid the use of critical materials like metal—for the walls, plastics—for handle, lids or strainer, and rubber for gaskets at the joints. I felt, that in making a glass-mixer one should give up the method of forcing the ice in a head on direction against the wall. I recognized the value of a what may be called whirlpool-mixing method for a mixer built from glass, and I specifically recognized the value of this method for mixing liquid in the presence of ice-cubes: Due to the greater centrifugal momentum the liquid will form the outer part of the vortex and will serve as a cushion between the ice and the walls of the mixer. In any case, ice hitting the wall will hit tangentially. As prior art, a half-successful attempt had been made by others by "swirling" a drink in a brandy-glass, the edge of which had been dented with an "ice-lip" for retaining the ice in pouring. The limitations of such a "swirl-glass" and the "swirling method" are obvious: The volume is limited to a glassfull; the straining and pouring are very poor; and fear of spilling dictates a slow, reluctant movement.

The bowl-flask of my invention, which in its special application for drink-mixing may also be called a whirlpool-flask, allows a mixing action as vigorous as the famous kicking of the cocktail-shaker. Furthermore, greater quantities of drinks can be handled safely in a whirlpool-flask than in the old cocktail-shaker, even if glass is used as material for the walls of the whirlpool-flask.

As illustrated in the drawing, the bowl-flask comprises a body 3 with two tubulated openings 1 and 2.

The two openings differ in diameter and in length of tubulation. The smaller opening 1 comprises a long tube, adapted for three functions: to serve as handle, as pouring spout and as ice-cube strainer. The other opening, with the wider diameter and shorter tubulation also serves three functions: it allows introduction of ice-cubes, in addition to introduction of the liquid; it allows pouring of liquid mixed with ice-cubes or mixed with pulp from oranges, pine-apple, strawberries or the like; and it allows passage of a cleaning hand. For this latter purpose, the tubulation of opening 2 is held short. On the other hand, even a short tubulation is far superior to just a hole in the wall of body 3, as only with such tubulated opening the pouring function can be performed.

As shown in the drawing, these two tubulated openings are arranged in the upper part of the body 3 of the bowl-flask. I found that they serve their purposes best when their axes form an angle of about 60°, the axes running radially from the center of a sphere-shaped body 3. There are three reasons for choosing this angle of about 60°: first, to leave a sufficient shield 4 between the two openings 1 and 2, so that in the pouring position of Fig. 3 no liquid is spilled by overflowing through opening 2; second, to have the "spilling level" during the mixing action sufficiently high above the center of the flask, leaving the remaining walls of the body 3 sufficiently intact to form overhanging walls. The spilling-level is the level of the lowest points of openings 1 and 2, indicated in Fig. 1 by the dotted

level line 13; the vortex level is indicated by dotted line 14. Third, to create a working angle convenient for the wrist when gripping the spout-handle 1 in position of Fig. 1 as well as in position of Fig. 3.

While the bowl-flask embodies features of a bowl—with its wide opening 2, its overhanging walls and its flat bottom 5—and while it also embodies features of a flask—with its long neck 1, its spherical body 3 and the taper 11 near the mouth 10, there is in the combination of such familiar features more than meets the eye.

The design of the body 3 of the bowl flask and the upwardly extending tubular handle spout 1 permits the device to be given a stroke corresponding to the stroke of a conical pendulum. By gripping the handle 1 as indicated in dotted lines in Fig. 1 with undergrip by the right hand, a convenient counterclockwise turning of the wrist will result in circular pendulum movements of the bowl-flask 3, and this will cause the liquid 15 to form a vortex 14. The mixing effect of such a whirlpool may be increased by eddying currents created in a bulge-groove 8 in the wall of body 3. To facilitate an intelligent use of the whirlpool-flask an arrow with head 6 and tail 7 indicates the sense of the counterclockwise movement, the filling level and the working horizon. In the example of the drawing the arrow is formed by the groove 8. This groove, in a variation shown in Fig. 4, may be of uneven depth, being deeper at the arrow's tail 7, where the liquid enters, than at the arrow's head 6, for the purpose of creating eddying currents in the groove. The groove may also extend around the whole circumference of body 3, to create a stabilizing effect.

In the example shown, the bottom 5 is designed parallel to the plane of the spilling level 13 and to the plane of the working horizon 8. This means that there is an angle of 60° between the plane of bottom 5 and the axis of the handle-spout 1. This "bottom-angle" is an optimum, for several reasons: First, the bottom wall is towards the vortex hydrodynamically neutral and does not baffle; second, it places on a table the bowl-flask in the filling position, with groove 8 serving as level line; third, it allows one to pick up the whirlpool-flask from the table in its operating position, as also shown in Fig. 1; fourth, it allows one, conveniently for the wrist—to set down the bowl-flask from the pouring position, illustrated in Fig. 3, back upon the table; fifth, the bowl-flask does not topple over by the weight of the long handle-spout 1. However, other bottom-angles are feasible, for instance an angle of about 30° between the plane of the bottom 5 and the axis of the handle-spout 1. This latter arrangement will place the axis of opening 2 vertically over the bottom 5, which is convenient for supporting a strainer or the like by the tubulated opening 2 during the pouring in of the liquid.

According to the invention, the handle-spout 1 is designed to facilitate gripping: First, by providing a bulge 8', so that the hand may not slip off, when holding the bowl as a pendulum under the influence of the centrifugal momentum of the liquid; second, by providing an unround profile, for instance the hexagonal profile as shown in Fig. 1–Fig. 3 to avoid side-slip, which would bring opening 2 below the optimal spill-level 13; third, by providing a heat-insulating wall-layer 9 for handling very cold or very hot drinks.

According to the invention, the handle-spout 1 is furthermore designed to prevent passage of ice-cubes in pouring the drink. I found it advantageous to taper off the spout between the slip-bulge 8' and mouth 10. Partly melted ice-cubes of medium size may then be entrained by the poured liquid into the handle-spout 1 to form there a column of ice particles, which cools the leaving liquid flowing over said column.

To give an example of a very practical whirlpool-flask, which I have built, I supplement the drawing by giving the following dimensions: diameter of body 3: 6¾'' outside diameter; wide tubulated opening 2: 2¾'' inside diameter; handle-spout 1: 1¾'' outside diameter, tapering off to ⅝'' inside diameter, with a total length of 7½'', allowing 4'' for the hexagonal part between body and bulge; wall thickness: about ⅛''.

A whirlpool-flask of such dimensions allows easy handling of 1 quart of cocktails.

To blow this device as a one-piece job, a "hot-iron mould" as shown in Fig. 5 is used. The arrow 12 indicates the axis of the blowpipe and the downcoming mass of glass. It will be now evident that the spherical shape of the body 3 is optimal for two reasons: First, while in operating position of Fig. 1 the device must have its largest diameter in the plane of the working horizon 8, 15. Second, while blowing the glass, this spherical design means that the mass of the walls are substantially concentric with reference to the axis of the blowpipe handle, thus assuring an even distribution of the hot glass.

In the drawing, 17 represents the one half of the mould; 18 is an inserted bottom plate and 16 an inserted "blow-out" cover.

Having now described the nature of my invention and the manner in which it may be performed, I claim:

1. A flask having a flask body of substantially spherical shape and comprising two tubulations of different length and different diameter, the tubulation of the larger diameter being of shorter length, said two tubulations being close to each other at their base in the wall of said substantially spherical body, the geometric axis of each tube passing substantially through the center of said substantially spherical body, the axes forming an angle of approximately 60°, said substantial spherical body having a flat bottom, the plane of said flat bottom forming an angle of approximately 60° with each of the two geometrical axes of the tubulations.

2. The structure recited in claim 1, said spherical body having a circumferential ridge formed on its surface in a plane making an angle of approximately 60° with each of said two geometrical axes which plane is parallel to the plane of the flat bottom of said substantially spherical body.

3. A flask having a flask body of substantially spherical shape and comprising two tubulations of different length and different diameter, the tubulation of the larger diameter being of shorter length, said two tubulations being close to each other at their base in the wall of said substantially spherical body, the tubulation of greater length and smaller diameter being adapted to serve as a handle, at least a portion of the surface of said tubulation of greater length having a non-circular cross section and an outer surface formed with ridges running parallel to the geometrical axis thereof.

4. A flask having a flask body of substantially spherical shape and comprising two tubulations of different length and different diameter, the tubulation of the larger diameter being of shorter

length, said two tubulations being close to each other at their base in the wall of said substantially spherical body, the tubulation of greater length and smaller diameter having a portion adapted to serve as a handle, said tubulation of greater length having a portion of a cross section greater than the portion adapted to be gripped by the hand of the user at a distance at least a hand's width from the base of said tubulation of greater length in order to prevent the hand of the user from slipping off the tubulation of greater length in a direction toward the end thereof.

5. A flask having a flask body of substantially spherical shape and comprising two tubulations of different length and different diameter, the tubulation of the larger diameter being of shorter length, said two tubulations being close to each other at their base in the wall of said substantially spherical body, the tubulation of greater length and smaller diameter being adapted to serve as a strainer for large and medium size ice pieces when the iced drink is poured through said tubulation, said tubulation of greater length comprising a portion having a polygonal cross section.

6. The structure recited in claim 5, the end of said tubulation of greater length having a relatively restricted outlet.

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