March 29, 1955 E. C. NEUMAN 2,705,095

POURING VESSEL

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Fig. 1.

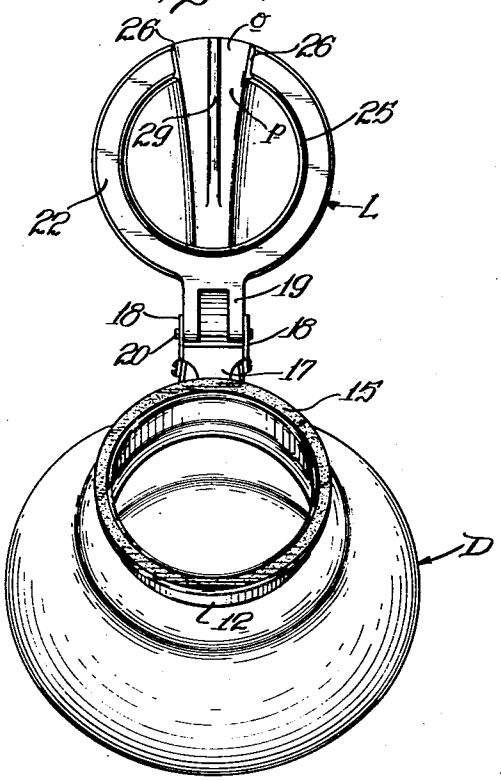


Fig. 3.

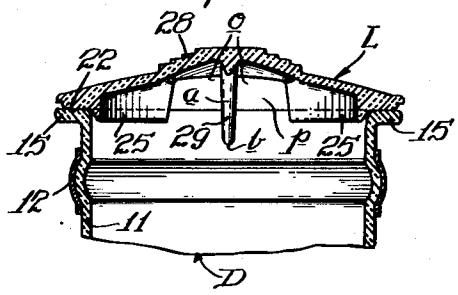
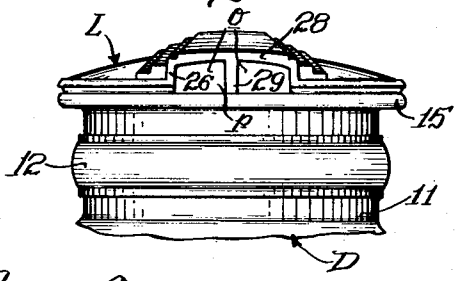


Fig. 4.



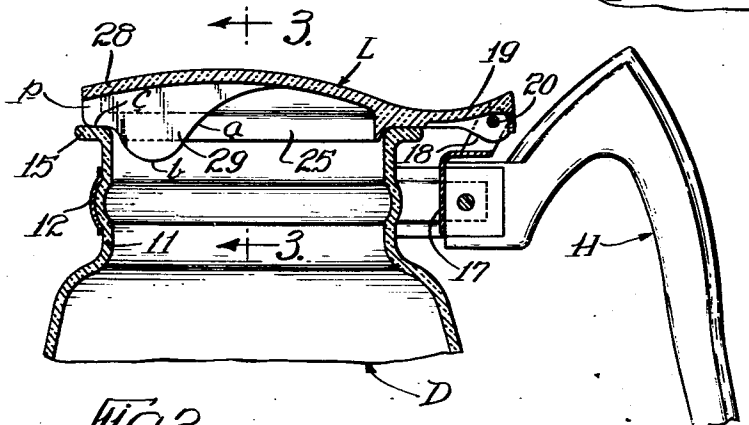


Fig. 2.

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Fig. 5.

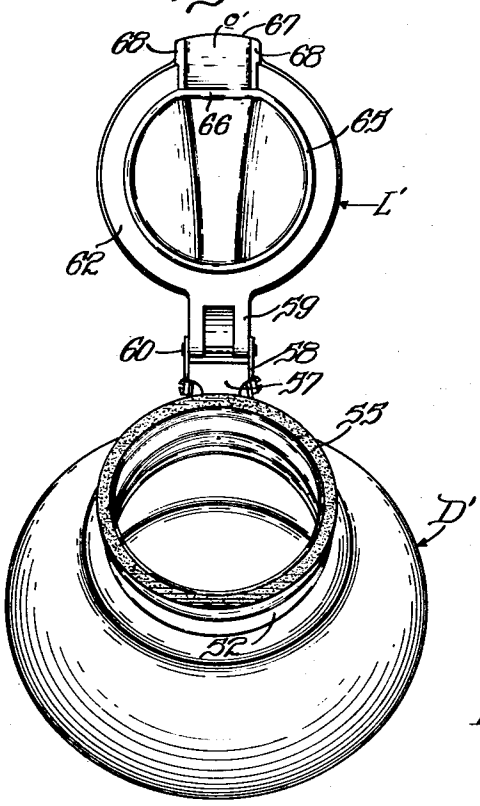


Fig. 7.

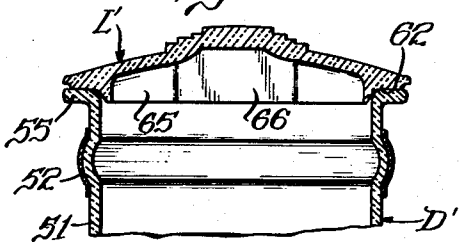


Fig. 8.

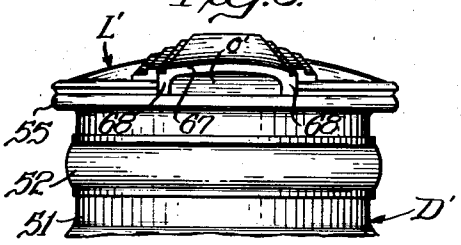


Fig. 9.

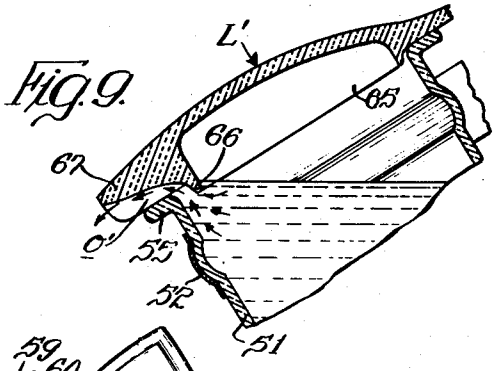
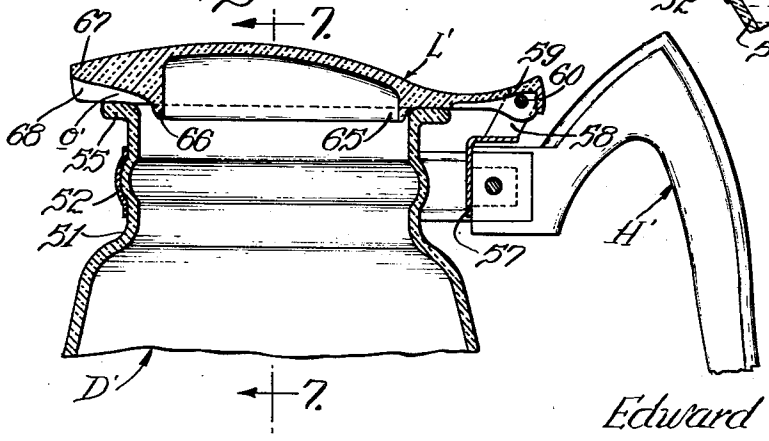


Fig. 6.



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POURING VESSEL

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Application March 10, 1950, Serial No. 148,891

6 Claims. (Cl. 222—478)

This invention which relates generally to vessels from which light viscosity liquids, such as water, aqueous beverages, etc., are to be poured, is concerned primarily with means for control of the liquid in its flowing movement out of the mouth of the vessel and for preventing after-drip therefrom. The kinds of vessels to which my invention is applicable are many—pitchers, bowls, and decanters, just to mention a few. In the ensuing description the term "decanter" will be used as a designation for all such vessels.

More particularly the control means of this invention is carried by a lid which overlies the decanter mouth which is uniplanar in that the top face of its lip is continuous and unbroken throughout its periphery. Furthermore, in many such decanters the mouth is relatively wide, its circular lip at the top being described by a large radius which assures a uniform curvature at every point. Such a decanter is commonly produced at the present time for the lower bowl of a vacuum coffee maker according to the Cory Patent No. 2,359,405 of October 3, 1944. A distinguishing characteristic of such a lower bowl is that it admits of no pouring spout being formed at its top, so that, when tilted to permit out-flow of coffee therefrom, there is little or no control over the moving fluid therefrom and no prevention of after-drip at the conclusion of each such pouring operation.

The control means utilized for a decanter of this general description requires no modification of or addition to the decanter itself. Instead, it is carried by the lid which is commonly associated with and mounted upon the decanter so as to provide normally a closure for its wide open mouth. The control means depends from the under side of the lid which may remain closed during each pouring operation, the control means then lying in the path of the out-flowing liquid so as to act thereupon in the special manner hereinafter set forth in detail.

In the accompanying drawings certain preferred embodiments of this invention are illustrated in the manner following:

Figure 1 is a perspective view of a decanter having a wide mouth with uniplanar lip, the associated lid being raised to open position to exhibit the control means upon its under face;

Fig. 2 is a fragmentary vertical section showing the lid seated over the mouth of the decanter in its closed operative position thereupon;

Fig. 3 is a detail in section, taken on line 3—3 of Fig. 2;

Fig. 4 is an elevational detail showing the side of the lid, when in closed position over the decanter mouth, through which the poured liquid emerges;

Fig. 5 is a perspective view of a decanter having a wide mouth with uniplanar lip, the associated lid, which is modified from that of Figs. 1–4, being raised to open position to exhibit the control means upon its under face;

Fig. 6 is a fragmentary vertical section showing the lid seated upon the mouth of the decanter in its closed position thereupon;

Fig. 7 is a detail in section, taken on line 7—7 of Fig. 6;

Fig. 8 is an elevational detail showing the side of the lid, when in closed position over the decanter mouth, through which the poured liquid emerges; and

Fig. 9 which is a view similar to Fig. 6, shows the decanter tilted to the point of permitting an outflow of liquid therefrom.

Referring first to Figs. 1–4, there is here shown a decanter D in the general form of a bowl whose walls converge near the top to provide a neck **11** around which is secured a collar **12**. Just above the neck the decanter is provided with a wide open mouth which is bordered by an outturned lip **15** which, in the construction illustrated, is circular in contour. A distinguishing feature of this lip is that its top face is uniplanar, i. e. it is devoid of any irregularities or breaks in its continuity such for example as by a pouring spout which is a feature common to most pouring vessels.

The collar **12** comprises a fitting **17** having a pair of upwardly extended spaced tongues **18** adapted to receive between them an ear **19** projecting laterally from a lid L which surmounts the decanter. As by a pin **20** which traverses the ear with its opposite ends supported by the tongues **18**, the lid is hingedly mounted with capacity for upwardly swinging movement through more than 90° to a position of rest against a handle H that is fixedly secured to the decanter through the medium of its collar **12**. In its open position (see Fig. 1) the lid affords unrestricted access to the wide open mouth of the decanter. In its closed position the lid presents a nearly annular face **22**, adjacent its periphery, in seating relation to the uniplanar top face of the decanter lip **15** to coact therewith in the manner now to be explained.

The lid contour is generally circular with an upward slope toward its center so as to provide therebelow a shallow chamber which is disposed mostly above the decanter lip **15**. Depending from the lid is a circular wall **25** which borders the inside of its contact face **22** and extends slightly into the decanter mouth close to the inner edge of its lip **15**. At a point opposite the ear **19** the wall **25** is broken to provide an out-flow opening *o* bordered by spaced radial walls **26** which join with the circular wall **25**. The radial walls **26** along the top also join with the lid which is somewhat elevated between these walls in the form of a deck **28** which extends radially inwardly to merge with the generally convex contour (in vertical cross section) of the lid.

The space between the radial walls **26** defines, in effect, a radial passageway *p* communicating with the out-flow opening *o*. In response to manipulation of the handle H whereby the decanter is tilted, liquid which is poured therefrom flows across the lip **15** and, with but very little care, may be so controlled as to confine itself to the space between the radial walls. For this purpose I provide a radially extending guiding rib **29** which depends from the deck **28** between the walls **26** medially thereof. This rib which starts near the center of the lid inclines downwardly at *a* then is rounded at *b* to proceed upwardly for termination in a ledge *c* which overlies the lip **15**, either resting thereupon or lying close thereto.

The lid when so constructed and combined with a decanter of the kind described, provides a control means whereby liquid poured from the decanter in a proper manner is caused to flow across the lip **15** within the relatively narrow space defined by the radial walls **26**. To obtain such a control in the out-flow of the liquid I rely upon its property of surface tension which draws it toward the adjacent surfaces. The rib **29** provides two such surfaces medially of the passageway *p* which ends in the out-flow opening *o*. The presence of this rib provides a capillary attraction which confines a normally out-flowing stream to the narrow limits of this passageway so that there will be little tendency for the liquid to spread when crossing the lip **15**. The presence of the radial walls **26** along the sides of the passageway *p* acts also as a deterrent to prevent lateral spreading of the moving liquid in case the decanter be tilted to the point of augmenting its flow beyond the capillarity capacity of the guiding rib. Furthermore, at the conclusion of the pouring operation, any liquid remaining on the lip will be drawn back by the adjacent ends of the walls **26** and rib **29** to remain inwardly of the lip so as to avoid any after-drip therefrom. This is a particularly desirable result, since after-drip is usually encountered in a decanter having a wide mouth terminating in a uniplanar lip.

Referring now to Figs. 5–9, there is here shown a decanter D' in the general form of a bowl whose walls converge near the top to provide a neck **51** around which is secured a collar **52**. Just above the neck the decanter is provided with a wide open mouth which is bordered by an outturned lip **55** which, in the construction illustrated, is circular in contour. A distinguishing feature of this lip is that its top face is uniplanar, i. e. it is devoid of any irregularities or breaks in its continuity such for example as by a pouring spout which is a feature common to most pouring vessels.

The collar **52** comprises a fitting **57** having a pair of upwardly extended spaced tongues **58** adapted to receive between them an ear **59** projecting laterally from a lid L' which surmounts the decanter. As by a pin **60** which traverses the ear, with its opposite ends supported by the tongues **58**, the lid is hingedly mounted with capacity for upwardly swinging movement through more than 90° to a position of rest against a handle H' that is fixedly secured to the decanter through the medium of its collar **52**. In its open position (see Fig. 5) the lid affords unrestricted access to the wide open mouth of the decanter. In its closed position the lid presents a nearly annular contact face **62**, adjacent its periphery, in seating relation to the uniplanar top face of the decanter lip **55** to coact therewith in the manner now to be explained.

The lid contour is generally circular with an upward slope toward its center so as to provide therebelow a shallow chamber which is disposed mostly above the decanter lip **55**. Depending from the lid is a circular wall **65** which borders the inside of its contact face **62** and extends slightly into the decanter mouth close to the inner edge of its lip **55**.

At a point opposite the ear **59** the wall **65** is chorded at **66** so as to be spaced away from the inner edge of the decanter lip **55** at that point (see Fig. 6). Adjacent the chord wall **66** the lid L' extends outwardly over and beyond the outer edge of the decanter lip **55** to form an eave **67**. The under side of this eave which remains spaced from the lip **55** joins with the chord wall **66** and also with a pair of spaced radial walls **68** which together define an out-flow opening *o'*. In effect the chord wall **66** constitutes a dam under which the liquid in the decanter must pass when it is poured.

The lid when so constructed and combined with a decanter of the kind described provides a control means whereby liquid poured from the decanter in a proper manner is caused to flow through the out-flow opening *o'* defined by the lip **55**, eave **67**, and radial walls **68**.

To obtain the desired control in the out-flow of the liquid I utilize its property of surface tension which causes the liquid to be drawn to the adjacent surfaces. The chord wall **66** and the eave **67** provide a surface to which the out-flowing liquid is drawn as by capillary attraction with the result that a constant, well-defined stream is produced which, to a considerable degree, is drawn upwardly and outwardly past the lip **55** by the capillary attraction of the eave **67** before falling away therefrom in response to gravity (see Fig. 9). This has the effect of reducing the amount and weight of liquid which comes in contact with the decanter lip **55** and consequently reduces drip at that point. Furthermore, at the conclusion of the pouring operation any liquid remaining in the out-flow opening *o'* is drawn back by the downwardly and rearwardly inclined under surface of the eave to the chord wall from whence it drips into the decanter, thus eliminating after-drip on the outside.

The two forms of my invention herein described both employ the same fundamental means to induce capillary attraction. In both constructions a portion of the lid depends into the path of the out-flowing liquid so as to draw the out-flowing liquid and guide it through the opening provided therefor. This same depending lid portion, also through the medium of capillary attraction, causes liquid to be drawn back into the decanter at the conclusion of the pouring operation thus reducing after-drip.

The present embodiments are to be considered in all respects as illustrative and not restrictive, the scope of my invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

I claim:

1. For use with a decanter having a circular mouth with a radially extending uniplanar lip, a lid overlying the mouth disposed substantially entirely thereabove and provided with a contact face for engagement with the radial surface of the lip when in normal position on the decanter, there being a break in the lid contact face over a small arc to provide an out-flow opening between the lip and the lid thereabove, a substantially circular wall depending from the lid and bordering the inside of the contact face, said wall having a chord portion opposite the out-flow opening so as to be spaced away from the inner edge of the lip, an eave joined to the lid at the out-flow opening and extending outwardly radially beyond the lip, spaced substantially radial side walls depending from the eave in engagement with the radial surface of said lip throughout its entire radial thickness, said walls being disposed at opposite sides of the out-flow opening and extending inwardly therefrom to the chord portion, said eave, side walls and chord portion forming a shallow opening relative to its circumferential width to provide large surface area to which liquid particles would tend to adhere, thereby preventing after-drip at the conclusion of the flowing operation.

2. For use with a decanter having a mouth with a radially extending uniplanar lip, a lid overlying the mouth disposed substantially entirely thereabove and provided with a complementary radially extending contact face for engagement with the radial surface of the lip when in normal position on the decanter, there being a break in the lid contact face over a small arc to provide an out-flow opening between the lip and the lid thereabove, the under side of the lid at the arc being formed so as to extend from a position within the decanter and below the plane of the lip radially upwardly and outwardly above and beyond the lip outer edge, and spaced walls depending from the lid in engagement with the lip at opposite sides of the outflow opening and extending inwardly therefrom to define a lateral passageway, said passageway being shallow relative to its circumferential width to provide a large surface area to which liquid particles would tend to adhere, thereby preventing after-drip at the conclusion of the flowing operation.

3. For use with a decanter having a mouth with a radially extending, uniplanar lip, a lid overlying the mouth disposed substantially entirely thereabove and provided with a complementary radially extending contact face for engagement with the radial surface of said lip when in normal position on the decanter, said lid having a break in its contact face over a small arc and spaced substantially radial walls at the extremities of the arc in engagement with the radial surface of said lip throughout substantially its entire radial thickness to define with the lip and the lid a lateral out-flow passageway, said passageway tending to confine a normally out-flowing stream of liquid to the space within said passageway, and being shallow relative to its circumferential width to provide large surface area to which liquid particles would tend to adhere, thereby preventing after-drip at the conclusion of the flowing operation.

4. For use with a decanter having a mouth with a radially extending, uniplanar lip, a lid overlying the mouth disposed substantially entirely thereabove and provided with a complementary radially extending contact face for engagement with the radial surface of said lip when in normal position on the decanter, said lip having a break in its contact face over a small arc and spaced substantially radial walls at the extremities of the arc in engagement with the radial surface of said lip throughout substantially its entire radial thickness to define with the lip of the lid a lateral out-flow passageway, and means depending from the lid into the passageway adjacent the out-flow opening, said passageway being shallow relative to its circumferential width so as to provide, in conjunction with said means, large surface area to which liquid particles would tend to adhere, thereby preventing after-drip at the conclusion of the flowing operation.

5. For use with a decanter having a mouth with a radially extending uniplanar lip, a lid overlying the mouth and provided with a contact face for engagement with the lip when in normal position on the decanter, there being a break in the lid contact face over a small arc to provide an out-flow opening between the lip and the lid thereover, and a rib depending from the lid and radially extended toward the out-flow opening so as to be central said arc, said rib extending through the out-flow opening so as to provide sufficient surface area to which liquid

particles would tend to adhere, thereby aiding the direction of liquid flow through the opening and preventing after-drip at the conclusion of the flowing operation.

6. For use with a decanter having a mouth with a radially extending uniplanar lip, a lid overlying the mouth and provided with a contact face for engagement with the lip when in normal position on the decanter, there being a break in the lid contact face over a small arc to provide an out-flow opening between the lip and the lid thereover, spaced substantially radial walls depending from the lid at opposite sides of the out-flow opening in engagement with the radial surface of said lip throughout its entire radial thickness and extending inwardly therefrom to define a lateral passageway, and a rib depending from the lid and radially extended toward and through

the out-flow opening and disposed in part within the decanter mouth below its lip, said opening being shallow relative to its circumferential width to provide large surface area to which liquid particles would tend to adhere, thereby preventing after-drip at the conclusion of the flowing operation.

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