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2,695,751

COUNTER ATTACHMENT FOR BOTTLES

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2 Sheets-Sheet 1

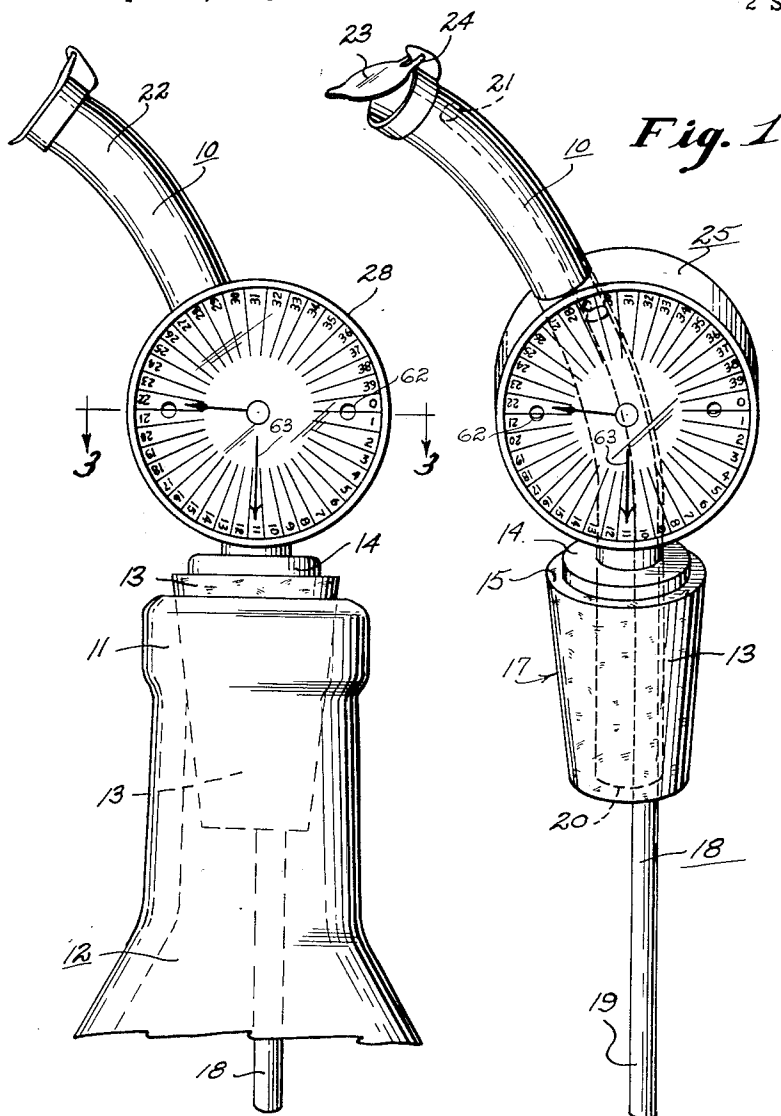


Fig. 1

Fig. 2

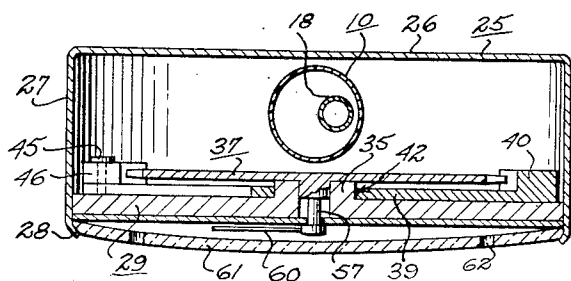


Fig. 3

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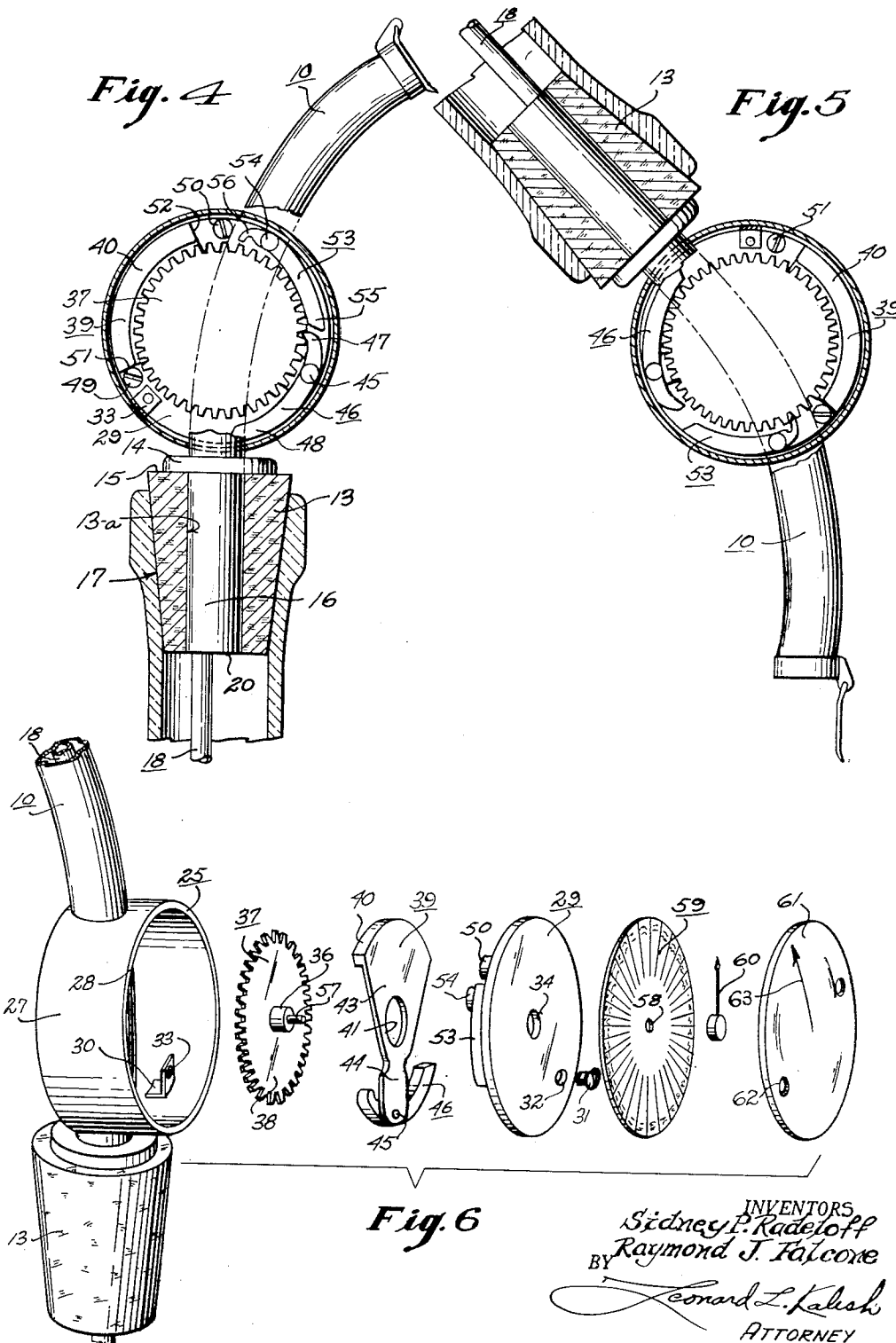


Fig. 6

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1

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COUNTER ATTACHMENT FOR BOTTLES

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10 Claims. (Cl. 235—94)

The present invention relates to pour-spouts or nozzles for bottles and particularly to pour-spouts for liquor bottles or the like.

An object of the present invention is to provide a pour-spout for liquid-filled bottles or containers which will aid in the dispensing of the contents from the container and which will keep a record of the number of times the container has been inverted to dispense liquid therefrom.

An additional object of the present invention is to provide a self-contained pour-spout which may be applied to a liquid-container which must be inverted periodically to dispense the contents thereof, whereby to record the number of times the container has been tilted or inverted.

Further objects and advantages of the present invention will be apparent by reference to the appended specification, claims and drawings.

For the purpose of illustrating the invention, there is shown in the accompanying drawings one form thereof which is at present preferred, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangements and organizations of the instrumentalities as herein shown and described.

Referring to the drawings wherein like reference characters indicate like parts,

Figure 1 represents a perspective view of the pour-spout and counter of the present invention.

Figure 2 represents a front elevational view of the pour-spout and counter of the present invention.

Figure 3 represents a horizontal cross-sectional view along line 3—3 of Figure 2.

Figure 4 represents a fragmentary vertical cross-sectional view of the toothed-plate, latch and pendulum assembly of the counter of the present invention, viewed generally at 180° from the view of Figure 2, showing the bottle and pour-spout in the upright position.

Figure 5 represents a view similar to that shown in Figure 4 but showing the pour-spout and counter of the present invention in an inverted or pouring position.

Figure 6 represents a perspective exploded view of the component parts of the pour-spout and counter of the present invention.

The present invention includes a generally curved or arcuate, tubular pour-spout 10 adapted to be supported in fluid-tight relationship in the neck 11 of a bottle or other fluid-container 12 by a cork or sealing-member 13. The pour-spout 10 may have a shoulder 14 thereon adapted to abut the upper surface 15 of the sealing-member 13 when the lower portion 16 of the pour-spout 10 is operatively secured in the bore 13-a.

The sealing-member 13 may be tapered, as at 17, whereby to fit wedgingly within the neck of the bottle 12. Thus the sealing member 13 and the pour-spout 10 may be disengaged from one bottle 12, when desired, and inserted upon a similar bottle.

A vent-tube or air-passageway 18 is operatively disposed within the pour-spout 10 with the lower end 19 thereof extending a substantial distance beyond the lower end 20 of the pour-spout 10, as is shown particularly in Figure 1. The upper end 21 of the vent-tube 18 may terminate within the upper curved portion 22 of the pour-spout 10, slightly below the cap or sealing member 23 thereon. The cap or cover-plate 23 may be pivotally secured, as at 24, whereby it will close off

2

the discharge end of the pour-spout 10 when the bottle is in an upright position, as is shown particularly in Figures 2 and 4. However, when the bottle is inverted as is shown in Figure 5, the cap 23 will swing open and permit the contents of the bottle 12 to be discharged through the pour-spout 10.

Operatively secured to the pour-spout 10 above the shoulder portion 14 is a generally cup-shaped housing-member 25 having appropriately-shaped apertures in the cylindrical exterior thereof adapted to receive the pour-spout 10.

The rear end 26 of the cup-shaped housing-member 25 may be imperforate and integral with the external cylindrical surface 27, as shown in Figure 3.

The pour-spout 10 may pass through the cup-shaped member 25 near the rear wall 26 thereof, as shown in Figure 3, with the outer edge 28 of the cylindrical portion 27 extending beyond the pour-spout 10 a substantial distance. The cup-shaped member 25 may be fastened to the pour-spout 10 by soldering or brazing or otherwise securing the peripheral edges of the apertures in the cylindrical portion 27 to the external surface of the pour spout 10.

The cup-shaped member 25 is adapted to receive therein, between the pour-spout 10 and the outer edge 28 thereof, the counter-mechanism hereinafter to be described.

A stationary disc-like mounting-plate 29 having an outer diameter slightly less than the internal diameter of the cylindrical portion 27, is adapted to be inserted therewithin and operatively secured thereto by screw-engagement with the support or lug 33. The lug 33 may be an integral part of the cup 25 or may be a separate member operatively secured thereto and adapted to receive therewithin the threaded screw 31. Thus the plate 29 may be inserted into the housing 25 and the screw 31 inserted through the hole 32 in the plate 29 and into the threaded hole 33 in the bracket 30. The inter-engagement and interlocking of the plate 29 in the cup-shaped housing member 25 positions the plate 29 in spaced relation to the pour-spout 10, as is shown particularly in Figure 3. It is to be understood that more than one supporting lug 33 may be used, but one is sufficient to prevent rotation of the plate 29 with respect to the housing 25.

The plate 29 has an axial bore 34 therethrough, and an upstanding portion or hub 35 surrounding said bore 34 on the inner face of the plate 29. The axial bore 34 is adapted to receive therein the axle-portion 36 of a toothed ratchet-wheel or gear 37 whereby to support said gear 37 for rotary motion on and in respect to the plate 29, with the outer face 38 of the gear 37 bearing against the hub 35.

A pendulum 39 having a weight 40 at one end and a pivot-hole or bore 41 therethrough is supported by and pivots upon the external surface 42 of the hub 35, as shown particularly in Figure 3. The arm 43 of the pendulum 39 is a relatively thin member being somewhat smaller in cross-section than the axial dimension of the hub 35 whereby the pendulum 39 (and particularly the arm 43 thereof) may be operatively disposed between the gear 37 and the plate 29, with the weighted end 40 of the pendulum 39 extending beyond the peripheral edge of the teeth of the gear 37.

A finger-like extension 44 of the pendulum 39 extends radially away from and diametrically opposite the weighted end 40, with a pivot-pin 45 secured thereto whereby to retain an eccentric latch or locking member 46 thereupon. The latch 46 is pivotally secured to the pin 45 whereby to permit rotary motion of the latch 46 about the pin 45 and with respect to the pendulum 39.

The latch 46 has a shorter toothed end 47 and a somewhat longer weighted end 48. The toothed end 47 is held against the gear 37 by the weight 48, and the tooth 47 is formed in a manner to permit it to slip ratchet-wise over the teeth of the gear 37 when the pendulum 39 is rotated clockwise (in Figure 4), but the tooth 47 engages the gear positively and causes simultaneous and equal rotary motion of the gear when the pendulum 39 is rotated counter-clockwise (in Figure 4).

The rotary or oscillating motion of the pendulum 39

about the hub 35 is limited by the stop-screws 49 and 50 secured to the mounting-plate 29. The stop-screws 49 and 50 are secured about the periphery of the plate 29 so that the screw 49 will contact one end 51 of the weighted member 40 and the screw 50 will contact the other end 52 thereof. The arcuate distance between the stop-screws 49 and 50 is somewhat in excess of the arcuate dimension of the weighted portion 40 of the pendulum 39 whereby to permit the pendulum 39 to oscillate to and fro about the hub 35 between the limiting positions imposed by the stop-screws 49 and 50.

An auxiliary latch or locking finger 53 is pivotally mounted upon the plate 29 by the pivot-pin 54. The finger 53 is eccentrically mounted upon the pivot-pin 54 so that the weighted end 55 thereof and the gear-engaging portion or finger 56 will swing about the pivot-pin 54 when the plate 29 of the counting-mechanism of the present invention is tilted from the position shown in Figure 4 to that shown in Figure 5. As shown in Figure 4, when the bottle and the counting-mechanism attached thereto is standing upright, the weighted end 55 of the latch 53 will pivot clockwise about the pivot-pin 54 so as to bring the locking finger 56 thereof out of engagement with the gear 37. However, when the counting-mechanism and the bottle to which it is secured are inverted, as shown in Figure 5, the latch 53 will pivot counter-clockwise about the pivot-pin 54 whereby to engage the finger 56 in one of the teeth of the gear 37.

A shaft 57, attached to or an integral part of axle 36 of the gear 37, is adapted to extend through the bore 34 of the plate 29, and through the hole 58 in the dial plate 59, whereby to receive operatively thereupon, a pointer-member 60. As shown particularly in Figure 3, the dial 59 may be placed in juxtaposition to the outer face of the plate 29 and operatively secured thereto. Alternatively, the dial-markings may be etched or scored directly upon the outer face of the plate member 29. We prefer to use a separate dial 59 with the marking scored thereupon and with the shaft 57 long enough to protrude through the hole 58 and the plate 59 and receive the pointer 60 thereupon. The pointer 60 may be frictionally secured to the shaft 57 whereby the pointer will rotate with the gear-member 37.

The dial-plate 59 may have numerals scored around the periphery thereof, as shown particularly in Figures 1 and 2, whereby each toothed advancement of the gear 37 will cause the pointer 60 to move from one number to the next succeeding number on the dial 59. Although we prefer a dial marked or scored in increments of approximately 9° whereby to permit the etching or scoring of approximately 40 numbers upon the dial, it is obvious that the number of teeth in the gear 37 and the number of scored lines upon the dial 59, may be changed, as desired, so that each toothed advancement of the gear 37 will be indicated by the pointer 60 as one numerical change or advancement on the dial 59.

A dished cover-glass or crystal 61 of transparent material may be used to cover the assembled plate 29, gear 37, pendulum 39, dial 59 and pointer 60, as shown particularly in Figure 3. The edge 28 of the cup-shaped housing-member 25 may be crimped, as shown in Figure 3, to hold the assembled members therewithin.

A plurality of holes 62, adapted to receive a spanner-wrench or similar tool (not shown) are formed in the cover-glass 61 so that the glass 61 may be rotated with respect to the housing 25. An arrow or other indicating means 63 may be etched or otherwise formed on the glass 61 to provide a base or reference means or index mark for recording the number of inversions of the counter-mechanism of the present invention.

The operation of the present invention is as follows:

With the cup-shaped housing 25 secured to the pour-spout 10 and with the lug 30 formed or operatively secured therewithin, the plate 29, pendulum 39, gear 37, dial 59, pointer 60 and cover-glass 61 may be mounted within the cup 25, as shown in Figure 3. Then the assembled counting-mechanism and pour-spout may be operatively secured to the neck of a bottle or container 12 by the gasket or cork 13, as shown particularly in Figures 2 and 4. Thus, when the bottle 12 is inverted, the fluid therewithin may be discharged through the neck 11 and through the discharge spout or pour-spout 10, with the discharged fluid replaced by an equal volume of air entering through the vent 18. Thus, the fluid will flow from the bottle 12 freely and easily through the pour-

spout 10 with air replacing it in the opposite direction through the vent 18.

When the bottle 12 is in the upright position shown in Figures 2 and 4, the counting-mechanism encased within the cup-shaped housing 25 assumes the position shown in Figure 4. Thus, the end 51 of the weight 40 of the pendulum 39 will contact the stop-screw 49, the eccentric latch 46 is moved counterclockwise about the pivot-pin 45 to bring the finger 47 against the gear 37, and the eccentric latch 53 is pivoted clockwise about the pivot-pin 54 (to bring the locking-finger 56 out of engagement with the toothed gear 37).

When the container 12 is inverted to dispense the contents thereof, the counting-mechanism of the present invention moves to the position shown in Figure 5. Thus, the weight 40 causes the pendulum 39 to rotate clockwise about the hub 35 until the end 52 thereof strikes the stop-screw 50. The finger 47 of the latch 46 is held against the gear 37, but the latch 46 will slip ratchet-like over the teeth of the gear until the pendulum-weight 40 reaches the limiting position shown in Figure 5. If the mechanism is tipped forwardly sufficiently far, the latch 46 may become disengaged from the gear 37, as shown in Figure 5. Therefore, the aforesaid angular-movement of the pendulum 40 will not move the pointer 60 about the dial 59.

When the counting-mechanism reaches the position shown in Figure 5, the locking latch 53 engages and prevents rotation of the gear 37. Then, when the container 12 is moved from the position shown in Figure 5 to an upright position, the gear 37 and the pointer 60 will be moved with respect to the dial 59 because the finger 47 of the latch 46 is moved against the gear 37, and the movement of the pendulum 39 will cause the gear 37 and the pointer 60 to move one increment (or approximately 9°) about the dial 59. The stop-screws 49 and 50 are angularly positioned about the plate 29 so that the angular movement of the pendulum 39 is equal to approximately 9° or one tooth on the gear 37 and one corresponding increment or division upon the dial 59.

Therefore, each time the container 12 is inverted and then again set upright, the pointer 60 will travel one increment along the dial 59 whereby to indicate another tipping motion of the bottle or container 12 and thus to indicate that another quantity of liquor has been dispensed through the pour-spout 10.

Thus, the counting-mechanism of the present invention will indicate how many times the bottle has been inverted and contents dispensed therefrom, and if the volume of fluid which is dispensed each time is of uniform quantity, as is generally the case when dispensing liquid such as liquor, then the quantity of fluid dispensed may be determined by reference to the position of the pointer 60 upon the dial 59.

Moreover, since the capacity of the average liquor bottle (to which the counter of the present invention may be secured) is uniform, a reference to the position of the pointer upon the dial after the bottle has been completely emptied will provide the means of ascertaining the average volume of liquor dispensed each time the bottle is inverted.

The counting-mechanism of the present invention may be used in conjunction with a means for measuring the quantity of fluid discharged on each inversion of the bottle or with means controlling the amount of fluid dispensed with each inversion of the bottle whereby an accurate check and record of the dispensing of the contents therefrom may be kept.

A crystal 61, which is transparent, is shown in the drawings, so that the relative reading of the pointer 60 may be observed directly therethrough, but an opaque cover-member may be used in place of the crystal 61 which may be removed by a key or other means so as to reveal the number of times the bottle has been used (to one who has the key to said cover) but will not reveal such information to the casual observer.

Means (not shown) may be provided to lock the counting device and pourer of the present invention to the bottle so that the contents of the bottle may not be dispensed without being recorded.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illus-

7

to rotate said toothed wheel with said pendulum, said latch adapted to be disengaged from said toothed wheel when said pendulum is rotated the other way, locking means adapted to secure said toothed wheel against rotation when said latch is not operatively engaging said wheel, stop-members on said support adapted to limit the arcuate movement of said pendulum, indicating means secured to and rotatable with said toothed wheel, a cover operatively secured to said housing in juxtaposition to said indicating means, and an index mark on said cover adapted to be aligned with said indicating means, said pendulum movable from one limiting position to the other limiting position when said housing is inverted.

10. A device for dispensing liquids from containers including a discharge conduit operatively secured to the container-outlet, a housing member adapted to be secured to said discharge conduit, a support in said housing having a bore therethrough, a toothed wheel rotatably mounted in said bore, a pendulum rotatable on said support concentrically with said toothed wheel, a latch on said pendulum adapted operatively to engage said toothed wheel when said pendulum is rotated one way whereby to rotate said toothed wheel with said pendulum, said latch adapted to be disengaged from said toothed wheel when said pendulum is rotated the other way, locking means adapted

8

to secure said toothed wheel against rotation when said latch is not operatively engaging said wheel, stop-members on said support adapted to limit the arcuate movement of said pendulum, indicating means secured to and rotatable with said toothed wheel, a cover operatively secured to said housing in juxtaposition to said indicating means, and an index mark on said cover adapted to be aligned with said indicating means, said pendulum movable from its first limiting position to its second limiting position when said housing is inverted, said pendulum returnable to its first limiting position when said housing is returned to its first position.

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