Sept. 4, 1951 E. S. LILLY 2,566,527

DRIPLESS CONTAINER

Filed Aug. 29, 1950

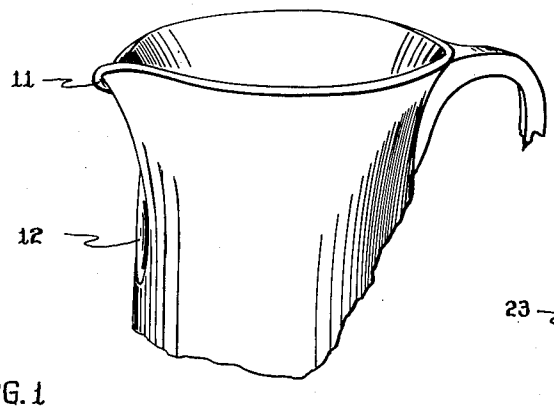


FIG. 1

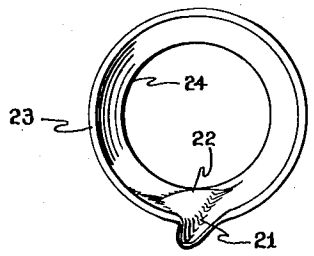


FIG. 4

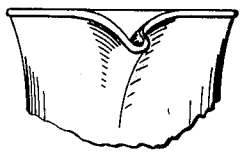


FIG. 2

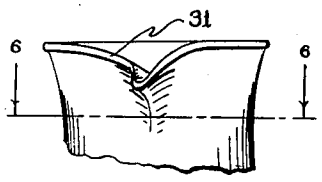


FIG. 5

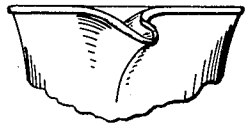


FIG. 3

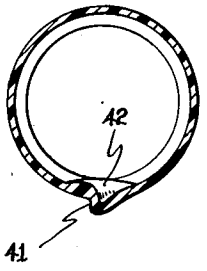


FIG. 6

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DRIPLESS CONTAINER

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This invention relates to containers for holding and dispensing liquids, and more particularly concerns lipped household, laboratory and industrial devices for pouring liquids.

A major problem which is encountered in the home and in many industrial operations, when liquids must be dispensed from one container to another, is to effect such transfer without allowing residual liquid to drip from the lip or spout of the pouring vessel. The effect of such dripping is to cause at least the waste of a portion of the liquid, and frequently also corrosion, marring or other damage to surrounding surfaces. In the home, for instance, the drops of cream which fall from the cream pitcher or the drops of sticky syrup which run down from the lip of the syrup jug often temporarily mar or even permanently stain fine tablecloths or table surfaces. Actually hazardous is the tendency for strong acids and other liquid chemicals used in many laboratory and industrial operations to drip from the pouring container and corrode surrounding surfaces or painfully injure the operator. Methods for overcoming or minimizing these difficulties and dangers have been frequently sought, but generally without success.

It is among the objects of my invention to overcome these difficulties heretofore obtaining in the home and in the plant or factory. A particular object is to devise means for dispensing liquid from one container to another without residual dripping. Another object is to provide dripless containers for household, laboratory and industrial use.

These and other objects are realized by my present invention in pouring devices for dripless containers. Several examples of my new devices are illustrated in the figures of the accompanying drawing, wherein

Figure 1 is a side view in perspective of a pitcher with parts broken away;

Figures 2 and 3 are frontal views in perspective of two embodiments of my invention;

Figure 4 is an end view of a vessel for liquids equipped with one of my pouring devices, looking downward from above on the vessel in its normal position;

Figure 5 is a frontal view of yet another of my devices; and

Figure 6 is a sectional view of the embodiment of Figure 5, taken at the plane 6—6.

I have discovered that a liquid container of essentially any type may be provided with a certain pouring spout which operates with startling efficiency to prevent the dripping of residual

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liquid of substantially any viscosity and surface tension. Broadly speaking, my spout comprises in combination a lip projecting in an asymmetric direction from the upper rim of the container and channeling in the wall of the container which forms conduit means to guide liquids to the said lip.

Describing my invention more specifically, a container for liquids is equipped with a device for dispensing said liquids by pouring. This device may be described as including a lip which projects from the rim or periphery of the container at an acute angle thereto, and conduit means for the guidance of the liquid to the lip. Such conduit means may be considered as channeling in the wall of the container below the said lip, which channeling gives the effect of having been produced by twisting the wall about its longitudinal axis. It should be understood, of course, that this channeling may not be, in fact, produced by physical twisting, but that its character and appearance give that effect.

It is readily apparent that my pouring spout may be fitted successfully on essentially any type and shape of liquid container and on a vessel of substantially any known composition. For instance, it finds special value in the home on pitchers, jars, jugs, saucepans, glasses, bowls, vases, and the like. It is also extremely useful when supplied on beakers, graduates and graduated cylinders, and the various other pouring vessels utilized in the chemical laboratory. In the plant or factory my pouring spout may be fitted to carboys, buckets, blend tanks and vats from which slurries, solutions and other liquids are to be poured.

As mentioned, my pouring spout may be formed of substantially any known substance and may be shaped by molding, mechanical working or other means of any nature. Thus, glass, porcelain, pottery or other ceramic vessels may be readily shaped to incorporate my device. Plastics may also be easily molded to form the same. Metal or rubber spouts may be fabricated, if desired, and lipped paper cups, wooden containers, and the like may include my dispensing means as an integral part thereof.

I have found my invention to be useful with essentially any type of liquid, regardless of viscosity or surface tension. One may pour from such a spout water, a thicker liquid like the table syrup previously mentioned, a thinner liquid such as a light petroleum fraction, acids, oils, etc. My device is useful, too, even though there be quantities of solids dispersed in the liquid

or appearing as lumps therein, just so long, obviously, as the solids content is not so great as to inhibit completely the flowing characteristics of a liquid. Slurries and suspensions of solids may easily be poured through my invention; and I have found that even a material such as thick gravy, containing lumps of meat or uncooked flour, may readily be dispensed from a gravy bowl equipped with my spout, without residual dripping.

It is vital to my invention, in order that a container be truly "dripless," that the pouring lip be asymmetric, that is, that it project in an asymmetric direction from the upper rim of the pouring vessel. The obvious effect of this non-symmetry is that one wall of the lip forms a different angle with the adjacent side wall of the container than does the other wall of the lip with the side wall adjacent to it, so that a curved or asymmetric channel for the liquid is formed. The conventional lip projects at a 90° angle from the periphery or perimeter of a container, whereas mine must project at an acute angle therefrom. Generally speaking, I find the greatest degree of success in preventing residual dripping is obtained by having the lip project from the container edge at an angle substantially between 15° and 75°, i. e. so that the upper edge of one wall of the lip forms an angle between about 15° and about 75° with the adjacent rim of the container. For ease of fabrication and greatest commercial efficiency a 45° angle is preferred. The effect of such asymmetric angling of the lip is to make it appear to have been twisted sideways, and this effect is generally sufficient to eliminate dripping. However, the greatest benefits are realized by providing a shape for the lip wherein it appears to have been tilted downward as well as to have been twisted sideways. In this preferred shape, the perimeter of the vessel on one side will slant gradually downward toward the lip, so that the entire rim will not be in one plane.

As above noted, perhaps the best way to describe the concomitant channeling which serves to guide liquids to such a lip is to say that the channeling appears to have been formed by twisting the vessel wall below the lip about a longitudinal axis. If this appearance is achieved by actually twisting the vessel wall, there will be a resulting valley below the lip on the external surface of the container and a corresponding hump or raised area on the internal surface. In such case, the liquid is guided naturally to the lip by the barrier created by the hump. Of course, in commercial molding or other fabrication of such pouring spouts, no valley appears on the external vessel surface, but the necessary channeling is artificially formed. The length and width of such channeling must necessarily depend upon the size and shape of the container and the character of the liquid desired to be poured. So long as the channeling provides conduit means for guiding the particular liquid to the particular lip, no further modifications are required.

Specific examples of my invention are illustrated in the figures of the accompanying drawing. It should be understood that these examples are merely some specific and frequently preferred embodiments of my pouring spout and that my discovery is not limited thereto. Indeed, since many apparently widely different embodiments of this invention may be made without departing from the spirit and scope hereof, it is to be understood that my invention is not limited except as defined in the appended claims.

Figure 1, for instance, is an example of a standard household pitcher into which has been incorporated one type of my pouring spout. In this particular utensil the lip **11** is angled to the left as one faces it; and the channeling gives the appearance of having been formed by twisting the wall as previously described, the typical valley **12** being visible on the external surface of the pitcher below the lip. This pitcher was employed in pouring a thick sugar syrup product known in the trade as Karo. It was found that, regardless of how clumsily and slowly this liquid was poured from the lip, immediately upon tilting the pitcher up toward vertical all residual syrup drained back into the utensil and no drops whatsoever collected or dripped out at the lip.

Figure 2 illustrates one of my pouring spouts wherein the lip is angled to the right as one faces it. This device was incorporated in a plastic glass, molded to produce artificial channeling visible on the interior only. This glass was then utilized for dispensing cigarette lighter fluid, a liquid which is notoriously difficult to pour from a conventional lipped container. As in the first example above, no matter how inefficiently or slowly the liquid was dispensed from the glass, immediately upon the latter's being tilted back toward a vertical position, residual liquid drained completely back and no dripping from the spout occurred.

Figure 3 represents a pouring spout similar to that of Figure 2, but with channeling more pronounced and the lip more acutely angled, as is apparent. This spout was also found to allow dripless pouring of various types of liquids, and particularly a liquid suspension containing solid lumps approximately ¼" in diameter.

Figure 4 is an end view of one of my spouts fitted on a liquid container, looking downward on the vessel from the rim. The details of the particular channeling here achieved are apparent, the conduit **21** and the "hump" **22** being shown in relation to the rim **23** and the inner edge of the vessel base **24**. Such a spout is particularly useful as an adjunct to one of the hard rubber buckets so frequently used for transporting and pouring acids and slurries in semi-works and plant operations.

Figure 5 is still another embodiment of my invention, wherein the rim at **31** is shown to be slanting gradually downward toward the lip, so that the entire periphery of the vessel is not in one plane. Figure 6 represents a cross section of Figure 5 taken at the plane **6—6** and shows the lower area or beginnings of the lip **41** and the channeling **42**.

I claim:

1. Means for dispensing liquids from a container which comprise an asymmetric lip projecting from the upper rim of said container and so positioned that one wall of the lip forms a different angle with the adjacent side wall of the container than does the other wall of the lip with the side wall adjacent to it, thereby forming a curved channel for the liquid.

2. Means for dispensing liquids from a container which comprise an asymmetric lip projecting from the upper rim of said container and so positioned that the upper edge of one wall of the lip forms an acute angle with the adjacent rim of the container and the upper edge of the other wall of the lip forms an obtuse angle with the corresponding rim of the container adjacent to it, thereby forming an asymmetric channel for the liquid.

3. The dispensing means of claim 1 wherein said upper rim of the container slants downward on one side of the lip toward the lip, so that in the normal position of the container the pouring area of the lip is on a plane below that of the major portion of said upper rim.

4. The dispensing means of claim 2 wherein said acute angle is substantially between 15° and 75°.

5. The dispensing means of claim 2 wherein said acute angle is about 45°.

6. A pitcher provided with the dispensing means of claim 1.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
278,569	Liscomb	May 29, 1883
1,765,114	Turner	June 17, 1930