NON-SPILLABLE LIQUID DRINKING CONTAINER

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This invention relates to a non-spillable liquid drinking container and more particularly to one adapted for use in moving vehicles such as automobiles, airplanes and like.

One of the hazards of travel, especially by automobile, is the spilling of liquid beverages within the seating compartment of the vehicle by youngsters and others. Not only are the clothes soiled by such accidental spilling but often the upholstery and interior of the vehicle. The possibility of this spilling of beverages is so great that most motorists do not continue their trip from the liquid dispensing establishment until all of the purchased drinkable liquid has been consumed. Obviously this is a serious loss in travel time and if several stops are made during an extended trip the time intervals add up to a considerable amount of time during which the vehicle is not in motion. Furthermore, objectionable spilling of liquids in the vehicle may well take place even if the vehicle is standing still during the drink consuming time phase of the passengers. In the case of airplanes, rough weather is often encountered and this will quite frequently result in the spilling of drinkable liquids from open containers.

Therefore one of the principal objects of my invention is to provide a non-spillable drinking container that is under complete control of the user at all times and one that even if it falls from the grasp of the user will not leak and spill the contents from the container.

A further object of my invention is to provide a non-spillable liquid container that is handy and easy to use.

A still further object of my invention is to provide a disposable non-spillable liquid drinking container adapted to be discarded after the liquid contents have been consumed.

Still further objects of this invention are to provide a non-spillable liquid drinking container that is economical in manufacture, durable in use and refined in appearance. These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my liquid drinking container ready for use;

Fig. 2 is an enlarged longitudinal sectional view of my device and more fully illustrates its construction;

Fig. 3 is an enlarged sectional view of the valve portion of my container illustrating the position of the straw while the liquid contents are being sucked from the container;

Fig. 4 is a cross sectional view of the valve portion of the device and is taken on line 4-4 of Fig. 3; and

Fig. 5 is a longitudinal sectional view of a modified form of structure.

While I have indicated that my device is particularly adapted for the use of children in moving vehicles, it obviously may be used successfully by the operator of a vehicle while the vehicle is in motion. Also my container may be used in the home, hospital, or any place where there is danger of spilling the contents.

In the drawings I have used the numeral 10 to designate an ordinary cup. This cup may be of any suitable material such as waxed cardboard, plastic, glass or metal.

If the device is to be discarded after only one usage, I recommend that it be made of a waxed paper material or a cheap plastic. The numeral 11 designates an ordinary friction lid detachably closing the top of the cup 10. This lid will be of the same material as the cup.

Such cups and lids are in common use and the lid usually has a very small hole inlet passageway 12. It is to such a container that I use my invention and which I shall now describe in detail. The numeral 13 designates a bending portion formed on the lid 11. The numeral 15 designates a tube with its upper end extending through the bearing 13 and its length extending downwardly and terminating in an enlarged portion 16 as shown in Fig. 2.

When the lid 11 is placed on the cup 10, this enlarged portion 16 has its open bottom terminating slightly above the inside bottom of the cup as shown in Fig. 3. The numeral 17 designates the straw portion of my device which slidably extends through the lid 11, through the bearing portion 13 and through the tube 15 and terminates at its lower end within the enlarged portion 16. The numeral 18 designates an enlarged head portion on the lower end of the straw 17 and positioned within the enlarged portion 16. This head portion is of a diameter greater than that of the cylindrical tube portion 15 thereby limiting the upward sliding movement of the straw 17 relative to the enlarged portion 16. The numeral 19 designates a plurality of holes in the wall of the straw 17 directly above the head portion 18 as shown in Fig. 3. The numeral 20 designates any flexible resilient means such as a coil spring having one end connected to the head 18 and its other end engaging the inside bottom of the cup 11 when the device is completely assembled. This spring or like 20 yieldsly holds the straw 17 in an upward position and with the enlarged head 18 engaging the inside top of the enlarged portion 16 as shown in Fig. 2.

For use, the container 10 is filled with the drinkable material such as soft drink liquids, malted milk shakes, malted milk drinks, coffee or like, after which the lid carrying my device is placed onto the cup. At this time the container is ready for use. To suck the liquid from the container it is merely necessary to force-slide the straw 17 downwardly to bring its inlet openings 19 into the enlarged portion 16 as shown in Fig. 3. The moment the straw is not so held the spring 20 will automatically raise the same and thereby prevent any further movement of the liquid from the container through the straw. This automatic closing of the outlet for the beverage will take place whenever the article is accidentally dropped or whenever the mouth is not engaging the straw and holding it in a lowered position.

In Fig. 5 I show a modified structure but this structure while highly desirable is not entirely automatic in closing the passageway of the liquid through the straw. In this structure I have no automatic valve means but I do extend a straw 17' through a lid 11' and then bend the upper portion of the straw above the lid at a right angle and provisionally when the straw is in a bent position and cannot be used in this position. To use the straw it is straightened to an upright position as shown by broken lines in Fig. 5. If the straw has a resiliency to assume its bent position, it will when not in use by holding the
upper end portion in the mouth, return to a somewhat bent position, thereby substantially closing it.

Some changes may be made in the construction and arrangement of my non-spillable liquid drinking container without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a non-spillable liquid container, a cup, a detachable lid in said cup, a tube attached to said lid and extending downwardly in and terminating short of the inside bottom of said cup, a sucking tube slidably extending through said lid and said first mentioned tube and having its lower end closed, at least one intake opening in the side wall of the lower end portion of said sucking tube, and a means for yieldingly holding said sucking tube in an upward position of its sliding movement whereby its intake opening will be within said first mentioned tube.

2. In a non-spillable liquid container, a cup, a detachable lid in said cup, a tube attached to said lid and extending downwardly in and terminating short of the inside bottom of said cup, a sucking tube slidably extending through said lid and said first mentioned tube and having its lower end closed, at least one intake opening in the side wall of the lower end portion of said sucking tube, and a coil spring means for yieldingly holding said sucking tube in an upward position of its sliding movement whereby its intake opening will be within said first mentioned tube.

3. In a non-spillable liquid container, a cup, a detachable lid in said cup, a tube attached to said lid and extending downwardly in and terminating short of the inside bottom of said cup, a sucking tube slidably extending through said lid and said first mentioned tube and having its lower end closed, at least one intake opening in the side wall of the lower end portion of said sucking tube, and a stop means for limiting the upward sliding movement of said sucking tube.

4. In a non-spillable liquid container, a cup, a detachable lid on said cup, a tube attached to said lid and extending downwardly in said cup, an enlarged open bottomed portion on the lower end of said tube terminating short of the inside bottom of said cup, a slidable sucking tube extending through said lid, through said first mentioned tube and terminating inside its enlarged open bottomed portion, a closing head portion on the lower end of said sucking tube limiting the upward sliding movement of said sucking tube, and a plurality of intake passageways in the wall of said sucking tube and positioned adjacent its closing head.

5. In a non-spillable liquid container, a cup, a detachable lid on said cup, a tube attached to said lid and extending downwardly in said cup, an enlarged open bottomed portion on the lower end of said tube terminating short of the inside bottom of said cup, a slidable sucking tube extending through said lid, through said first mentioned tube and terminating inside its enlarged open bottomed portion, a closing head portion on the lower end of said sucking tube limiting the upward sliding movement of said sucking tube, and a spring means having one end bearing on the inside bottom of said cup and its other end bearing on the closing head of said sucking tube.

References Cited in the file of this patent

UNITED STATES PATENTS

970,213 Goebel ........................ Sept. 13, 1910
1,023,630 Elkins ........................ Apr. 16, 1912
1,292,479 Humbert ........................ Jan. 8, 1912
2,800,265 Pugh ............................. July 23, 1957
2,819,981 Nonnamaker ........................ Dec. 10, 1957

FOREIGN PATENTS

598,612 Great Britain ........................ Feb. 23, 1948