

June 3, 1952

F. D. SHERWOOD

2,598,843

Pouring Device

Filed Sept. 27, 1947

FIG. 1

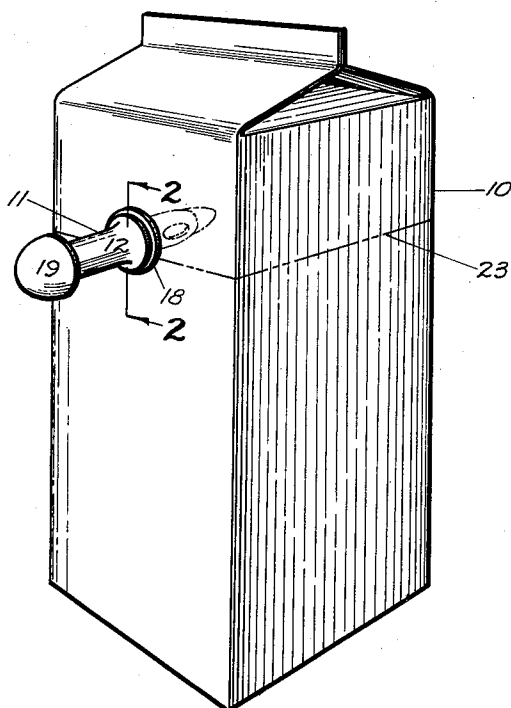


FIG. 2

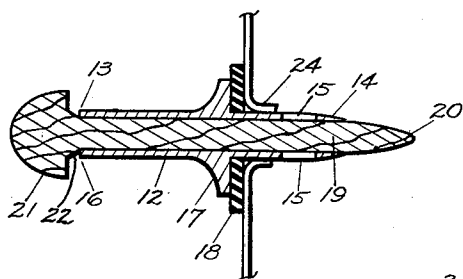
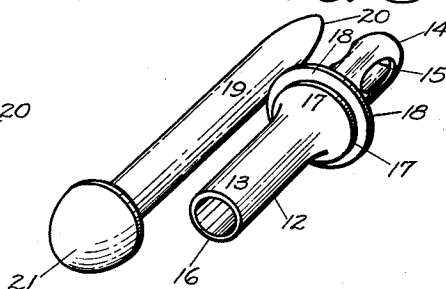


FIG. 3



INVENTOR.

FRANK D. SHERWOOD

BY

Hubner, Malby & Buckler

UNITED STATES PATENT OFFICE

2,598,843

POURING DEVICE

Frank D. Sherwood, Fresno, Calif.

Application September 27, 1947, Serial No. 776,490

2 Claims. (Cl. 222-83)

1

The present invention relates to pouring devices and more particularly to a combined fluid container and pouring and stopper means therefor.

The problems and inconveniences incident to the pouring of fluid from containers of the carton type are conveniently demonstrated by reference to the pouring of cream and milk from paraffin coated paper milk bottles. Such bottles, or milk cartons, are conventionally provided with a flap delineated in a wall of the carton by a slit cut part way through the wall from the exterior thereof to form a line of weakness. Such containers are opened for draining of contained milk therefrom by partially tearing such flaps from the walls in which they are provided to form apertures through said walls. The apertures thus formed are generally ragged and not conducive to ease of pouring. Provision for such flaps and openings is usually made in the top of the container, conventionally in a sloping portion thereof above the normal fluid level, in order to avoid leaking of fluid from the container by unintentional displacing of the flap. This positioning of the flap and its opening is a further source of inconvenience in draining milk from the container. The tearing of such flaps is an inconvenient and cumbersome operation frequently resulting in broken fingernails as effort is made to initiate the tearing action and spilling of milk contained in the container. Such paper bottles are not adapted to accomplish careful draining of cream from the top of milk contained in the paper bottle. The tipping of the bottle generally results in dilution of the cream by the milk. Although the flaps are intended to re-seal the openings to protect milk remaining in the bottle after a portion thereof has been poured, such re-sealing is at best very ineffectually accomplished. Dust and dirt find ingress to the bottle through the incompletely closed opening and milk is lost through evaporation. Normally only a minor difficulty, such evaporation of the milk is a particularly troublesome aspect of the use of such bottles in refrigerators, the evaporation materially increasing the frequency of defrosting operations required of the refrigerator.

An object of the present invention is to provide an improved pouring and stopper means for penetrable fluid containers.

Another object is to provide a combined piercing, pouring, and re-sealing means for fluid containers.

Another object is to provide, in combination, a fluid container having perforable walls, a pour-

2

ing spout adapted to be inserted into the container through such a wall, and stopper means for the spout.

Another object is to expedite the pouring of fluid from perforable containers and to reduce waste of fluids incident to the employing of conventional disposable fluid containers.

Another object is to provide a means adapted to draw lighter fluids from the top of heavier fluids retained in such disposable containers with a minimum of intermixing of such fluids.

Another object is to provide a combined pouring spout and stopper for disposable fluid containers conveniently retrieved from such containers prior to the discarding thereof.

Other objects and advantages will become apparent in the subsequent description in the specifications.

In the drawings:

Fig. 1 is a perspective view of a milk carton or paper bottle illustrative of disposable fluid containers having perforable walls showing a device of the present invention inserted in operational position therein.

Fig. 2 is a section taken on line 2-2 of Fig. 1.

Fig. 3 is an exploded view of a fluid conduit and stopper means of the present invention.

Referring in greater detail to the drawings:

In Fig. 1 a milk carton, exemplifying perforable fluid containers generally, having mounted therein a pouring and stopper means of the present invention shown generally at 11, is indicated at 10. Such containers are customarily fabricated from wax or paraffin surfaced paper. The present invention is in no sense to be limited to containers of the type described, but may be employed to advantage with any suitable perforable container made from paper, cardboard, light metal or other material subject to penetration by a sharp instrument.

The draining means of the present invention comprises a hollow cylindrical tubular member, or fluid conduit, 12 having opposite end portions 13 and 14 respectively. Said tubular member has a concentric opening formed longitudinally there-through. The end portion 14 preferably has sharpened or bevelled side walls and is provided with laterally directed apertures 15. The end 13 of the tubular member is provided with a stopper seat 16. When a tubular member of cylindrical form having a concentric longitudinal opening formed therethrough is employed, no difficulty is experienced in the formation of the stopper seat 16, a clean transverse cutting of the tubular member serving to provide a suitable seat.

It is clearly evident that fluid conduits of other cross-sectional shape may be employed, as desired, and optionally provided with seats of any suitable form.

A flange 17 is radially extended from the tubular member intermediate the end portions 13 and 14 thereof. An annular member 18 of resilient material, such as soft rubber, plastic, or the like, is positioned circumjacent the tubular member 12 in abutting relation to the flange 17 on the side thereof disposed toward the sharpened end portion 14 of said tubular member. As will soon become apparent, the annular member functions as a gasket maintained by the flange 17 in abutting relation to a pierced side of the container 10.

A stopper indicated generally at 19, of wood, plastic, or other substantially rigid material, is slidably fitted to the longitudinal opening of the tubular member 12. The stopper is preferably of a length in excess of that of the tubular member and has a sharpened pilot portion 20 extended from the sharpened end portion 14 of the tubular member and a handle portion 21 on the opposite end of said stopper outwardly disposed from the tubular member. For ease in inserting the stopper and tubular member through the walls of perforable containers, the sharpened end portion 14 and the pilot portion 20 preferably are provided with continuous peripheral surfaces conveniently inserted in unitary relation through a wall of a container of the type described. The stopper is optionally provided with a truncated portion 22 adjacent to the handle portion 21 releasably seated on the stopper seat 16, as shown in section in Fig. 2. It is clearly apparent that the truncated portion of the stopper and the stopper seat are not essential to operation of the device of the present invention but useful adjuncts thereto. Without such truncated portions and seats, stoppers of the present invention may effectively plug their respective tubular member fluid conduits by being slidably fitted thereto.

Operation

The operation of the device of the present invention is clearly apparent and briefly summarized at this point. The stopper 19 is inserted through the tubular member 12 as shown in Fig. 2 and the sharpened end portion 20 of the stopper positioned at a convenient point on the container 10 desired to be pierced. When it is desired to draw cream from a milk container, the piercing point is selected to coincide with the separation line of said milk and cream, as explained in dotted line at 23 in Fig. 1. Pressure is applied to the handle portion 21 forcing the pilot portion 20 of the stopper through the wall of the container 10 until the resilient member 18 is brought into abutting relation to the pierced wall of said container. As seen in Fig. 2, the piercing of the container results in inwardly turned segments of the wall of the container, as shown at 24. Said segments resist the withdrawing of the tubular member from the container. The thrusting of the stopper and tubular member into the container forcibly draws the flange against the resilient member 18 and said resilient member against the wall of the container, in which position said tubular member is retained by the segments 24, the resilient member functioning as a gasket to preclude the leaking of fluid around the tubular member.

Once so emplaced, the stopper 19 is withdrawn from the tubular member and, said tubular member being in fluid communication with the in-

terior of the container 10, fluid therein is poured through the tubular member at will with a minimum of waste. Attention is respectfully drawn to the significance and positioning of the apertures 15. When the device of the present invention is inserted in the container, the apertures are preferably laterally directed when pouring cream or other viscous fluid. It has been discovered that when such apertures are omitted or improperly positioned, cream or other somewhat viscous fluids at the sides of the tubular member within the container tend to adhere thereto and to the walls of the container and an inefficient draining of cream from the underlying milk, or other light fluid from heavier fluid, results.

When all, or any desired quantity, of the fluid is drained from the container 10, the stopper 19 is re-inserted into the tubular member 12. In order to preclude the entering of dust or other foreign material into the container and to inhibit evaporation through the tubular member of any fluid remaining in the container, the truncated portion 22 is seated on the stopper seat 16 merely by thrusting inwardly on said stopper. Such inward thrust, when the truncated portion is driven home, results in a re-tightening of the resilient member 18 against the container 10.

The device of the present invention permits the expeditious drawing of lighter fluids from heavier fluids contained in a perforable container by the careful selection of the piercing point and draining level. The device is convenient to employ and possesses the attribute of providing convenient re-sealing of the container. The tubular member, functioning as a pouring spout, is conducive to the draining of liquid from such a container with a minimum of spilling or other waste thereof. The device is simple in structure, economical to construct and conveniently retrieved for use in combination with other such containers when it is desired to dispose of a container with which it has been employed.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention, which is not to be limited to the details disclosed herein. but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A combined pouring spout and stopper for fluid containers having perforable walls comprising a tube of substantially uniform inside diameter and outside diameter throughout its length and having open opposite end portions, a stopper slidably fitted to the tube and extended from an end thereof, the extended end of the stopper and the adjacent end of the tube being sharpened to form a tapered point, a handle mounted on the end of the stopper opposite its point and seated on the adjacent end of the tube, a flange extended radially from the tube member at a position spaced from the sharpened end thereof, the tube having opposite intake openings intermediate the flange and the sharpened end of the tube, and an annular gasket positioned about the tube and on the face of the flange disposed toward the sharpened end of the tube.

2. A combined pouring spout and stopper for fluid containers having perforable walls comprising a hollow, substantially smooth wall tube

having open opposite end portions, a stopper slidably fitted to the tube and extended from both ends thereof, one end of said stopper and its adjacent end of the tube being sharpened to form a tapered point and the opposite end of the stopper providing a handle seated on its adjacent end of the tube, and a flange radially extended from the tube at a position spaced from the sharpened end thereof, said tube having openings formed therethrough intermediate the flange and the tapered end of the tube.

FRANK D. SHERWOOD.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
757,794	Walker -----	Apr. 19, 1904
1,519,911	Graham -----	Dec. 16, 1924
1,680,815	Sorensen -----	Aug. 14, 1928
2,009,392	Demmler -----	July 30, 1935