Aug. 4, 1959 J. E. BORAH 2,898,015

POURING STREAM CONTROL FOR CONTAINER

Filed April 20, 1956 2 Sheets-Sheet 1

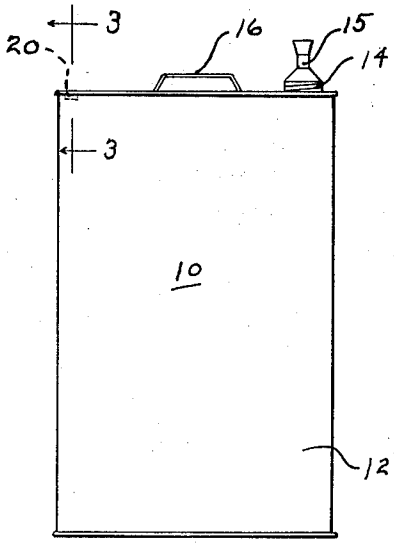


FIG. 1

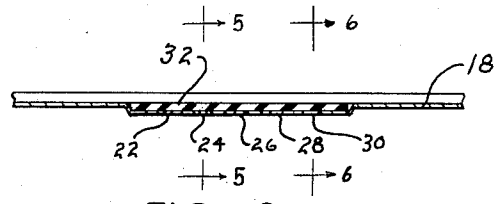


FIG. 3

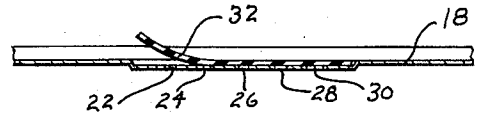


FIG. 4

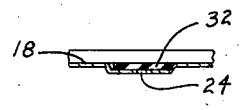


FIG. 5

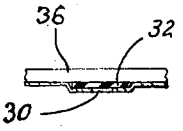


FIG. 6

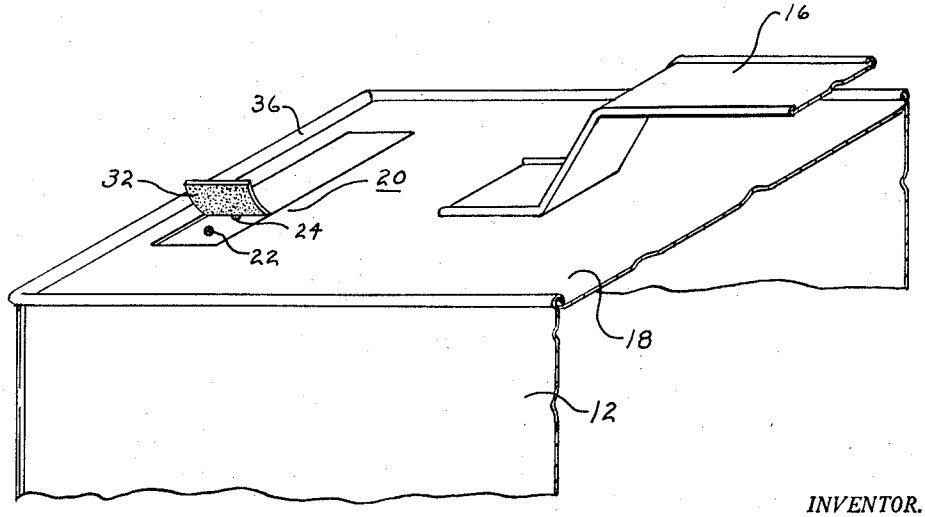


FIG. 2

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POURING STREAM CONTROL FOR CONTAINER

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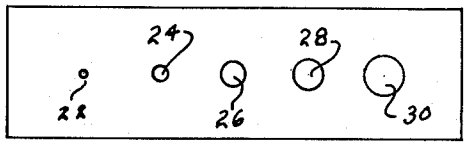


FIG. 7

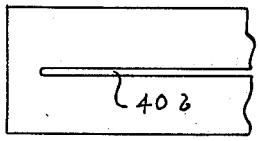


FIG. 9

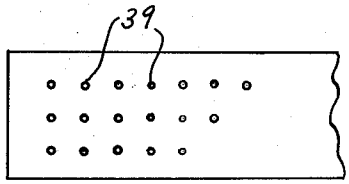


FIG. 8

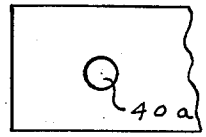


FIG. 10

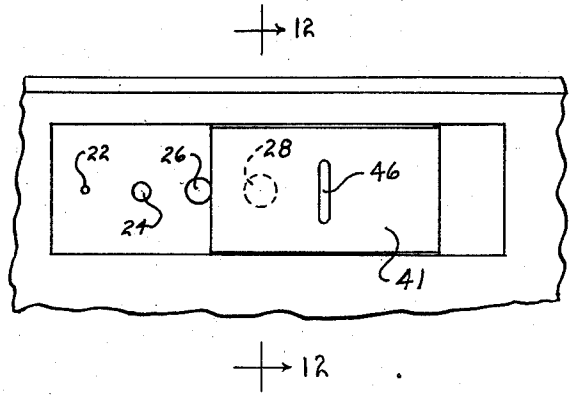


FIG. 11

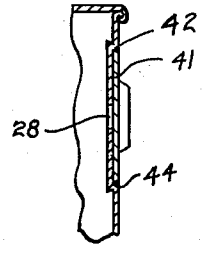


FIG. 12

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United States Patent Office 2,898,015
Patented Aug. 4, 1959

2,898,015

POURING STREAM CONTROL FOR CONTAINER

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Application April 20, 1956, Serial No. 579,496

1 Claim. (Cl. 222—484)

The present invention relates to containers and more particularly to liquid dispensers having a controlled pouring mechanism.

One of the principal objects of the present invention is to provide a liquid container from which the liquid can be poured in a uniform and controlled stream.

Another object of the present invention is to provide a can construction for liquids having in combination an elongated spout and an air bleed wherein the flow of liquid can be varied by controlling the opening of the air bleed.

Another object of the invention is to provide an air bleed construction for a liquid container which can easily be fabricated and sealed when the container is filled and which can be readily manipulated when liquid is being poured from the container to control the flow of liquid.

Still another object of the present invention is to provide an air bleed for a container having a puncture-proof and tamper-proof closure, which is so constructed that though the hole closure is made of a puncturable tape, it is so arranged it will not become damaged in transit and will not interfere with the stacking of the containers.

Another object of the invention is to provide an efficient and effective closure and seal for air-bleeding holes of a container, which requires only partial disengagement from the container when liquid is to be poured from the container and which facilitates prompt resealing of the holes when the pouring operation has been completed.

A further object of the present invention is to provide a resealable air bleed for a liquid container, which is adapted to vary the stream as the liquid is being poured from the container.

Additional objects and advantages will become apparent from the following description and the accompanying drawings, wherein:

Figure 1 is an elevational view of a container embodying my invention;

Figure 2 is a fragmentary oblique view of the container shown in Figure 1;

Figure 3 is a fragmentary cross-sectional view of the container, taken on line 3—3 of Figure 1;

Figure 4 is a view similar to that of Figure 3, showing the air bleed means in its open position;

Figure 5 is a fragmentary cross sectional view of the container taken on line 5—5 of Figure 3;

Figure 6 is a fragmentary cross sectional view of the container taken on line 6—6 of Figure 3;

Figure 7 is a top plan view of a portion of the container of Figure 1, showing details of the air bleed;

Figures 8, 9 and 10 are views similar to that of Figure 7, showing modified forms of my air bleed;

Figure 11 is a top plan view of a different embodiment of my air bleed; and

Figure 12 is a cross sectional view of the embodiment shown in Figure 11, taken on line 12—12 of said figure.

For the purpose of the present description, the container 10 shown in the drawings is in general a conventional container of the one to five gallon size normally used in the home, on the farm and around filling stations and consists of a metal container body 12 having a neck 14 forming an opening and a handle 16 secured to the top panel 18 of the container. The neck of the container is preferably provided with a fold-in spout 15 such as that disclosed and claimed in my co-pending applications Serial Nos. 520,495, filed July 7, 1955, now Patent No. 2,804,242 issued August 27, 1957, and 542,867, filed October 26, 1955. The neck 14 is normally threaded to receive a screw cap (not shown) which is applied to the neck after the spout has been folded into the neck as described in said pending applications. The spouts disclosed in the foregoing applications have been found very satisfactory and convenient in pouring liquid from the containers and in some modifications of the spout an air bleed is provided to give a uniform flow of liquid through the spout; however in order to provide a uniform and controlled flow of liquid from the container regardless of whether my spout is used with the container I have incorporated in the container construction a new type of air vent or bleed means 20 adapted not only to give an even and uniform stream from the container neck or spout but also to control the size of said stream.

The air vent means is shown in detail in Figures 2 to 7, inclusive, and consists of a series of holes graduated in size from holes 22, 24, 26, 28 to hole 30. These holes can be stamped into top panel 18 at the time the container is fabricated or they can be stamped or punched into said panel when the container is ready to be filled or at any time thereafter. Until the container is ready to be used a strip of tape 32 of plastic, rubber or rubber-like material having a coating of tacky material on the underside is placed over the holes. The tacky material securely attaches the tape to the top panel of the container and forms a liquid tight seal between the tape and panel and completely and effectively closes the holes until they are intentionally uncovered by the user when liquid is to be poured from the container. The holes are located in the panel at the end opposite the container neck so that they will be at the highest point when the liquid is being poured from the container.

Preferably the portion of the container to which tape 32 is attached is recessed so that the top surface of the tape will be flush with or below the top surface of panel 18 in order to give the tape better protection against unintentional displacement, puncturing or tearing. The tape receives further protection from the raised bead 36 around the periphery of the container since the holes are necessarily placed adjacent to the bead in order to be located at the highest point when liquid is being poured from the container. Tape 32 can be applied to the container either before or after the container has been filled.

When the contents of the container are to be removed, the cap is unscrewed from neck 14 and, if a spout 15 is used, it is placed in its distended position, as shown in Figure 1. Then tape 32 is peeled or lifted at one end from the recess and away from holes 22 to 30 starting at the end adjacent the smallest hole 22. Since the liquid can leave the container only as fast as the air replaces it, the size of the stream can be controlled by the number of holes uncovered by the user. If only a small stream is desired, for example, only hole 22 would be uncovered whereas if a large stream is desired, all five holes would be uncovered. The stream can also be varied during pouring by merely lowering or raising tape 32 to and from the holes. When the user is through pouring the contents from the container, the holes are again sealed by tape 32, recementing itself to the surface of panel 18 around the holes, to prevent contamination or evaporation of the liquid remaining in the container. The tape 32 is usually not peeled completely off or removed from the container, but preferably peeled or lifted only at one end to uncover

the desired number of holes. The other end of tape **32** remains secured to the container so that it will be available when the holes are to be resealed and hence is always handy and ready for use to close the holes.

In Figure 8 a modified arrangement of holes is illustrated. In this modified form smaller but a substantially larger number of holes **39** are used in place of the five relatively large holes in the embodiment just described. The holes in this modified form may be all the same size or they may vary in size from left to right, as viewed in Figure 8, or the number of holes in the transverse rows may increase from one row to another progressively from either end. The numerous smaller holes are sometimes more desirable than one large hole or a fewer larger holes in that there is less likelihood of foreign matter falling into the container when the holes are not covered with tape **32**. Also, when the container is being handled in the warehouse or in transit, the tape covering the small holes is not as susceptible to puncturing as the tape over the larger holes.

Further modified forms of the invention are illustrated in Figures 9 and 10, wherein single holes **40***a* and **40***b* are used in place of the plurality of holes. The elongated hole of Figure 9 preferably extends in the direction corresponding to the series arrangements of holes shown in Figure 7. The stream of liquid is controlled by raising or lowering tape **32** over slot **40***b*, leaving exposed to the atmosphere only as much of the slot as is required to provide the desired liquid stream. A single round hole **40***a* can be used satisfactorily, particularly in containers where varying the liquid stream by controlling the air bleed is not important. The single hole or slot can be recessed to provide a shallow groove for the tape, as previously described herein. In these modifications as in the embodiment previously described, tape **32** may be of plastic, rubber or rubber-like material or other fluid impervious flexible material, having a tacky underside.

In Figure 11 the hole arrangement of either Figure 7 or 8 or the slot arrangement of Figure 9 may be used, but instead of using tape **32** to close and seal the holes or slot a sliding cover **41** is employed. This embodiment is adapted primarily for containers in which the liquid being shipped prevents the tacky side of the tape from adhering to the surface of panel **18** around the holes. This cover may be constructed of metal, plastic or the like and may be secured to the container in any suitable manner so long as it can be moved to cover and uncover the holes. As shown in Figure 12, the cover is constructed of metal and is secured in the recess by overlapping flanges **42** and **44** on opposite sides of the cover. This sliding metal cover may have a smooth plastic tape attached to the side facing the holes to facilitate sliding and sealing of the cover on the panel around the holes.

With this construction the cover which is substantially shorter than the recess, can be slid to the left hand end of the recess to cover the holes and to the right hand end to uncover the number of bleed holes desired. One or more ribs **46** or the like may be provided on the top side thereof for the user to grasp as the cover is being moved. In order to protect the air bleed and to prevent cover **41** from becoming displaced during transit, a sealing strip is preferably placed over the cover and extended and cemented to the panel to completely enclose the recess, and to make the air bleed tamper-proof. A rib or bead disposed either on the underside of the cover or on the top side of the recessed portion and completely surrounding the holes when the cover is in closed position may be used in order to obtain a firmer contact and a more effective seal between said cover and the container around the air bleed holes. Further modifications in the arrangement of the bleed holes, cover and sealing means for the holes will occur to those skilled in the art and may be made without departing from the scope of the present invention. Also the holes and cover can be placed at other places on the container as, for example, at the top end of the side wall farthest from the container outlet.

I claim:

In a container having a top member and an opening near one edge of said member from which liquid is poured, a recessed portion in said top member near the edge of said member opposite said opening, said recessed portion having at least three holes arranged in a straight line and being graduated from small to large from one end of said line of holes to the other end for bleeding air into the container when liquid is being poured from the container, and a strip of tape having a tacky side removably seated in said recess and being substantially the same size as said recessed portion for closing and controlling the effective size and number of holes exposed, whereby the stream of liquid flowing from the container can be controlled by controlling the number and effective size of said holes open to the air.

References Cited in the file of this patent

UNITED STATES PATENTS

928,561	Swain	July 20, 1909
1,393,689	La Gier	Oct. 11, 1921
1,449,811	Dacey	May 27, 1923
2,173,571	Jesnig	Sept. 19, 1939
2,301,212	Jones	Nov. 10, 1942
2,606,694	Galletta	Aug. 12, 1952
2,662,670	Voight	Dec. 15, 1953
2,704,075	Cherkin	Mar. 15, 1955
2,776,787	Nicol	Jan. 8, 1957