

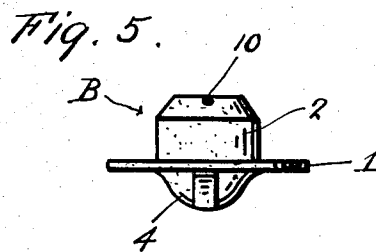
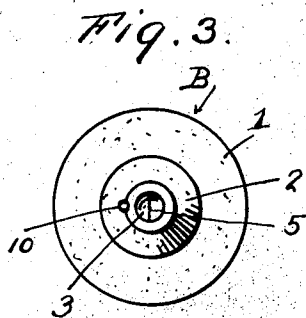
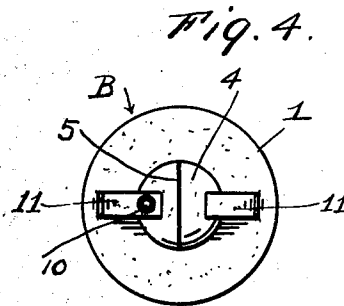
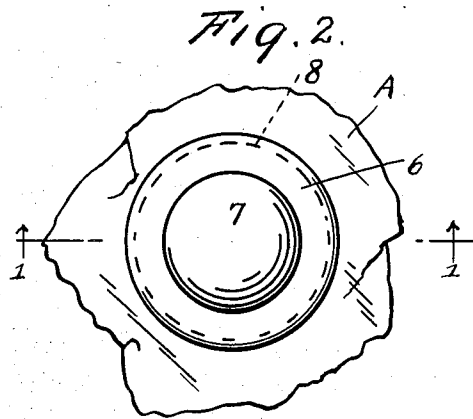
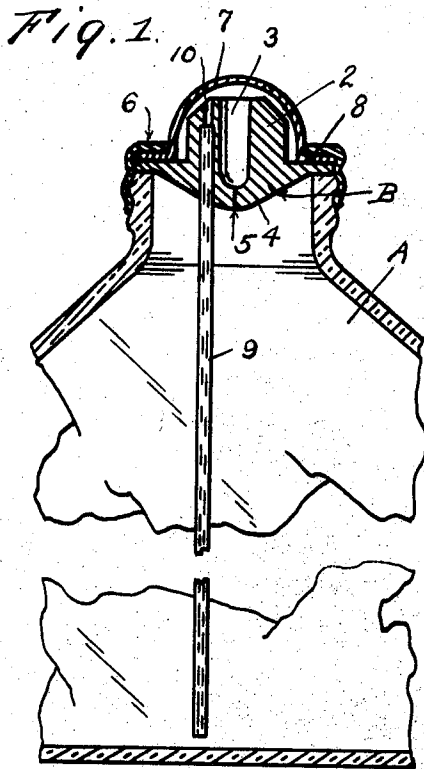
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DISPENSING DEVICE FOR LIQUID CONTAINERS

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DISPENSING DEVICE FOR LIQUID CONTAINERS

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7 Claims. (Cl. 215-74)

This invention relates to a dispensing device for liquid containers, the general object of the invention being to provide means for dispensing liquid from one container into another, with means for causing the air in the receiving container to enter the container from which the liquid is flowing so as to prevent a vacuum occurring in the last mentioned container, with means for opening a valve in the dispensing container when the two containers are placed together.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a vertical sectional view through a dispensing container showing the invention thereon, the section being taken on line 1-1 of Figure 2.

Figure 2 is a top plan view of the device shown in Figure 1.

Figure 3 is a top plan view of the dispensing device.

Figure 4 is a bottom plan view thereof.

Figure 5 is a side view thereof.

In the drawing the container in which the liquid is to be contained is shown at A, is made in the form of a bottle and the dispensing device is shown at B. This device is formed of rubber or the like and is provided with a flange 1 for engaging the mouth of the bottle and with a central enlargement 2 on its upper face having a recess 3 therein which extends into a rounded enlargement 4 formed at the lower end of the device. The bottom of the recess is spaced from the bottom face of the enlargement 4 but a slit 5 is formed in the part 4 and passes through the bottom wall of the recess, which is preferably rounded as shown. A pair of ribs 11 is formed on the underside of the device B, one on each side of the slit. These ribs extend at right angles to the slit from a point on the enlargement 4 adjacent the slit outwardly to a point slightly spaced inwardly from edge of the flange 1 as is shown in Figure 4. The resiliency of the device holds the slit closed, as shown in Figure 1, but when the enlargement 2 is forced inwardly, when the flange 1 is clamped between the bottle neck and the cap 6, the inner or lower part of the device B will be stretched, causing the walls of the slit to spread apart and this spreading apart of the walls of the slit is facilitated by the ribs which resist the inward movement of the parts

2 and 4. There is no actual distortion of the part 2 in the sense that its shape changes, but the movement of the part 2 inwardly or upwardly, when the bottle is inverted, and pressure applied on the part 2, will cause this opening of the slit. When the container is inverted the pressure of the liquid against the bottom of the device will hold the slit closed so that no liquid will escape when the container is in inverted position. The device is removably held on the top of the bottle by a screw cap 6 having an opening in the top part through which the enlargement 2 passes and during shipment or when the device is not in use I provide a shield 7 having a flange 8 which is held against the flange 1 of the device by the cap.

A tube 9 of glass or the like is placed in an opening 10 of the device on one side of the socket or recess 3 and extends close to the bottom of the container.

When the device is to be used the shield 7 is removed and the bottle is inverted and the container which is to receive some of the contents of the bottle A has its mouth portion pressed over the enlargement 2. This will cause upward movement of the parts 2 and 4 which will result in the opening of the slit, as before described, so that some of the contents of the bottle will flow through the device into the container and the air in the container will flow up the tube 9 and thus take the place of the liquid flowing from the bottle.

This will prevent sputtering or leaking of liquid around the opening of the receiving container and it also stops the flow of liquid from the container A when the receiving container is filled.

As will be seen the device acts as a valve operated by diaphragm action, opening under the action of pressure and closing automatically when the pressure is released. It automatically stops the flow of liquid when the receiving container is full and it will empty the dispensing container completely. Increased pressure or an increased amount of liquid in the dispensing container serves to close the valve more securely.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

1. A dispensing device for facilitating the dispensing of a liquid from one container into another comprising a member formed of resilient

material, means for securing the member over the mouth of a dispensing container, said member having a recessed enlargement on its outer face engageable with the mouth of a receiving container so as to discharge therein when the recess is communicated with the interior of the dispensing container, said member having a slit therein extending from the face exposed within the dispensing container into the recess, said slit opening for communicating the recess with the interior of the dispensing container when said enlargement is moved inwardly of the dispensing container.

2. A dispensing device for facilitating the dispensing of liquid from one container into another comprising a member formed of resilient material, means for securing the member over the mouth of a dispensing container, said member having a recessed enlargement on its outer face engageable with the mouth of a receiving container so as to discharge therein when the recess is communicated with the interior of the dispensing container, said member having a slit therein extending from the face disposed within the dispensing container into the recess, said slit opening and communicating the recess with the interior of the dispensing container when said enlargement is moved inwardly of the dispensing container, and a vent tube having one end passing through the member and its other end located above the level of the liquid in the dispensing container when the dispensing container is in the dispensing position.

3. A dispensing device for facilitating the dispensing of liquid from one container to another comprising a member formed of resilient material, means for securing the member over the mouth of a dispensing container, said member having a recessed enlargement on its outer face engageable with the mouth of a receiving container so as to discharge therein when the recess is communicated with the interior of the dispensing container, said member having a slit therein extending from the face disposed within the dispensing container into the recess, said slit opening for communicating the interior of the dispensing container and the recess when said enlargement is moved inwardly of the dispensing container by pressure against said enlargement, a vent tube having one end passing through the member and its other end located above the level of the liquid in the dispensing container when the dispensing container is in the dispensing position, and a shield cap covering the outwardly disposed portions of the device and detachably connected to the container.

4. A dispensing device comprising a member formed of resilient material and having a flange adapted to be connected to a dispensing container, said member having at its outer face an enlargement of less diameter than the flange, said enlargement having a recess extending inwardly from its outer end, a second enlargement on the inner face of the member having a slit therein communicating with the inner end of the recess, and a pair of ribs on the inner face of the member, one on each side of the slit and extending at right angles from the slit, said slit opening when the first mentioned enlargement is moved inwardly.

5. A check valve device for sealing fluid in a container comprising a member formed of resilient material and having a flange adapted to be connected to a container for fluid, said member hav-

ing at its outer end an enlargement of less diameter than the flange, said enlargement having a recess extending inwardly from its outer end, a second enlargement on the inner face of the member, said second enlargement having a slit therein communicating with the inner end of the recess, said slit being of such length as to open when the first mentioned enlargement is forced inwardly and said slit closing when the first mentioned enlargement is released, the pressure on the second enlargement within the container holding the slit closed for sealing the fluid in the container.

6. A dispensing device comprising a member formed of resilient material and having a flange adapted to be connected to a dispensing container for fluid, said member having a recessed enlargement on its outer face engageable with the mouth of a receiving container so as to discharge fluid therein when the recess is communicated with the interior of the dispensing container, said member having a slit therein extending from the face exposed within the dispensing container into the recess and opening for communicating the recess with the interior of the dispensing container when said enlargement is moved inwardly by pressure thereagainst, means on the outer enlargement for effecting sealing engagement with the mouth of a receiving container when the receiving container is forced axially thereagainst with the mouth in engagement with said enlargement, a vent duct extending through the member and communicating at one end with the interior of the dispensing container above the level of the fluid therein when the dispensing container is in dispensing position, the other end of the duct being positioned to communicate with the mouth of the receiving container above the level of the fluid in the receiving container when the receiving container is in said sealing engagement, whereby air displaced by entry of fluid into the receiving container is discharged freely through the duct into the dispensing container and a free flow of fluid from the dispensing container into the receiving container, unimpeded by the displaced air, is effected.

7. A dispensing device for facilitating the dispensing of liquid from a dispensing container into a receiving container, comprising a member formed of resilient material, means for securing the member over the mouth of the dispensing container, said member having a protuberant portion on the face disposed inwardly of the dispensing container, said portion having a slit therein extending inwardly of the member from the surface of the protuberant portion disposed within the dispensing container, said slit normally being closed to block the passage of fluid there-through, said member having a portion exposed on the outer face for engagement with the mouth of a receiving container, a recess in said member communicating at one end with the slit and at the other end with the atmosphere within the lateral limits of said outer exposed portion in position for discharging into the mouth of the receiving container when the mouth of the receiving container is forced axially against said outer exposed portion, said slit opening for communicating the recess with the interior of the dispensing container when said outer portion is forced inwardly of the dispensing container by inwardly directed pressure thereagainst.

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