

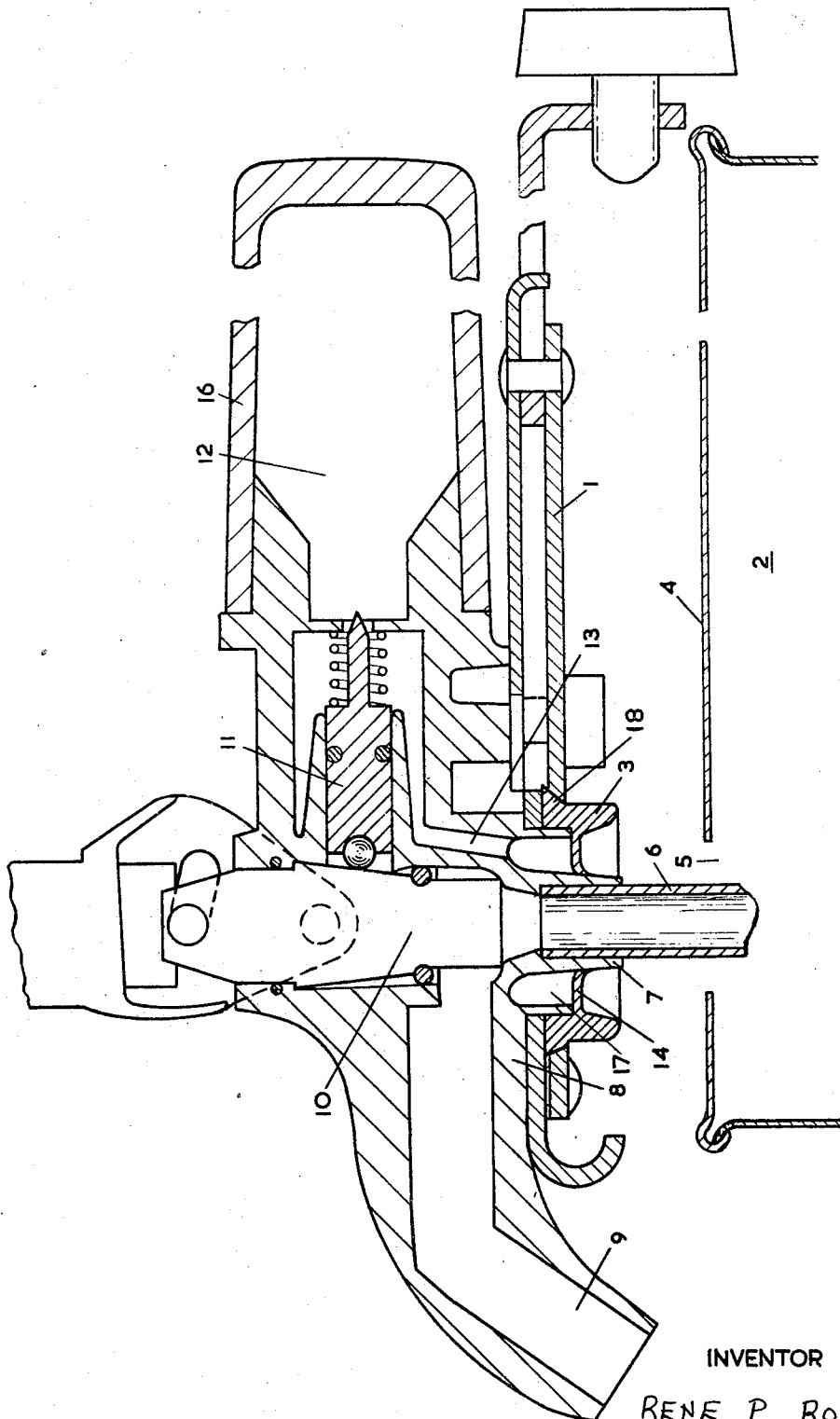
May 12, 1970

R. P. ROUSSET

3,511,417

LIQUID DISPENSING DEVICES

Filed Feb. 16, 1968



INVENTOR

RENE P ROUSSET

BY *Townsend & Mercede*

ATTORNEYS

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LIQUID DISPENSING DEVICES

Rene P. Rousset, Potters Bar, England, assignor to The British Oxygen Company Limited, a British company

Filed Feb. 16, 1968, Ser. No. 706,118

Claims priority, application Great Britain, Mar. 1, 1967, 9,752/67

Int. Cl. B65d 83/14

U.S. Cl. 222—399

2 Claims

ABSTRACT OF THE DISCLOSURE

A device for dispensing liquids from containers introduces gas under pressure into the space above the liquid to force liquid up a tube. Immediately before entering the container the gas passes through a valve of resilient material. The valve prevents dispensed or washing liquid from entering and corroding the interior of the device.

CROSS-REFERENCE TO RELATED APPLICATION

The device of this invention is disclosed generally in U.S. Ser. No. 525,023, filed on Feb. 4, 1966, by P. R. Rousset et al.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to dispensing devices adapted to be temporarily attached to a container to dispense the liquid contents from the container under the pressure of gas introduced into the space above the liquid.

Description of the prior art

A simple known dispensing device of this type includes a sealing ring arranged in use to enclose an aperture in the container to create a fluid-tight joint between the container and dispenser; a tube which is arranged to extend through the aperture and up which liquid is forced from the container by gas pressure, and a gas passage through which gas under pressure can enter the container.

SUMMARY OF THE INVENTION

By using a resilient valve liquid cannot enter the device interior. However should excess pressure be generated in the container the valve can open to vent gas into the device, from which it can escape through a pressure-relief valve.

BRIEF DESCRIPTION OF THE DRAWING

The invention will now be described by way of example with reference to the accompanying drawing, which is an axial section of a dispensing device adapted to be clamped to the top wall of a can of beer or other liquid.

The dispensing device includes a strap 1 which is adapted to be clamped to a can 2 containing beer or other liquid so that it extends substantially across a diameter of the top wall 4 of the can. A sealing ring 3 forming part of the dispensing device is of elastomeric material and forms a fluid-tight seal with the outer surface of the wall 4 enclosing a preformed orifice 5 in wall 4. The device includes an outlet tube 6 which is adapted to extend through orifice 5 to the bottom of the can 2. The upper end of the outlet tube 6 is mounted in a fluid-tight manner in a tubular socket 7 formed in the body 8 of the dispensing device, and it communicates with an outlet spout 9 when a manually-operated delivery valve member 10 is raised.

A plunger 11 is arranged to be moved by movement of valve member 10 so as to function as a gas valve to release gas from a bulb (not shown) containing compressed

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gas and retained in a recess 12 forming part of the device by a retainer member 16. After gas passes from the punctured seal of the bulb through the gap between it and the pointed end of the plunger 11, it flows through a passage 13 in the body 8 to an annular chamber 17 formed by a recess in the body 8, the recess being closed by an inwardly-directed flange 14 which is integral with the ring 3.

The ring 3 is of elastomeric material and includes a frusto-conical shoulder portion 18 gripped between two components of the strap 1, which when secured to the body 8 compresses ring 3 to provide a fluid-tight joint between it and the outer wall of chamber 17. The body 8 has a hollow projection 7 which acts as a socket for the tube 6 and which forms the inner wall of chamber 17. The socket 7 projects through the central circular aperture in the flange 14 and is of larger diameter so that the inner edge of the flange is bent outwardly, as illustrated, where it contacts the socket 7.

The resilience or elasticity of the flange 14 and the amount of friction between the flange 14 and socket 7 are chosen so that when the gas pressure in chamber 17 exceeds by a chosen amount the pressure in can 2, the flange 14 is deformed outwardly of the chamber 17 until at least one gap is formed between the inner edge of the flange and the socket 7, through which gap gas under pressure escapes and passes into the interior of the can 2 through the annular gap formed between the outside surface of the socket 7 and the edge of the orifice 5.

Conversely, when the pressure in can 2 exceeds by a chosen amount the pressure in chamber 17 (as can happen under certain unusual conditions) the pressure in the can is relieved by the flange 14 becoming inverted and allowing gas to enter chamber 17. Although not shown in the drawing, the chamber 17 is vented by a pressure-relief valve which is thus effective to limit to acceptable levels the pressures in both passage 13 and can 2.

When the differential gas pressure across the flange is reduced to a sufficiently-low value the flange returns the action of its own resilience into sealing engagement with socket 7. This seal is necessary when the dispensing device is mounted in position on the can, in order to prevent the beer or other liquid in the can from passing into chamber 17 and then through passage 13 to the mechanism for opening and sealing the bulb containing gas, should the can be shaken or tilted. It is also necessary when the device is detached from the can, for the flange 14 prevents any washing liquid from similarly entering the chamber 17.

Although the flange has been stated as being integral with the sealing ring 3, more than one member of elastomeric material may be provided so that in combination they perform the dual functions of sealing the dispensing device to a wall of a container, and of sealing the gas passage 13 against the entry of liquids from externally of flange 14.

What is claimed is:

1. A device for dispensing a liquid from a container, including a hollow socket for receiving, or which is integral with, a delivery tube adapted to extend through an opening in a wall of a container with which the device may be associated in service; a sealing ring encircling the socket or tube for engaging the adjacent surface of a container to make a fluid tight seal therewith; there being a space between the socket or tube and the sealing ring in communication with a source of gas under pressure, which source includes a plunger for piercing a disposable bulb of compressed gas secured in place relative to the plunger; said delivery tube being in communication through the hollow socket with a manually operable delivery valve that has an outlet spout extending there-

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from; said delivery valve including a sloping surface engageable by a follower on said plunger of the source of gas under pressure, whereby opening movement of the delivery valve is effective to retract the plunger from the bulb to enable gas to flow from the bulb to the interior of the container; a passage in communication with said space between the socket or tube and the sealing ring and with said source of gas under pressure; and a valve of resilient material positioned in the passage to permit gas to flow from the source to the interior of the container only when the pressure differential across the resilient material valve from the source to the container is greater than a chosen level, and to permit gas to flow from the container into the device when the pressure differential is reversed and is greater than a chosen level.

2. The device claimed in claim 1 mounted on a strap adapted to be secured to a flat-ended container so that the strap extends substantially parallel with the flat end and with the socket of the device aligned with an opening in the flat end.

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ROBERT B. REEVES, Primary Examiner

H. S. LANE, Assistant Examiner

U.S. Cl. X.R.

222—400.7