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MEANS FOR FORCING LIQUID FROM BARRELS
AND SAFETY DEVICES THEREFOR
Filed May 17, 1968

FIG. 1.

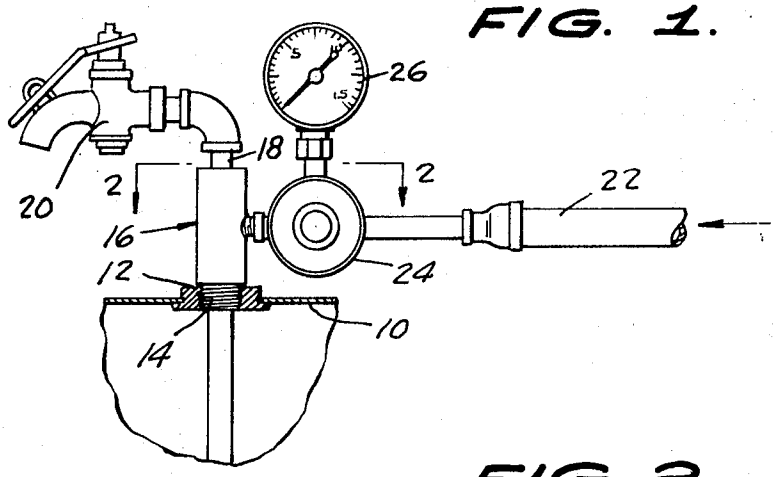


FIG. 2.

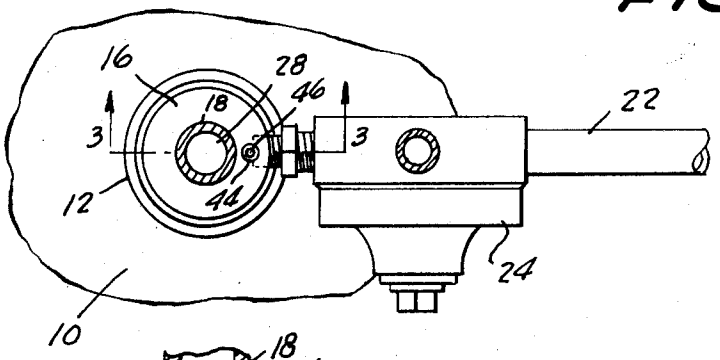
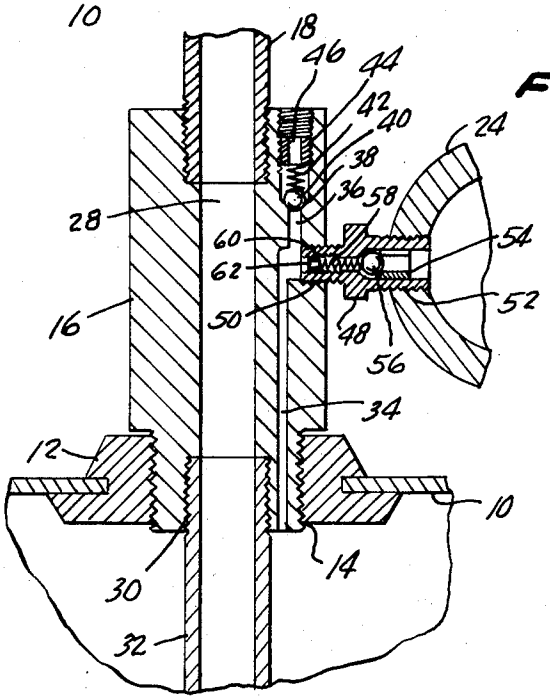


FIG. 3.



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MEANS FOR FORCING LIQUID FROM BARRELS AND SAFETY DEVICES THEREFOR

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U.S. Cl. 137—212 1 Claim

ABSTRACT OF THE DISCLOSURE

A barrel; a tubular body secured to said barrel; a tube aligned with said body and entering said barrel; dispensing means connected with said body; a source of controlled gas pressure connected to said body; a duct in said body connected to said source of pressure, said duct extending from the external atmosphere to the interior of said barrel; a check valve between said duct and said pressure source and a relief valve between said duct and the atmosphere.

This invention relates to means for drawing liquid from a barrel under a constantly maintained pressure head with certain safety features which make it impossible to overpressurize the interior of the barrel and also are operative to eliminate any possibility of pressure failure due to surges or pressure drops in the pressure supply system.

The above and other objects will be made clear from the following detailed description taken in connection with the annexed drawings in which:

FIG. 1 is a side elevation partly in section of the device applied to a barrel;

FIG. 2 is a top elevation partly in section, taken on the line 2—2 of FIG. 1; and

FIG. 3 is a section on the line 3—3 of FIG. 2.

Referring now to FIG. 1, there is shown a barrel **10** to which is secured a conventional screw threaded bung **12**. The bung **12** receives external screw threads **14** formed on a cylindrical tubular body **16**. The body **16** is connected by a pipe **18** to a conventional dispensing spigot **20**.

A line **22** delivers air or other gas under pressure to a conventional pressure regulator **24**, which carries a gauge **26** to indicate the pressure effective within the barrel **10**.

In most cases, air pressure from any conventional source will be used. If, however, the contents of the barrel were beer, the line **22** would carry carbon dioxide under pressure or if the contents of the barrel were readily oxidizable, either carbon dioxide or nitrogen would be supplied through the line **22**.

The body **16** has also formed in it a gas passage **34**, which passes through the bung **12** to communicate with the interior of the barrel **10** and supply a pressure which will force liquid upwardly through the pipe **32**, passage **28** and pipe **18**.

A relief passage **36** is also formed in the body **16** and connects with the passage **34**. At its upper end, the passage **36** has a valve seat **38** formed to receive a ball-type relief valve **40**. A spring **42** bears on the valve **40** and a plug **44** has threaded engagement with the upper end of the passage **36** and thereby regulates tension on spring **42**. The plug **44** has a duct **46** communicating with the atmosphere. These parts constitute a safety or relief valve to prevent overpressurization of the interior of the barrel **10**.

The controller **24** is joined to the body **16** by a nipple generally designated **48**, which has a reduced portion **50** in threaded engagement with a transverse opening in the body **16** and with a larger opposite end **52** in threaded engagement with an opening in the controller **24**. A sleeve **54** is fitted into the portion **52** and forms a valve seat for a ball valve **56** which is biased by a spring **58** toward the seat defined by the sleeve **54**. The spring **58** bears on an insert **60**, threaded into the portion **50** of the nipple **48**. The member **60** has a central aperture **62**, providing communication between the controller **24** and the gas duct **34** of the member **16**. The purpose of this arrangement is to protect against a sudden drop of pressure in the line **22** or in the controller **24**. If such a pressure drop occurs, pressure inside the barrel **10**, assisted by the spring **58**, seats the ball **56** in the sleeve **54** blocking communication between the member **16** and the controller **24**. As liquid flows out of the barrel, pressure drops above the liquid level. The pressure in the controller **24** then overcomes the spring **58** and pressure in the barrel is restored to the predetermined proper level. It is clear, therefore, that with the relief valve and the check valve, either over or under, pressure within the barrel **10** is effectively prevented.

No doubt, the foregoing description will suggest to those skilled in the art various rearrangements of the parts and design. For example, the term "barrel" includes drums, tanks, or other containers. It is not intended, therefore, to limit this invention to the precise details as disclosed, but only as set forth in the subjoined claim.

I claim:

1. Means to discharge liquid contents from a barrel, said means comprising a tubular body externally threaded at one end for attachment to a bung in a barrel and internally threaded at the same end for attachment to a tube extending into said barrel, the opposite end of said body being threaded for attachment to a dispensing means; a source of controlled gas pressure connected to said body; said body having parallel, mutually radially off-set ducts extending axially from each end thereof; a radially directed duct intersecting both of said axial ducts, the outer portion of said radial duct being threaded, a nipple engaging said threaded portion, said nipple containing a check valve and having means connecting said nipple to said source of controlled pressure; the upper end of the uppermost of said axial ducts being threaded and containing an internal pressure relief valve.

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ALAN COHAN, Primary Examiner

U.S. Cl. X.R.

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