DISPENSOR FOR VINTAGE WINES

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ABSTRACT

The invention comprises a device for removing small volumes of wine or the like from a cork sealed bottle while maintaining an inert atmosphere always in contact with the wine so that it will not be necessary to consume the entire contents of the bottle. The device includes a cork piercing body which fits over the neck of the bottle and includes a needle which passes through the cork, in combination with a liquid delivery member which will supply pressure to one chamber in the needle and allow extraction of a liquid through another chamber in the needle. The device can further include, in combination, a lid for sealing over the body when the delivery member is not in place. A single delivery member can be used along with a plurality of cork piercing bodies and lids whereby the user can have a number of bottles of wines open at the same time without spoilage occurring.

9 Claims, 6 Drawing Figures
DISPENSOR FOR VINTAGE WINES

BACKGROUND OF THE INVENTION

The invention relates to the art of removing a liquid from a sealed bottle while protecting the contents of the bottle from contact with possibly deleterious vapors. In particular, the invention deals with removing wine from a corked wine bottle while excluding air from the bottle and keeping an inert gas in contact with the wine that is within the bottle.

PRIOR ART

The prior art discloses a number of devices useful for dispensing a liquid from a sealed bottle such as a wine bottle having a cork in place. Of particular interest in this regard is U.S. Pat. No. Re. 12,200 issued to J. A. Sherrard. The prior art does not however show a device useful for dispensing a liquid from a sealed bottle which comprises in combination a seal traversing body and a liquid delivery member which is detachably sealable to the seal traversing body and wherein a pressurized inert gas held within a cavity within the liquid delivery member is controllably deliverable to the interior of the bottle from which the liquid is being dispensed. Also not taught by the prior art is the provision of a lid which will fit over the seal traversing body in place of the liquid delivery member and which prevents atmospheric air or the like from entering the bottle when the liquid delivery member is not in place and which prevents leakage of liquid when the bottle is stored on its side.

Since the liquid delivery member is detachably sealable to the seal traversing body, a single relatively expensive liquid delivery member can be used to deliver liquid, e.g., wine, from a number of different bottles by simply inserting a number of seal traversing bodies, one in each of the bottles. This feature is also not disclosed in the prior art. Each of the bottles not in use can have a lid put in place over the seal traversing body to prevent the entry of air or the like into the not in use bottles. This is yet another novel feature of the invention.

In the case of wine bottles, it is well known that in the absence of preservatives which can deleteriously affect the taste of the wine, the wine will spoil through aerobic microorganismic action if exposed to air. Thus, when one is drinking an expensive wine, it is necessary that the entire bottle be finished at a single sitting or at least within a day or so after opening to prevent spoilage of the wine. It is also desirable to be able to dispense the wine without unduly agitating the contents of the wine bottle so that sediment near the bottom of the bottle will not pass into the wine glass. It is further desirable that the cork of a wine bottle be exposed to air so that controlled aging of the wine can occur. A relatively inexpensive and convenient device for dispensing wine from wine bottles while at all times keeping the wine bottles substantially free from contamination with air, which device, does not unduly agitate the contents of the bottles, would thus be highly desirable. The present invention provides just such a device.

SUMMARY OF THE INVENTION

The invention comprises a device useful for dispensing a liquid from a sealed bottle without unduly agitating the liquid contained in the bottle while maintaining a desired gas in contact with the liquid to the exclusion of undesirable vapors, the device being operable to dispense liquid from the bottle, comprising:

A. A seal traversing body, comprising: a cap adapted to fit over the neck of the sealed bottle; a tube, one end of which passes through the bottom of the cap, said one end being adapted to pass through the seal of the bottle, said one end of said tube being adapted to terminate within said bottle, said tube being adapted to introduce a flow of gas into the bottle; and a pipe having one end insertable through the seal of the bottle for conducting a flow of liquid from within the sealed bottle through the seal of the bottle and through the cap to the outside of the bottle; in combination with:

B. A liquid delivery member detachably sealable in abutting relation to said cap, said member comprising: a body having a cavity adapted to hold a gas filled pressurized vessel, said body having a passage therethrough establishing gas flow connection at one end of said passage with said vessel and at the other end of said passage with said other end of said tube, said body also having an outlet tunnel therethrough establishing liquid flow connection from the other end of said pipe to the exterior of said body; and a flow control valve communicating the interior of said vessel with the one end of said passage.

The device of the present invention preferably includes a lid which is detachably sealable to said cap when said member is not sealed to said cap, said lid serving to prevent air from entering the bottle via the tube and the pipe.

Generally the member is twistably detachably sealable to the cap and the body preferably includes means for maintaining connection in gas flow relationship between the other end of the passage and the other end of the tube through 360° rotation of the cap relative to the neck of the bottle and means for maintaining connection in liquid flow relationship between the other end of the pipe and the end of the tunnel nearest the cap through 360° rotation of the cap relative to the neck of the bottle.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood by reference to the drawings which are hereby incorporated herein by reference thereto and in which like numbers denote like parts throughout, and wherein:

FIG. 1 illustrates in a perspective view one embodiment of the device of the present invention;

FIG. 2 illustrates a side partial cross-section taken along the line 2—2 of FIG. 1;

FIG. 3 illustrates a partial cut-away section taken along the line 3—3 of FIG. 2;

FIG. 4 illustrates a cut-away view taken along the line 4—4 of FIG. 2;

FIG. 5 illustrates an alternative embodiment of the invention in a side cross-sectional view; and

FIG. 6 illustrates a lid useful with both illustrated embodiments of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1-6 illustrate the preferred embodiments of the invention. Referring first to FIG. 1, there are shown generally a seal traversing body 1 and a liquid delivery member 5. Also shown is a removable cartridge holder 9 and a pressure release handle 13. Atop the liquid delivery member 5 is a hole 17 through which liquid can flow.
FIG. 2 is a partial cutaway view taken through the line 2—2 of FIG. 1. The seal traversing body 1 can be seen to include a cap portion 21. The seal traversing body 1 further includes a tube 25 extending through the cap 21, one end 29 of the tube 25 extending beyond the bottom of the cap 21 and being adapted to pass through the seal 33 of the bottle 37. In the embodiments illustrated in FIGS. 2 and 5, the seal 33 is a common cork stopper for a wine bottle. The tube 25 is adapted to introduce a flow of gas into the bottle 37. The seal traversing body 1 also includes a pipe 41. One end 45 of the pipe 41 extends beyond the bottom of the cap 21 and is insertable through the seal 33 of the bottle 37. The tube 25 and the pipe 41, when they pass through the seal 33 are adapted to form a generally gas-tight fit with the seal 33. The end 29 of the tube 25 and the end 45 of the pipe 41, as shown in FIG. 5, when in place through the seal 33 of the bottle 37, each preferably end above the normal liquid level 49 of the liquid 53 in the bottle 37, when the bottle 37 is standing in an upright vertical position. The one end 29 of the tube 25 extending below the seal 33 in the bottle 37 and the one end 45 of the pipe 41 similarly extending each have openings therein as illustrated in FIG. 5 to complete communication with the interior of the bottle 37.

The cap 21 of the seal traversing body 1 has threads 57 which mate with the threads 61 on liquid delivery member 5 or with the threads 65 upon lid 69.

The liquid delivery member 5 has a passage 73 passing therethrough establishing gas flow connection at one end 77 of the passage 73 with a gas filled pressurized vessel 81. An inert gas such as nitrogen is especially useful in preventing spoilage of wine. The other end 85 of the passage 73 communicates with the other end 89 of the tube 25.

Also passing through the liquid delivery member 5 is an outlet tunnel 93 which establishes liquid flow connection from the other end 97 of the pipe 41 to the hole 17 by which liquid is dispensed.

The sealing of the cap 21 of seal traversing body 1 to the liquid delivery member 5 is aided by use of a resilient D-ring 101 in the recess 105 as illustrated in FIG. 2 or by resilient annular gaskets 109 as illustrated in FIG. 5.

FIGS. 3 and 4, which are partial section and section views respectively taken along the lines 3—3 and 4—4 respectively of FIG. 2, illustrate how flow connection is maintained between passage 73 and tube 25 and between tunnel 93 and pipe 41 and how this flow connection is unaffected by the position of rotation of the liquid delivery member 5 about the seal traversing body 1. The annular channel 113 in the liquid delivery member 5 clearly must contact the other end 97 of the pipe 41 through all positions of rotation of the liquid delivery member 5 about the seal traversing body 1. Similarly the other end 89 of the tube 25 is always maintained in flow connection with the other end 85 of the passage 73 through 360° of rotation of the liquid delivery member 5 about the seal traversing body 1.

Referring particularly to FIG. 5 an embodiment of the invention is illustrated in which the tube 25 is in flow communication at its other end 89 with an annular channel 117, the annular channel 117 also being in flow connection with the other end 85 of the passage 73. In this embodiment, the other end 97 of the pipe 41 is in flow connection with the outlet tunnel 93. Clearly in this embodiment also liquid flow and gas flow connection are maintained through a 360° rotation of the liquid delivery member 5 about the seal traversing body 1.

Gas from the pressurized vessel 81, e.g., nitrogen gas, is introduced through the passage 73 and the tube 25 when the ball 121 is displaced downwardly into the chamber 125. This is accomplished by either pushing or pulling upon the handle 13. When the handle 13 is pushed towards the liquid delivery member 5 the handle 13 is thereby rotated about the pivot point 129 whereby the flat portion 133 of the pad 137, which is attached to the handle 13, forces the vessel 81 upwardly against the spring 141. The one end 77 of the passage 73 which itself is motionless thus serves to force the ball 121 downwardly into the chamber 125 and gas escapes from the vessel 81 around the ball 121 and up through the passage 73. When the handle 13 is pulled away from the liquid delivery member 5, the pad 137 is similarly pivoted about the pivot point 145 with a like result. The gasket 149 fits tightly against the neck of the vessel 81 to insure that gas escaping from the vessel 81 travels through the passage 73. The gasket 149 also serves to support the spring 141. The ball 121 thus serves as a flow control valve communicating the interior of the vessel 81 with the one end 77 of the passage 73.

The vessel 81 thus fits within a cavity within the cartridge holder 9. The cartridge holder 9 is detachably attachable via the threads 153 adjacent the top thereof to the threads 157 on the liquid delivery member 5. Thus new pressure vessels 81 can be inserted within the cartridge holder 9 or depleted vessels 81 can be removed from the cartridge holder 9 recharged with inert gas and then replaced in the cavity in the cartridge holder 9.

FIG. 6 illustrates a lid 69 which is detachably attachable to the cap 21 when the liquid delivery member 5 is not attachable thereto. The lid 69 includes a recess 161 in which a D-Ring 165 fits. When the lid 69 is in place on the cap 21, air is prevented from entering the bottle 37.

As will be noted from both FIG. 2 and FIG. 5, the top 169 of the bottle 37 contacts both the cap 21 and the skirt 173 of the seal traversing body 1. With wine bottles the skirt 173 is generally proportioned sufficiently large so that air can contact the stopper 33, generally a cork, by passing around the top 169 of the bottle 37. This allows the wine to continue aging although some of the wine in the bottle may have been sampled. The skirt 173 of the field traversing body 1 is desirable in that it aids the user in correctly inserting the needle 177 which in the preferred embodiments of the invention includes both the tube 25 and the pipe 41. The use of a single needle 177 which includes both the tube 25 and the pipe 41 is advantageous in that only one hole is made through the seal 33 of the bottle 37 and a twisting motion can be used to aid in inserting the needle 177 through the seal 33.

In operation, a single liquid delivery member 5 can obviously be used with any number of seal traversing bodies 1 and with any number of lids 69. Thus several wine bottles can be "tapped" and yet the wine therein can be maintained completely free from spoilage. Also since the liquid delivery member 5 can be used with a number of different bottles of wine, the expense of the user is minimized since the most expensive portion of the entire combination is the liquid delivery member 5.
To dispense a liquid, for example, wine, from the preferred device of the present invention, the bottle is tilted so that the tip of the needle 177 is below the surface of the liquid within the bottle. The operator then either presses or pulls the handle 13 whereby pressurized gas passes through the passage 73, the tube 25 and into the bottle 37. As pressure is released into the bottle 37 from the tube 25, liquid is forced to flow through the pipe 41 and the tunnel 93 and then out the hole 17 and into a waiting receptacle. Because of the free flow characteristics of gas and liquid significant pressure does not build up within the bottle 37. It will be apparent that the gas which enters into the bottle 37 will bubble only through a small portion of the liquid 53 therein in the preferred embodiment of the invention. This prevents the liquid 53 from being unduly agitated whereby any particular matter in the bottom of the bottle 37, for example, the solid matter which settles out of wine as it ages, will not be stirred up and mixed with the wine which is being dispensed. Flow out of the bottles can be immediately stopped by simply tilting the bottle back to the vertical since then any gas which may still be escaping from the vessel 81 will simply proceed up the pipe 41 and through the outlet tunnel 93.

While the invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modification, and this application is intended to cover any variations, uses or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains and as may be applied to the essential features hereinafter set forth, and as fall within the scope of the invention and the limits of the appended claims.

That which is claimed is:

1. A device useful for dispensing a liquid from a sealed bottle without unduly agitating the liquid contained in the bottle while maintaining a desired gas in contact with the liquid to the exclusion of undesired vapors, the device being operable to dispense liquid, comprising:

A. A seal traversing body separately attachable over the neck of the sealed bottle, comprising:

a. a cap adapted to fit over and encompass the neck of the sealed bottle; means for piercing through the seal of the bottle, said piercing means including a tube and a pipe each extending through said cap, one end of said tube and one end of said pipe extending beyond the bottom of the cap, said one end of said tube and said one end of said pipe being insertable through the seal of the bottle, said one end being adapted to terminate within the bottle and each terminating above the normal liquid level therein, said tube being adapted to introduce a flow of gas into the bottle and said pipe adapted to conduct a flow of liquid from within the sealed bottle through the seal of the bottle and through the cap to the outside of the bottle; in combination with:

B. a liquid delivery member sealable in a readily attachable and detachable manner by a twisting motion in aligned and abutting relation to said cap after said seal traversing body is attached over the neck of said sealed bottle, said member comprising:

a second body having a cavity adapted to hold a gas filled pressurized vessel, said second body having a passage therethrough establishing a sealed gas flow connection at one end of said passage with said vessel and aligned at the other end of said passage through 360° of rotation of said member relative to said body with said other end of said tube, said second body also having an outlet tunnel therethrough aligned to establish liquid flow connection through 360° rotation of said member relative to said seat traversing body from the other end of said pipe to the exterior of said bottle; and

a flow control valve communicating the interior of said vessel with said passage.

2. A device as in claim 1, wherein said tube passes centrally through said cap and said seal, said passage-tube connecting means comprises an orifice at said other end of said tube abutting with an opening at said other end of said passage, and said tunnelpipe connecting means comprises an annular channel in said member adjacent to the abutting of said member and said cap, said one end of said tunnel and said other end of said pipe both communicating with said channel.

3. A device as in claim 1, wherein said pipe passes centrally through said cap and said seal, said tunnelpipe connecting means comprises an orifice at said other end of said pipe abutting with an opening at said one end of said tunnel, and said passage-tube connecting means comprises an annular channel in said member adjacent to the abutting of said member and said cap, said other end of said passage and said other end of said tube both communicating with said channel.

4. A device as in claim 1, wherein said cap is adapted to fit over said traversing body so as to leave an open annular column between a portion of the surface of said seal and the air surrounding said bottle.

5. A device as in claim 1, including in further combination:

C. a lid twistably detachably sealable to said cap when said member is not sealed to said cap, said lid serving to prevent air from entering the bottle via the tube and the pipe.

6. A device as in claim 1, wherein said one end of said tube and said one end of said pipe comprise two chambers within a seal piercing needle.

7. A device as in claim 1, wherein said member further includes means externally mounted thereto for hand operated opening and closing of said flow control valve.

8. A device as in claim 7, wherein said flow control valve is normally spring biased to be closed and operation of said opening and said closing means leads to opening of said valve.

9. A device as in claim 1, wherein said second body includes a portion thereof adjacent and parallel to the neck of said bottle, said portion including therein said cavity adapted to hold said gas filled vessel in parallel alignment with the neck of said bottle, and including a handle mounted on said portion in communication with said vessel for activating said valve, said handle being located adjacent and parallel to said portion and on the opposite side of said portion relative to the neck of said bottle.

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