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(54) **BEVERAGE COOLER**

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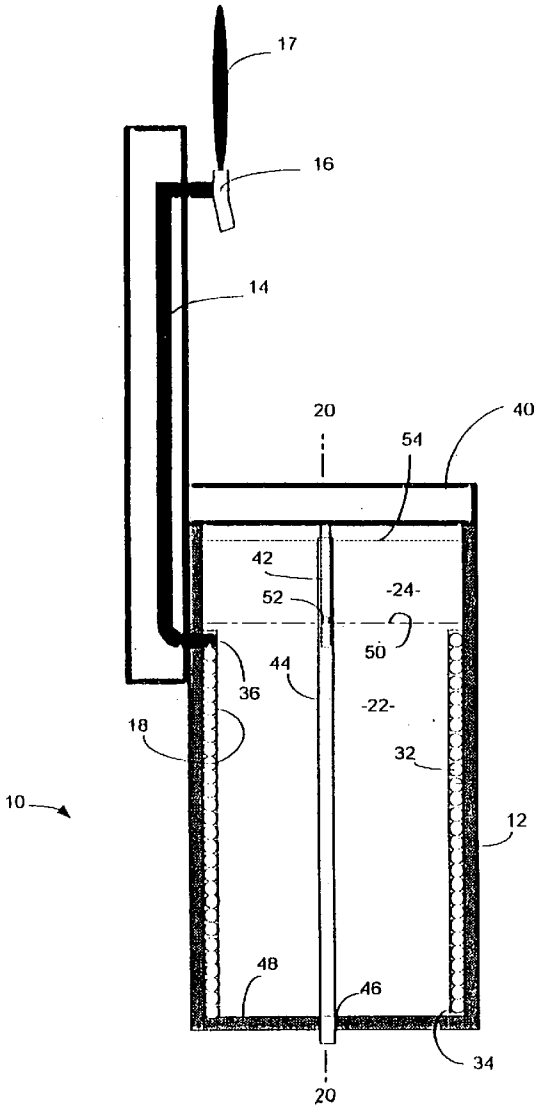
(57) **ABSTRACT**

The beverage cooler includes a vessel for a coolant such as ice water or a conventional refrigerant such as glycol or Freon. A coil is mounted in the interior of the vessel and has an inlet through which a beverage from an external source, separate and apart from the cooler enters the coil. A drain located above the coil carries off excess coolant. A tap at the outlet of the coil controls the flow of the beverage from the coil.



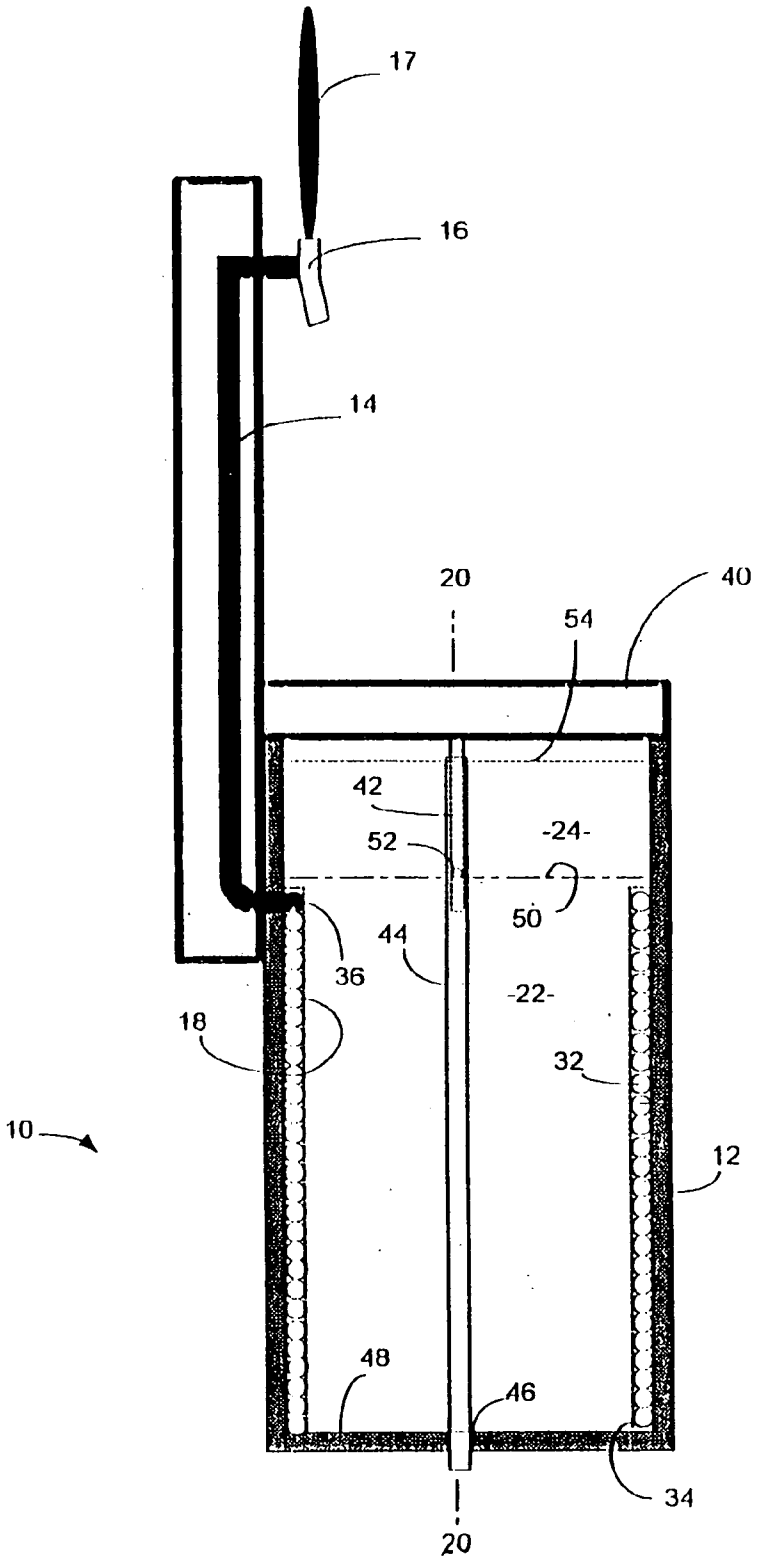


FIGURE 1

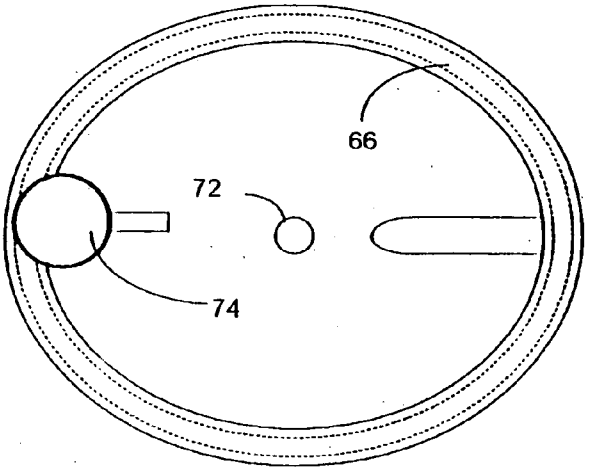


FIGURE 2

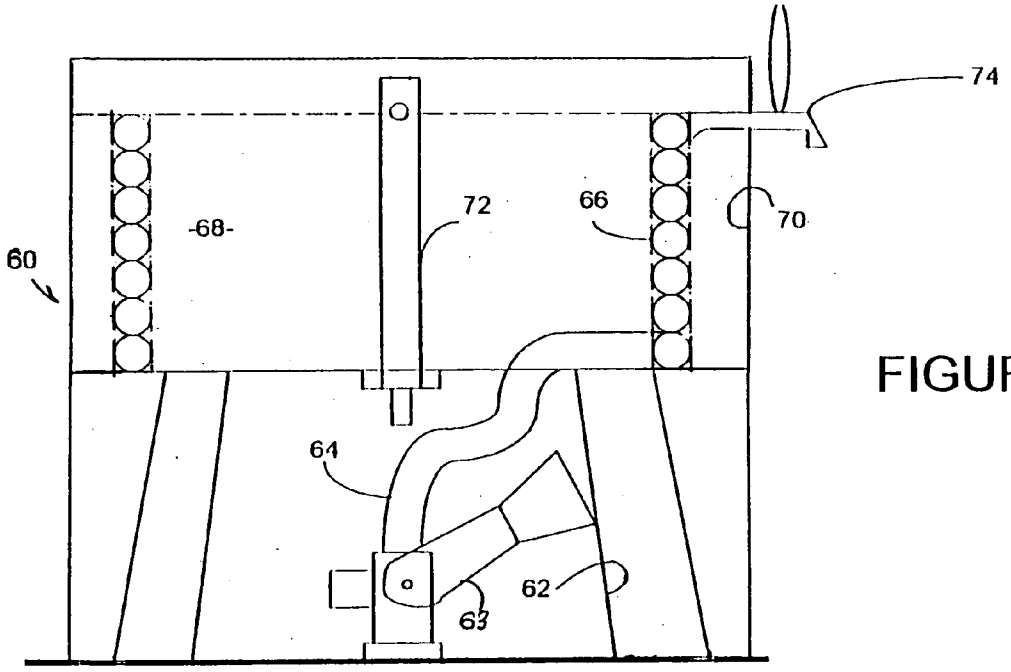


FIGURE 3

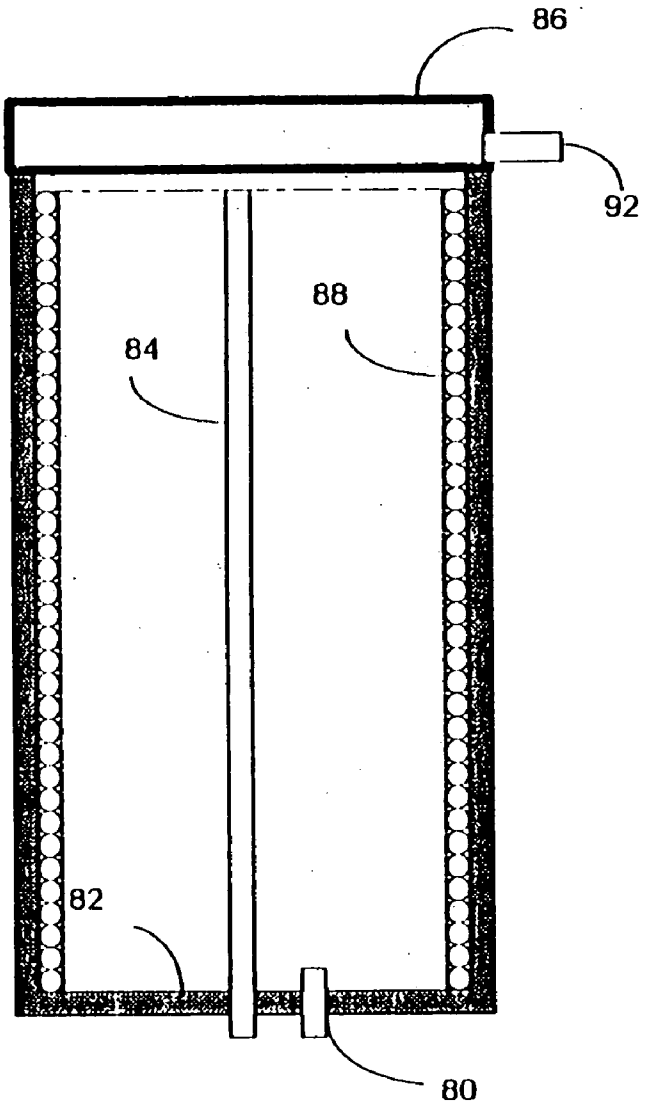


FIGURE 4

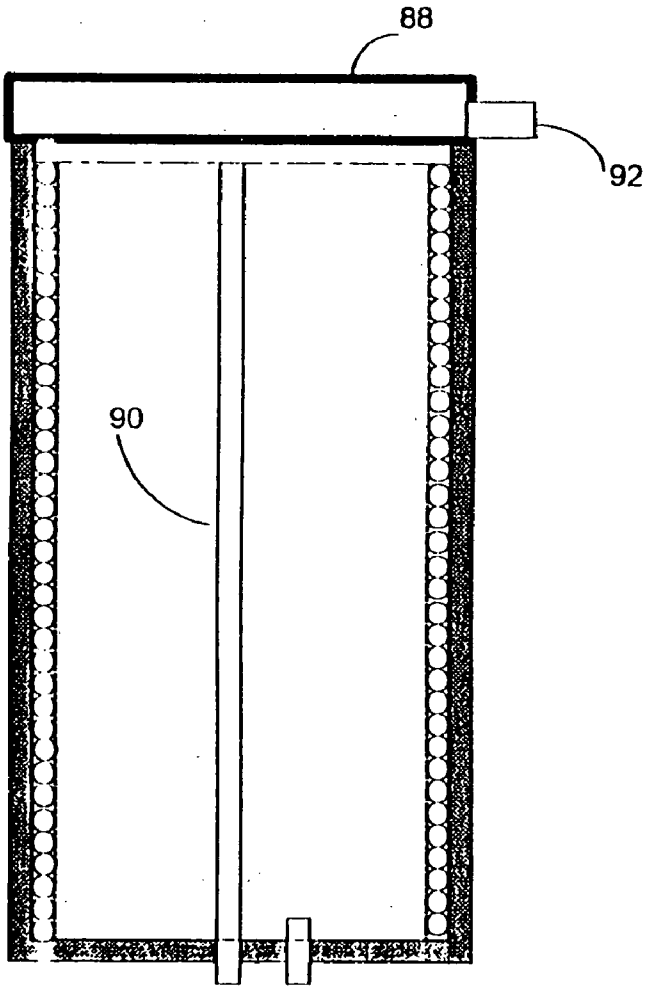


FIGURE 5

BEVERAGE COOLER

FIELD OF THE INVENTION

[0001] This invention relates to coolers for beverages and more particularly to a cooler which requires no external source of power to operate, is portable and is relatively simple of construction. The cooler is particularly suitable for refrigerating beer but is also useful for refrigerating other carbonated beverages such as ginger ale, cola and the like.

BACKGROUND OF THE INVENTION

[0002] Beverage coolers are widely used in such places as bars, restaurants and offices. Such coolers commonly consist of a receptacle for a beverage and refrigerating means which is operated by electricity or natural gas. The coolers are generally quite heavy because of the weight of the refrigerating means and the beverage receptacle and for that reason are not portable. They are also, of course, not suitable for use where there is not a source of power such as on a patio, beside a swimming pool or in the out-of-doors.

[0003] We have invented a cooler which is self-sufficient so that it can be used where there is no source of power. The cooler is portable because it is compact and is relatively light of weight. Lightness is achieved by the elimination of the conventional refrigerating machinery and by the elimination of a receptacle for a beverage.

[0004] According to one embodiment of the invention cooling is carried out by ice which is added as needed but is removed when the cooler is being transported. The beverage which the cooler refrigerates remains in its original container and is only within the cooler when it is actually being refrigerated. Only a relatively small quantity of beverage is refrigerated at a time and such quantity adds relatively little to the overall weight of the cooler If, for example, the beverage is beer, the beer remains in its keg until it is ready for consumption. At that time, the keg is connected to the cooler and the beer flows through the cooler to a tap. As the beer flows through the cooler it is refrigerated but should the flow be interrupted, relatively little beer remains in the cooler and such beer adds relatively little to the overall weight of the cooler.

SUMMARY OF THE INVENTION

[0005] Briefly the beverage cooler of our invention comprises: a vessel for a coolant; a cooling tube disposed within the vessel and through which a beverage to be cooled is adapted to flow, a drain for carrying off excess coolant above the cooling tube; and a tap in liquid-flow communication with the tube from which beverage discharges from the cooler.

DESCRIPTION OF THE DRAWINGS

[0006] The beverage cooler of our invention is described with reference to the accompanying drawings in which:

[0007] **FIG. 1** is an elevation of the cooler, partly cut away to show the interior of the various components;

[0008] **FIG. 2** is a plan view of a second embodiment of the cooler;

[0009] **FIG. 3** is an elevation of the second embodiment, illustrated schematically; and

[0010] **FIGS. 4 and 5** are elevations of third and fourth embodiments, respectively, of the cooler illustrated schematically.

[0011] Like reference characters refer to like parts throughout the description of the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] With reference to **FIG. 1**, the beverage cooler of the invention, generally **10**, includes a vessel **12** and a hose **14**. The hose extends vertically upwardly from the vessel and terminates at a tap **16**. Handle **17** opens and closes the tap in the usual manner.

[0013] The vessel has a cylindrical inner wall **18** disposed about a vertical longitudinal axis **20-20**. The vessel contains a coolant or refrigerant which preferably is ice cubes floating in water.

[0014] A cooling tube **32** wound into a coil is mounted within the vessel. The coil is disposed concentrically about axis **20-20**. A beverage to be cooled by the ice flows through an inlet (not illustrated) at the lower end **34** of the coil, through the coil where it is cooled primarily by the ice-cooled water and exits from an outlet **36** at the upper end of the coil. The outlet is connected to the lower end of hose **14** while the upper end of the hose is connected to tap **16**.

[0015] Beverage which discharges from the tap flows downward into a tumbler or other receptacle (not illustrated) on a drip tray **40**. The drip tray is seated on top of the vessel and is, in the embodiment illustrated in **FIG. 1**, removable so that fresh ice and water can be added to the vessel from the top.

[0016] Overflow from the beer glass or other receptacle flows onto the drip tray and from there flows into a discharge conduit **42** disposed centrally of the tray. The conduit extends into a drain **44** which is disposed concentrically about axis **20-20**. The drain extends downwardly through the vessel and through an opening **46** in the bottom wall **48** of the vessel where the overflow is disposed of.

[0017] In operation, the drip tray is removed to gain access to the interior of the vessel. Ice cubes are then added until their level reaches line **50**. Water is then added to raise the level of ice to line **54**. Excess water flows into aperture **52** in drain **44** should the vessel be over-filled.

[0018] A beverage, under pressure, is then introduced into the inlet of the coil. Since the vessel is substantially full of ice, cooling of the beverage will begin as soon as it enters the coil at the bottom of the vessel. The coil is composed of conducting material such as stainless steel, copper or a heat-conducting polymer and the wall of the vessel is insulated to minimize the inward transfer of heat from outside the vessel. The cooled beverage then flows upwardly through hose **14** and discharges from the tap when it is opened by handle **17**. The beverage flows into a tumbler or other like receptacle container which is seated on the drip tray.

[0019] Should the tumbler be overfilled, the excess beverage will spill onto the drip tray and exit downwardly through discharge conduit **42** and into drain **44** where it exits from the vessel.

[0020] With reference to **FIGS. 2 and 3**, cooler, generally **60**, is mounted on a keg **62** of beer. When handle **63** is opened, beer flows through the tube to coil **66** where it is cooled by ice in the interior of the vessel. The coils are spaced concentrically inward of the interior wall **70** of the vessel so that the coils are surrounded by the coolant. A drain **72** serves to remove excess water from the vessel.

[0021] Beer flows from the coil to a tap **74** which is at the side of the vessel. In the embodiment illustrated, there is no drip tray. Excess beer from the tap discharges outside the cooler; there is no provision for directing it to a drain within the cooler.

[0022] With reference to **FIG. 4**, cooling of the refrigerant occurs outside the vessel. The coolant can be a conventional coolant such as glycol, Freon or even water and can be gaseous or liquid depending on its temperature of condensation. The refrigerant is cooled by conventional means which is not part of this invention. The refrigerant is introduced under pressure through a nozzle **80** at the bottom wall of vessel **82**.

[0023] The contents of the vessel of **FIG. 4** are sealed from the atmosphere. The refrigerant fills the space within the vessel and a conduit **84** is provided for draining off excess refrigerant. Since the conduit carries only refrigerant, the excess can be recycled to the apparatus for further cooling of the refrigerant.

[0024] The top of drip tray **86** is sealed so that no refrigerant can escape from the top of the vessel. A coil **88** is provided for the beverage. The beverage flows from the coil to a tap (not illustrated). Excess beverage on the drip tray flows to a drain **92** at the side of the tray.

[0025] The cooler of **FIG. 5** is the same as that illustrated in **FIG. 4** except that the contents of the vessel are not sealed from the atmosphere. Drip tray **88** can be removed to gain access to the contents of the vessel and the drip tray can be provided with a discharge conduit at its side such as at **92** to remove excess beverage on the drip tray.

[0026] It will be understood of course that modifications can be made in the beverage cooler described and illustrated herein without departing from the scope and purview of the invention as defined in the appended claims.

We claim:

1. A beverage cooler comprising: a vessel for a coolant; a cooling tube disposed within said vessel and through which a beverage to be cooled is adapted to flow, a drain for carrying off excess coolant above said cooling tube; and a tap in liquid-flow communication with said tube from which beverage discharges from said cooler.

2. A beverage cooler comprising: a vessel for a coolant; a cooling tube disposed entirely within said vessel and through which a beverage to be cooled is adapted to flow, said cooling tube having an outlet and an inlet through which the beverage flows; a drain disposed at a point at which a substantial portion of beverage within said cooling tube is below said drain for carrying off excess coolant from said vessel; and a tap in liquid-flow communication with said outlet from which beverage discharges.

3. The beverage cooler of claim 2 further including an external container, separate and apart from said cooler from which said beverage flows to said cooling tube.

4. The beverage cooler of claim 3 wherein said vessel is arranged and constructed such that the only beverage within said beverage cooler is within said cooling tube.

5. The beverage cooler as claimed in claim 1 wherein said cooling tube is in the form of a coil.

6. The beverage cooler as claimed in claim 5 wherein said vessel has an outer wall which defines a space for said coolant, said coil being spaced apart from said outer wall.

7. The beverage cooler of claim 1 wherein said coolant consisting of ice and water.

8. The beverage cooler of claim 7 further including means, separate and apart from said cooler, for forming said ice.

9. The beverage cooler of claim 1 wherein said coolant is selected from the group consisting of: glycol, Freon and a combination of glycol and Freon.

10. The beverage cooler of claim 1 wherein said coolant is selected from the group consisting of: glycol, Freon and a combination of glycol and Freon and wherein said coolant is sealed from the atmosphere

11. The beverage cooler of claim 1 wherein said coolant is selected from the group consisting of: glycol, Freon and a combination of glycol and Freon and wherein said coolant is open to the atmosphere

12. The beverage cooler of claim 1 further including a drip tray onto which said discharged beverage is adapted to fall, said drip tray having a discharge conduit through which beverage discharged onto said drip tray is adapted to flow.

13. The beverage cooler of claim 12 wherein said drip tray is removably disposed upon said vessel, access being had to the interior of said vessel upon removal of said drip tray.

14. The beverage cooler of claim 1 wherein said drain has an opening adapted to be disposed at the upper level of liquid coolant within said vessel.

15. A beverage cooler of claim 1 wherein said vessel has a cylindrical inner surface disposed about an upstanding longitudinal axis and is adapted to hold said coolant; said drain being upstanding and being disposed concentrically about said longitudinal axis, said drain further having an opening adapted to be disposed at an upper level of coolant within said vessel; said cooling tube being in the form of a coil disposed concentrically about said longitudinal axis and being spaced apart from said inner surface, said coil further having an inlet and an outlet, said tap being in liquid-flow communication with said outlet, said beverage cooler further including a drip tray onto which said discharged beverage is adapted to fall; and a discharge conduit extending downwardly from said drip tray through which beverage discharged onto said drip tray is adapted to flow, said discharge conduit extending through said opening and into said drain such that beverage discharged onto said drip tray flows into said drain.

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