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BEVERAGE COOLING SYSTEM

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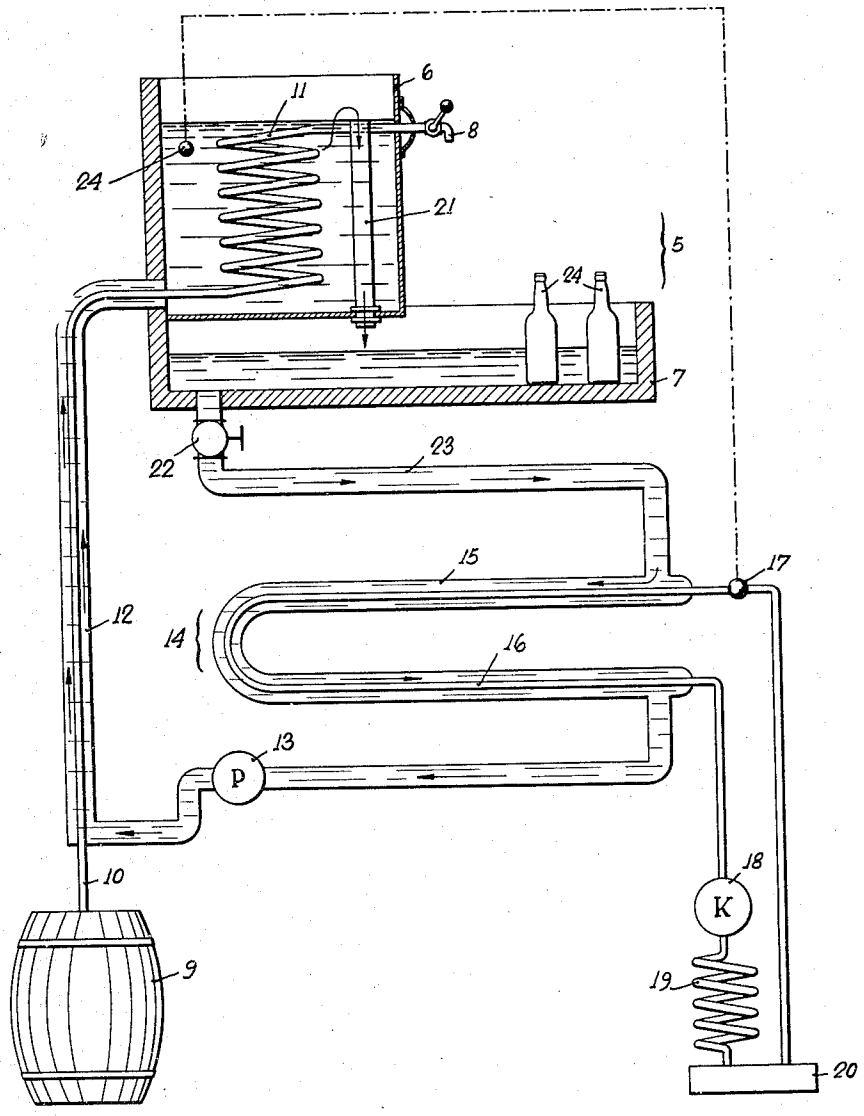

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BEVERAGE COOLING SYSTEM

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7 Claims. (Cl. 62—101)

This invention relates to cooling, and, more particularly, to a method of and apparatus for cooling beverages.

The general object of the invention is to provide an improved method of and apparatus for cooling a fluid or beverage, particularly beer.

Another object of the invention is to use a cooling fluid for cooling beer passing from a keg to a spigot, the cooling fluid then being used to cool bottles, cans or the like, positioned in a suitable receptacle.

A feature of the invention resides in cooling a cooling medium, passing the cooling medium through a jacket in heat exchange relation with the line through which beer is passed from a keg to a spigot, and then passing the cooling medium through a receptacle adapted to receive bottles or the like, and repeating the cycle.

Another feature of the invention resides in controlling the cooling of the cooling medium, responsive to variations in heat load on the system.

Other objects, features and advantages of the invention will more clearly appear from the following description, to be read in connection with the accompanying drawing, which represents diagrammatically applicant's arrangement of apparatus.

Numeral 5 designates generally a bar, having an upper deck 6 and a lower deck 7. Beer is supplied to the spigot 8 from keg 9, which may be located in the basement of the building, or at any other remote point. Beer passes from the keg 9 to the spigot 8 through supply line 10, and through cooling coil 11 disposed within the upper deck 6. Supply line 10 is provided with a jacket 12 to which pump 13 supplies a cooling medium. The cooling medium is cooled in heat exchanger 14. Heat exchanger 14 may be of any desired type, and applicant does not limit himself with respect thereto. As illustrated, however, cooling medium flows through jacket 15 surrounding expansion coil 16 of a refrigerating system, including expansion valve 17, compressor 18, condenser 19 and receiver 20. The cooling medium passes upwardly through the jacket 12 and into deck 6, where it cools the beer in coil 11. Overflow pipe 21 conveys cooling medium from the upper deck 6 to the lower deck 7. The cooling medium, accumulated to any desired height by the adjustment of valve 22, cools bottles or the like 24 and their contents to any desired temperature. From the lower deck 7, the cooling medium is returned through line 23 to interchanger 14 and thence is recirculated through the system. If desired, of course, the lower deck may be eliminated, in which case the cooling medium is fed directly from pipe 21 to pipe 23.

Any desired system of controls may be used. In a preferred form of the invention, applicant disposes a thermal element 24 in the cooling medium in deck 6, the operation of expansion valve 17 being controlled by this thermal element.

Applicant's arrangement insures the delivery of beer at desired temperatures, and effectively prevents spoliation and warming of the beer in the supply line. Applicant's arrangement also provides for the maintenance of bottles, cans and the like and their contents at desired temperatures, and completely eliminates the need for ice.

Since many modifications may be made in the invention without departing from the scope thereof, it is intended that the foregoing description, and the accompanying drawing, shall be regarded as illustrative only, applicant limiting himself only as indicated in the accompanying claims.

I claim:

1. In an apparatus of the character described, a first deck, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being adapted to receive articles such as bottles, means for supplying fluid to the first deck, means for passing coolant in heat exchange relation with fluid passing to and in said first deck, and means for subsequently supplying said coolant to said second deck, whereby said fluid and said articles are cooled.

2. In an apparatus of the character described, a first deck, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being adapted to receive articles such as bottles, means for supplying fluid to the first deck, means for passing coolant in heat exchange relation with fluid passing to and in said first deck, means for supplying said coolant to said second deck, a heat exchanger for cooling the coolant, and means for recirculating the coolant through the system whereby said fluid and said articles are cooled.

3. In an apparatus of the character described, a first deck, a beverage coil within said deck, means for supplying beverage to and circulating beverage through said coil, means for cooling liquid, means for supplying said cooled liquid to said first deck and for accumulating said cooled liquid within said first deck to a height sufficient

substantially to cover said coil, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being adapted to receive articles such as bottles, and means for delivering cooled liquid from the point of desired liquid level in said first deck to said second deck whereby the articles in said second deck are cooled.

4. In an apparatus of the character described, a first deck, a beverage coil within said deck, means for supplying beverage to and circulating beverage through said coil, means for cooling liquid, means for supplying said cooled liquid to said first deck and for accumulating said cooled liquid within said first deck and about said coil, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being adapted to receive articles such as bottles, means for delivering cooled liquid from the point of desired liquid level in said first deck to said second deck whereby the articles in said second deck are cooled, and means for recirculating the cooled liquid through the system.

5. In an apparatus of the character described, a first deck, a beverage coil within said deck, means for supplying beverage to and circulating beverage through said coil, means for cooling liquid, means for supplying said cooled liquid to said first deck and for accumulating said cooled liquid within said first deck and about said coil, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being adapted to receive articles such as bottles, means for delivering cooled liquid from said first deck to said second deck whereby the articles in said second deck are cooled, and means for recirculating the cooled liquid through the system.

6. In an apparatus of the character described, a first deck, a second deck proximate said first deck, at least a portion of said second deck being vertically under said first deck, said decks comprising portions of a unitary structure, said second deck being adapted to receive articles such as bottles, means for supplying fluid to said first deck, means for passing coolant in heat exchange relation with fluid in said first deck, means for supplying said coolant from said first deck to said second deck, means for recirculating said coolant through said decks, and a heat exchanger for controlling the temperature of the coolant.

7. In an apparatus of the character described, a first deck, a beverage passage within said deck, means for supplying beverage to and circulating beverage through said passage, means for cooling liquid, means for supplying said cooled liquid to said first deck and for circulating said cooled liquid in heat exchange relation with beverage in said passage, a second deck, at least a portion of said second deck being positioned vertically under said first deck, said second deck being positioned proximate said first deck and being adapted to receive articles such as bottles, means for delivering cooled liquid from said first deck to said second deck, and means for continuously recirculating said liquid through the system, and means for controlling the temperature of said circulated liquid.

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