July 18, 1967 P. DE LORENZO 3,331,536

DRINK DISPENSER

Filed May 20, 1966

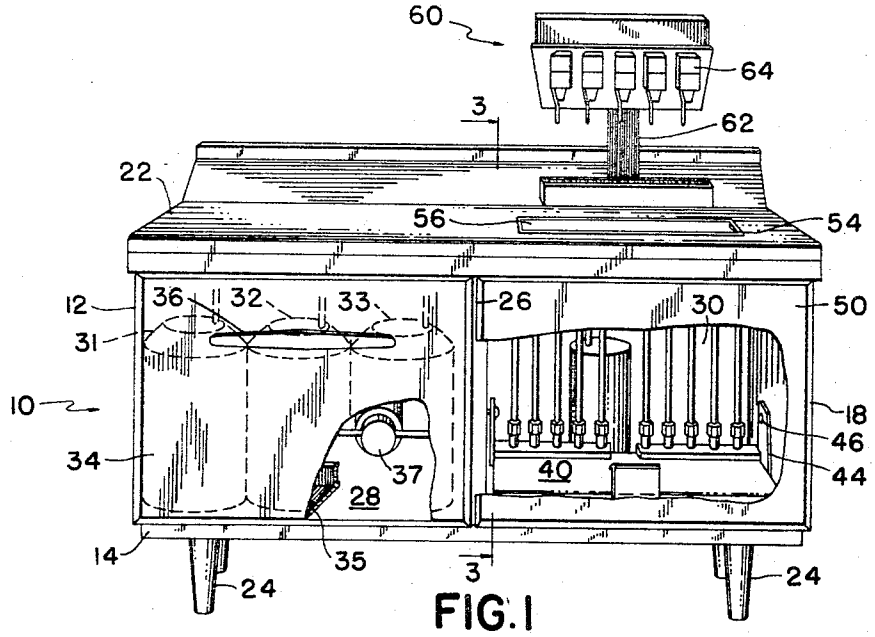


FIG. 1

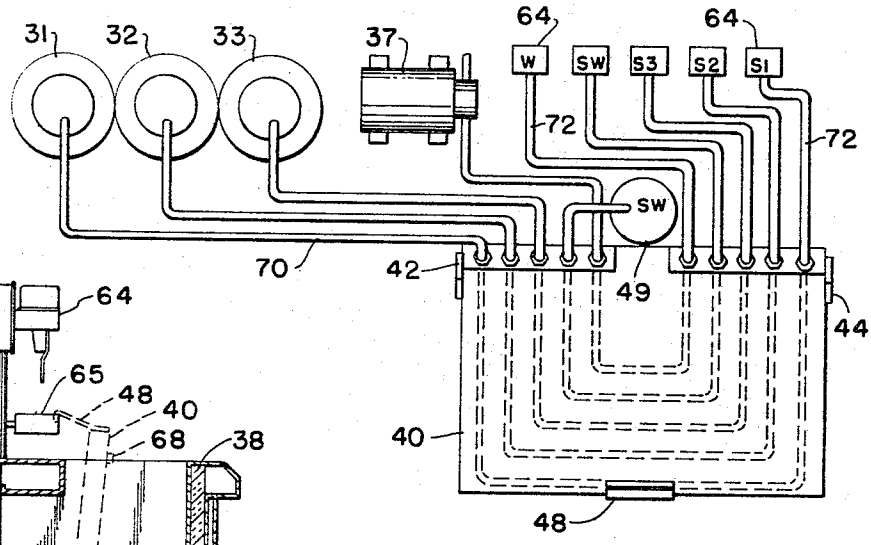


FIG. 2

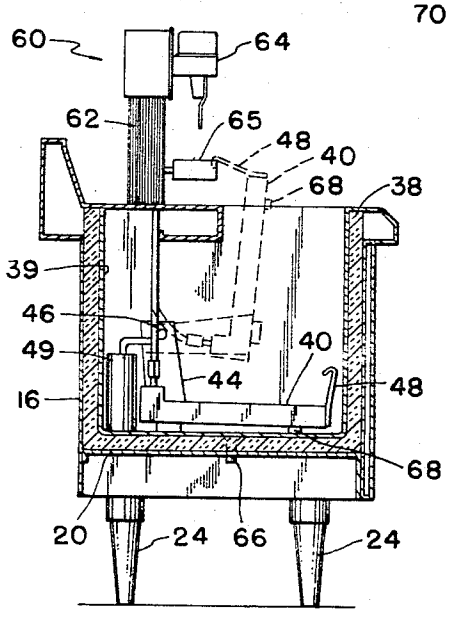


FIG. 3

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United States Patent Office

3,331,536

Patented July 18, 1967

3,331,536

DRINK DISPENSER

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Filed May 20, 1966, Ser. No. 551,683
10 Claims. (Cl. 222—108)

This invention relates to a drink dispenser and more particularly to improvements in a dispensing apparatus having a special utility in dispensing beverages and the like.

It is well known in the art to utilize a drink dispenser having a cabinet divided into at least two compartments with one of the compartments containing, as an example, a plurality of syrup tanks and the other compartment defining a cooling compartment in which is located at the bottom thereof a stationary non-movable cooling plate. The cooling plate is provided with a multiplicity of fluid circuits therein. The circuits of the cooling plate are connected at one side to the syrup tanks and to other conventional fluid sources and one the other side thereof to faucets which are located above the compartments. The beverages are dispensed through the faucets as is well known in the art. Ice is placed in the cooling compartment on top of the cooling plate so as to chill or cool the liquids flowing therethrough from the syrup tanks and other fluid containers to the aforementioned faucets.

Many mainenantce problems have been encountered in the art in connection with cleaning the stationary cooling plate and other areas of the cooling compartment. Dirt, syrup and other gummy substances have collected on the cooling plate and the surrounding area of the cooling compartment thereby creating difficult maintenance problems. In addition it has been difficult to drain the water collected in the bottom of the cooling compartment due to the location of the stationary cooling plate.

The present invention has overcome the aforementioned problems by mounting the cooling plate in the bottom of the cooling compartment for pivotal and swinging movement in order to permit more effective maintenance. In addition, a drain is provided in the bottom of the cooling compartment which may be connected through an appropriate hose to a sump. The cooling plate is pivotally mounted on one end thereof, with the other end thereof being provided with a latching element which, when the cooling plate is raised, will engage a hook or catch located exteriorly of the cooling compartment. When the cooling plate is in a raised position it is possible to clean the bottom of the cooling compartment and cooling plate and remove foreign matter, syrup and other substances therefrom. When the cooling plate is in the operative horizontal position at the bottom of the cooling compartment, it is spaced above the drain opening in order to permit any water to escape from the compartment through the drain opening.

It is an object of the present invention to provide a drink dispenser comprising a housing having a pair of compartments, with one of the compartments serving as a storage compartment for syrup containers, and the other of the compartments serving as a cooling compartment, with the cooling compartment having a pivotally mounted multiple circuit cooling plate in the bottom portion thereof in order to permit the cooling plate to be raised when required for maintenance purposes.

Another object of the present invention is to provide a drink dispenser comprising a housing having a pair of compartments, one of the compartments serving as a storage compartment for sources of liquids, and the other of the compartments serving as a cooling compartment, means for cooling the cooling compartment, faucet means located above the cooling compartment and located exteriorly thereof, a multi-circuit cooling plate in the cooling compartment, means pivotally mounting the cooling plate for swinging movement from an operative horizontal position to an inoperative vertical position to permit cleaning of the cooling compartment, and conduit means connecting the sources of liquid through the cooling plate to the faucet means.

Still another object of the present invention is to provide a drink dispenser of the aforementioned type wherein the cooling plate is provided with a latching element engageable with a catch located exteriorly of the cooling compartment when the cooling plate is in the aforementioned inoperative vertical position.

A further object of the present invention is to provide a drink dispenser of the aforementioned type wherein the pivot means includes a pair of arms fixedly connected to one end of the cooling plate at opposite sides thereof and pivot pins connecting the arms to wall portions of the cooling compartment.

A still further object of the present invention is to provide a drink dispenser of the aforementioned type wherein the one end of the cooling plate is spaced from the rear panel of the housing to permit storage of a carbonator tank in the cooling compartment.

Another object of the present invention is to provide a drink dispenser of the aforementioned type wherein a drain opening is located in the bottom wall of the cooling compartment, with the cooling plate spanning and spaced above the drain opening when the cooling plate is in the aforementioned operative horizontal position.

Still another object of the present invention is to provide a drink dispenser of the aforementioned type wherein the cooling compartment is provided with a removable door in the top wall thereof to permit the cooling plate to be moved to the aformentioned inoperative vertical position.

It is thus another object of this invention to provide a simplified low cost structure of the aforementioned type having certain advantages contributing to efficiency, reliability and long life as well as ease of maintenance.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred form of the present invention is clearly shown.

FIGURE 1 is a front elevation of the drink dispenser with certain portions removed in order to expose features of the present invention.

FIGURE 2 is a fluid circuit illustrating the connections between the various sources of fluid, cooling plate, and the corresponding faucets in the order mentioned.

FIGURE 3 is a sectional view taken substantially on the line 3—3 of FIGURE 1.

The drinking dispenser illustrated in FIGURE 1 is designated by the numeral **10** and includes a cabinet **12** mounted on a frame **14**. The cabinet **12** includes a rear panel **16**, a pair of side panels **18**, a bottom panel **20** and a top panel **22**. The aforementioned panels or walls may be made, as an example, from stainless steel and welded together prior to mounting and welding the cabinet **12** on the frame **14**. In many cases the side panels are made from a heavy gauge cold rolled metal which is painted as desired.

The entire frame assembly is supported by a plurality of legs **24**. Each leg **24** is of the type known as a rigid tapered leg provided with adjustable hexagonal bullet-feet for convenient wrench adjustment. The cabinet **12** includes a middle wall or panel **26** which divides the interior of the cabinet **12** into a pair of compartments **28** and **30**. Compartment **28** defines a storage area in which, as an example, may be located a plurality of syrup containers or tanks **31**, **32** and **33** located in a support **35**. The tanks are available in two, three, or five gallon size and are each provided with a quantity of syrup under pressure as

is well known in the art. The tanks are provided with quick disconnect gas fittings. Compartment **28** is provided with a tilt-out door **34** which is pivoted at the bottom thereof. The tank support **35** may be mounted on the door **34** for convenient filling of the tanks. The door **34** is provided with a handle **36** near the top thereof so that a person may grip the handle **36** to open the door **34** and thereafter remove and then replenish the syrup tanks. A water pump **37** is also located in compartment **28** and is connected to a conventional water source as is well known in the art.

The compartment **30** defines a cooling zone or compartment. The cooling compartment **30** is provided around the sides and bottom thereof with suitable insulation **38** which, as an example, may be made from polyurethane foam. A stainless steel liner **39** is provided in the compartment **30** at the sides, bottom and top. A heavy duty cold or cooling plate **40** is provided with multi-circuits and is made, as an example, from aluminum. The cooling plate **40** is specially designed to give maximum heat transfer from the ice located within the cooling compartment **30**, eliminating the necessity for any mechanical means of refrigeration. It has also been found by utilizing ice for cooling purposes that a large percentage of drink dispensing malfunctions have been eliminated. Opposite sides of the cooling plate **40** at one end thereof is provided with a pair of brackets **42** and **44**. The brackets **42** and **44** are fixedly secured to the cooling plate **40**. The brackets **42** and **44** are in turn appropriately connected, as an example, to the middle partition **26** and the end wall **18** respectively by means of pivot pins or elements **46**. The back end of plate **40** is spaced from the rear panel **16** as illustrated in FIGURE 3.

The other end of the cooling plate **40** is provided with a centrally located latching element **48**, the free end of which is provided with a hook as best illustrated in FIGURE 3. The cooling compartment **30** includes at the rear of the cooling plate **40** a carbonator tank or container **49**. The tank **49** is located within the ice compartment to insure maximum carburetion.

The front of the storage compartment **30** may be provided with a front panel or door **50**. Means may be provided to permit the door **50** to slide or in certain applications the door may be fixed.

The top panel **22** immediately above the cooling compartment **30** is provided with an opening **54** having a slide or door **56** therein which when open will permit a person to drop ice into the cooling compartment **30** on top of the cooling plate **40**.

The drink dispenser **10** further includes a cooling tower **60**, as an example, made from stainless steel, and having a hollow column **62** through which the conduits are directed to corresponding outlets or faucets **64**. The tower **60** is provided with a plurality of electrically operated faucets **64**, each faucet having an electrically controlled switch as is conventional in the art. The column **62** is provided with a drain trough **65**, which forms a catch, above the top panel **22** engageable with the latching element **48** of the cooling plate **40** when the plate **40** is in the inoperative vertical position. The plate **40** is moved about the pivot means **46** and through the opening **54** to the vertical position illustrated in dotted lines in FIGURE 3 in order to permit various maintenance and cleaning functions to be performed.

The bottom of the cooling compartment **30** is provided with a drain opening **66** which is adapted to be connected by a conduit, not shown, to a sump or basin. The cooling plate **40** is provided with a locating member or spacer **68** engageable with the bottom of the compartment **30** in order to hold and space the plate **40** above the drain opening **66**. Wtih such a construction any water in the cooling compartment **30** will have continuous and free access to the drain opening **66**.

The tanks **31**, **32** and **33**, pump **37** and the tank **49** are each connected to a circuit of the cooling plate **40** by a

conduit **70** as best illustrated in FIGURE 2. The conduits **70** may be in the form of rubber hoses or any other type as is well known in the art. Each circuit of the cooling plate **40** is in turn connected to a faucet **64** by a conduit **72**. It should be appreciated that all conduits **72** must be resilient, as an example, rubber hoses, in order to permit the cooling plate **40** to be raised or elevated and then returned to the operative position.

It should be appreciated that FIGURE 2 illustrates a typical circuit and that other forms may be utilized. As an example, the incoming water could be directed through a primary and secondary cooling coil prior to combining with the CO_2 gas in the carbonator tank **49** which is located within the ice storage compartment **30** to insure maximum gas absorption into the water. Regardless of which type of circuit is utilized it will be appreciated that the syrup is chilled by means of individual circuits prior to its delivery at the faucet, eliminating the necessity of storing the syrup under refrigeration.

The drink dispenser **10** is designed to dispense up to 750 glasses (full 6 oz. glasses) of beverage per hour (dependent on temperature of incoming water) at 40° F., insuring a uniform high quality drink even at peak period loads.

The electrically operated faucets **64** are provided with feather touch controls to enable the operator to draw two drinks at one time.

As an optional feature, the drink dispenser **10** may be provided with a conventional syrup rail adapted to hold, as an example, five jars, four standard pumps and one heavy duty chocolate pump. In certain applications an ice machine may be provided which automatically dispenses into the ice storage compartment a sufficient quantity of ice as required.

The drink dispenser **10** may also be provided with a low pressure water regulator or a high pressure water regulator or a high pressure carbonator and pump depending on the particular application and specifications as is well known in the art. Combination faucets may be utilized which permit drawing coarse soda (SW) from carbonated faucets and plain water (W) from non-carbonated faucets. The three different flavors or syrups are designated by S1, S2 and S3 in FIGURE 2.

It should be appreciated that the heavy duty cooling plate **40** is not only adjustable as heretofore described in order to facilitate maintenance and cleaning functions but can also be completely removed from the compartment **30** after disconnecting the various conduits. At such time the inner circuits in plate **40** can be cleaned.

The drawing and the foregoing specification constitute a description of the improved drink dispenser in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A drink dispenser comprising a housing having a pair of compartments, one of said compartments serving as a storage compartment for sources of liquids, and the other of said compartments serving as a cooling compartment, means for cooling said cooling compartment, faucet means located above said cooling compartment and located exteriorly thereof, a multi-circuit cooling plate in said cooling compartment, means pivotally mounting said cooling plate for swinging movement from an operative horizontal position to an inoperative vertical position to permit cleaning of said cooling compartment, and conduit means connecting the sources of liquid through said cooling plate to said faucet means.

2. The drink dispenser defined in claim **1** wherein said cooling plate is provided with a latching element engageable with a catch located exteriorly of said cooling compartment when said cooling plate is in the aforementioned inoperative vertical position.

3. The drink dispenser defined in claim **1** wherein said pivot means includes a pair of arms fixedly connected to

one end of said cooling plate at opposite sides thereof and pivot pins connecting said arms to wall portions of said cooling compartment.

4. The drink dispenser defined in claim 3 wherein a latching element is connected to the other end of said cooling plate engageable with a catch located exteriorly of said cooling compartment when said cooling plate is in the aforementioned inoperative vertical position.

5. The drink dispenser defined in claim 4 wherein the means for cooling said cooling compartment is ice.

6. The drink dispenser defined in claim 4 wherein said one end of said cooling plate is spaced from the rear panel of said housing to permit storage of a carbonator tank in said cooling compartment.

7. The drink dispenser defined in claim 7 wherein said faucet means are electrically operated.

8. The drink dispenser defined in claim 4 wherein a drain opening is located in the bottom wall of said cooling compartment, with said cooling plate spanning and spaced above said opening when said cooling plate is in the aforementioned operative position.

9. The drink dispenser defined in claim 4 wherein said cooling compartment is provided with insulation made from polyurethane foam.

10. The drink dispenser defined in claim 4 wherein said cooling compartment is provided with a removable door in the top wall thereof to permit said cooling plate to be moved to the aforementioned inoperative vertical position.

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