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WATER COOLER AND DISPENSER

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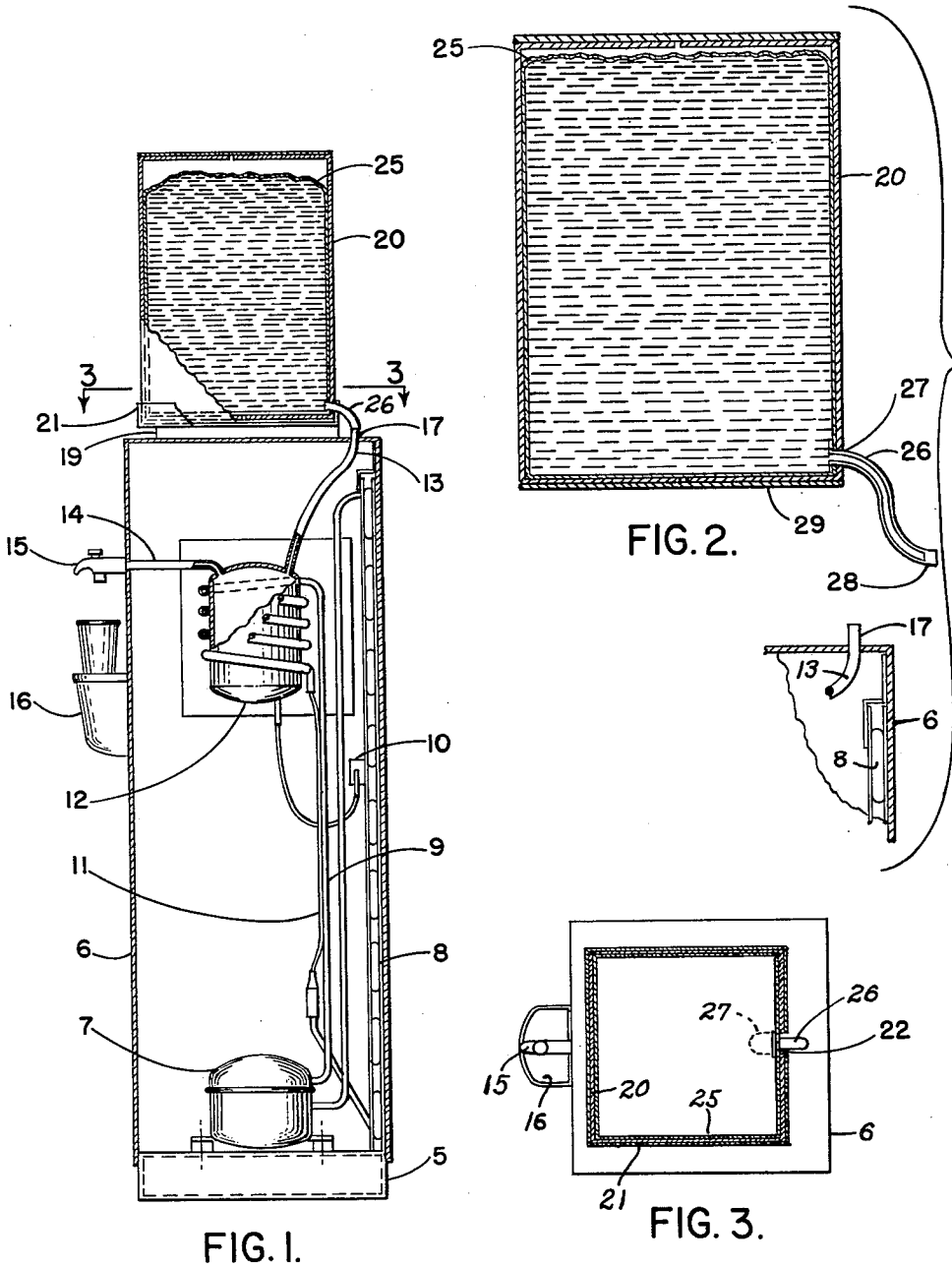


FIG. 1.

FIG. 2.

FIG. 3.

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WATER COOLER AND DISPENSER

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1 Claim. (Cl. 62—394)

This invention relates to a water cooler and dispenser. It has to do, more particularly, with a water cooler of the type which includes means for cooling and dispensing water from a replaceable and disposable-type storage container or receptacle.

At the present time, it is customary to supply water to refrigerated coolers by means of relatively large containers of a rigid nature usually in the form of large glass bottles. These bottles usually have an outlet neck and are mounted in a suitable receiving socket on the cooler in inverted or neck-down position. Provision must be made in connection with the mounting means to permit the entrance of air upwardly through the neck of the bottle into the interior thereof. Although this type of water cooler has many advantages and is commonly in use, it is subject to certain serious disadvantages due mainly to the nature of the container used therewith.

The large glass bottle or container is difficult to handle because of the weight of the bottle itself, which must be of very heavy glass, and because of its cumbersome nature and shape. Furthermore, there is always danger of breakage due to the nature of the glass material and this along with the psychological effect of the fear of breakage increases the difficulty of handling the filled bottle in inverting it and mounting it on the cooler as well as in removing the empty bottle from the cooler. However, one of the main disadvantages is that the use of this type of rigid container or bottle makes it impossible to have a completely sanitary system. The bottle is usually handled by its neck and this results in contamination of the neck and the lip around the water outlet. Furthermore, because it is necessary to provide for entrance of air into the rigid container or bottle in order to dispense the water therefrom, air polluted with dust, insects, etc. may enter the bottle and contaminate the interior and contents of it.

It would therefore be desirable to provide a water cooler with a removable and replaceable water-supplying container system which could be used in a closed circuit free of communication with the atmosphere in order to enhance the sanitation. It would also be desirable to provide a water-supplying container for a water cooler of the type indicated which could be handled with ease in a sanitary manner, which could easily be mounted on the cooler and connected to the cooling and dispensing means thereof and which could easily be disconnected therefrom and be removed for replacement when it is emptied. The present invention accomplishes all of these objects.

To accomplish these objects, this invention provides for the use of package-water-containers or units which include water containers of a flexible nature so that they can collapse upon the withdrawal of water therefrom and, therefore, it is not necessary that the interior of the containers communicate with the atmosphere as with rigid containers. According to this invention, the packaged container is in the form of a flexible-film bag which is enclosed within a relatively rigid box of lightweight material and is filled with water. The box containing the water-filled bag is mounted on the water cooler by a simple supporting means. The bag is provided with a flexible outlet tube which can be extended through the wall of the box and can be connected easily to a supply tube of the water cooler which leads to the cooling and dispensing means thereof. Thus, the water is dispensed from the flexible

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container or bag to the user through a closed circuit not in communication with the atmosphere and, therefore, there is no danger of it being contaminated. Furthermore, during handling of the packaged container or unit from the time the bag is filled to the time the unit is mounted on the cooler, all portions of the bag and dispensing tube are enclosed within the protective box and will not be contaminated by handling. Also, due to the nature of the packaged container or unit and especially due to its light weight and the cubical form of the box, the container unit can be handled with ease in delivering it to the cooler, in mounting it and connecting the bag properly onto the closed cooler system, and is disconnecting it and removing it from the cooler. Also, it is obvious that this type of packaged container or unit has many advantages to the water dealer in that it is shipped to the dealer in knockdown form and can be so stored, can be discarded after one use and need not be washed and sterilized as in connection with the bottle and has many other desirable characteristics which favor its use by the water dealer.

In the accompanying drawing, there is illustrated one specific type of water cooler and dispenser in which this present invention is embodied, but it is to be understood that this invention is not limited to the specific type of cooler and dispenser illustrated.

In the drawing:

FIGURE 1 is a medial vertical sectional view of a water cooler and dispenser embodying this invention.

FIGURE 2 is an enlarged vertical sectional view through the container unit used with the cooler and dispenser.

FIGURE 3 is a horizontal sectional view taken along line 3—3 of FIGURE 1.

With reference to the drawing, there is shown a water cooler and dispenser which uses a packaged container according to this invention. As indicated above, this cooler and dispenser is shown by way of example only. It is shown as comprising a base assembly 5 mounting a cabinet assembly 6. Within the cabinet 6 is a suitable cooling or refrigerating system which may include a compressor 7, a static condenser 8, a heat exchanger 9, a thermostatic switch 10, a capillary tube 11, and a cooling tank assembly 12. The tank 12 has an inlet tube 13 leading thereinto and an outlet tube 14 leading therefrom. a valve or faucet 15 is connected to the outlet tube 14 and is mounted outside the cabinet 6 over a drip receptor 16 mounted below the faucet and on the cabinet. The inlet tube 13 extends upwardly through a suitable opening in the top of the cabinet 6 to provide a projecting end 17. Although the cooler is shown as including a storage tank having a cooling coil extending thereabout, it is to be understood that it could be of the instantaneous type where a water tube coil is substituted for the tank. Many variations in the cooling and dispensing system are possible but according to this invention, the system for cooling and dispensing the water must be a system which is closed until the faucet 15 is opened.

The top of the cabinet 6 is provided with a package support or socket shelf 19 for removably receiving the lower end of the packaged water container or unit 20 of a type used according to this invention. The packaged container includes the outer box which is preferably of square cross-section with its bottom surface resting on the flat plate surface of the shelf 19 and being centered and retained therein by means of the upstanding marginal locating flange 21. As shown in FIGURE 3, one edge of the shelf plate is provided with an outwardly opening notch 22, with the flange removed at that point, which is adjacent to the upstanding end 17 of the water inlet tube 13.

The packaged water container, as indicated, includes the outer box 20 which may be of any suitable construction but which is shown as being of square cross-section. It is preferably formed of lightweight material such as paperboard, corrugated board or the like. Within the box 20 is the container for the water which is in the form of a collapsible bag 25. This bag 25 is made of suitable flexible water-tight material such as polyethylene film. It is furnished with a flexible dispensing tube 26, which is usually plastic, suitably connected thereto at the lower end of the bag to provide an outlet therefor. This tube is positioned within the box at the time of delivery to the cooler and dispenser, usually tucked between the bottom flaps 29 thereof, and is pulled through a suitable opening 27 at the bottom of the box which is ordinarily closed by a pull-out tab (not shown). To connect the container 25 to the cooling and dispensing system, it is merely necessary to remove a plug 28 usually provided in the tube 26, extend the tube down through the notch 22 and slip the end of the flexible tube over the end 17 of the inlet tube 13, it being understood that this tube 13 is usually of metal, such as copper or the like. The flexible tube will slip over and tightly embrace the metal tube thereby producing an effective seal. Thus, the container or bag 25 is now connected to the faucet 15 by a closed sanitary system.

To dispense water from the bag 25, it is merely necessary to open the faucet 15 and as water is withdrawn from the bag it will collapse. It will not be necessary for proper dispensing of the water to allow air to enter the bag. Thus, a closed sanitary system may be maintained. When the bag 25 is completely emptied, it is merely necessary to slip the end of the flexible tube 26 from the projecting end 17 of the tube 13, lift the box 20 from the socket shelf 19 and discard the entire package. Then another filled package can be placed on the socket shelf 19.

Because of the nature of the packaged water container used, the dispensing of the water can occur from a conduit system which is closed from the collapsible container to the dispensing faucet, thereby enhancing the sanitary nature of the system. Furthermore, the packaged water container is of lightweight, unbreakable structure, and is shaped to permit ease of grasping, all of which facilitate handling in mounting the package on the cooler and dispenser and in removing it therefrom. Also, it is simple to make the connection and disconnection of the collapsible

bag to the cooling and dispensing system, requiring only a slip connection and disconnection of the associated plastic and metal tubes.

Although this description refers to the cooling and dispensing of water, it is apparent that it is also applicable to the cooling and dispensing of other liquids.

According to the provisions of the patent statutes, the principles of this invention have been explained and have been illustrated and described in what is now considered to represent the best embodiment. However, it is to be understood that, within the scope of the appended claim, the invention may be practiced otherwise than as specifically illustrated and described.

Having thus described this invention, what is claimed is:

A refrigerated water cooler comprising a cabinet having generally vertically arranged side walls and a substantially horizontally disposed top wall; electrically-actuated refrigeration means disposed within said cabinet and including a heat exchanger; a water circulating conduit positioned within said cabinet and having an intermediate portion disposed in heat exchange relation to the heat exchanger of said refrigeration means, an inlet end extending upwardly through the top wall of said cabinet and terminating exteriorly thereof and an outlet end terminating adjacent one of the side walls of said cabinet at a level substantially below the inlet end of said conduit; a shut-off valve connected with the outlet end of said conduit and extending outwardly from said one of the side walls of said cabinet; a generally flat, rectangular carton-supporting shelf carried on the top wall of said cabinet adjacent the inlet end of said conduit, said shelf having an upstanding flange; and a carton-encased, collapsible water-bag removably supported on said shelf within said flange and having a flexible outlet tube located in a cutaway portion of the flange and connected with the inlet end of said conduit, said bag, conduit and shut-off valve being normally closed to the entry of atmospheric air therein during operation of said water cooler.

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