United States Patent

Parish

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[45] **Sept. 5, 1972**

[54] **ADAPTER FOR A WATER COOLER**

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[52] **U.S. Cl.**.....**222/146 R**, 62/397, 222/181, 215/47

[51] **Int. Cl.**.....**B67d 5/62**

[58] **Field of Search**....222/105, 146 R, 146 HE, 181, 222/185, 183; 220/23, 42 B; 141/363, 367, 376; 62/394–397

[56] **References Cited**

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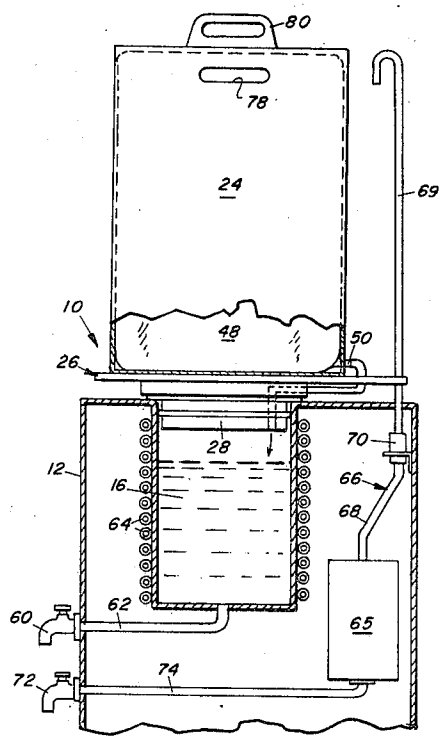
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Assistant Examiner—David A. Scherbel
Attorney—John J. Byrne

[57] **ABSTRACT**

An adapter for connecting conventionally designed water coolers for use with flexible bag, paper box-type containers by means of closing the bottle-receiving opening with a plug-like, support member and providing means for communicating the bag with the opening.

4 Claims, 3 Drawing Figures



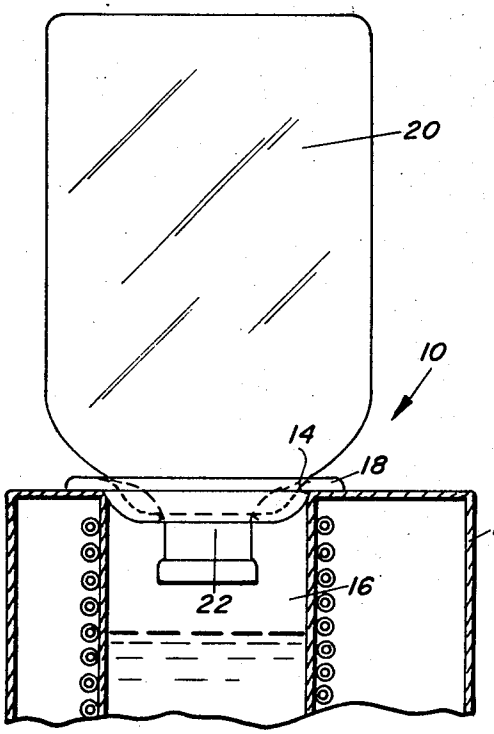


FIG. 1
(PRIOR ART)

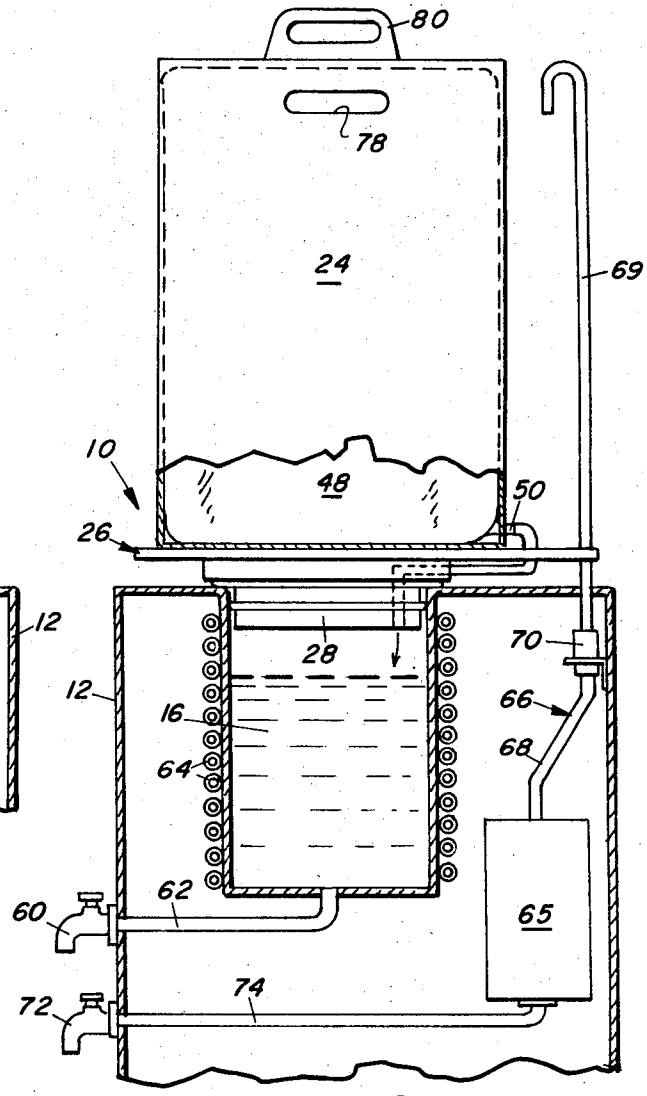


FIG. 2

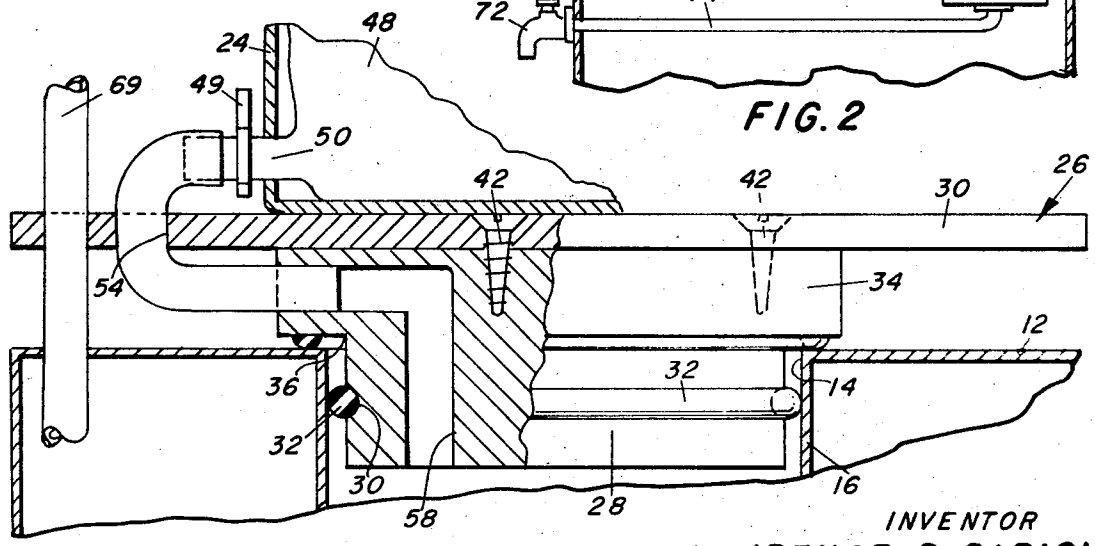


FIG. 3

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ADAPTER FOR A WATER COOLER

Because of the deterioration in purity of the water supply of many municipalities and because of a loss of freshness and flavor because of chemical bacteria killers, there is a growing demand for packaged, unadulterated water for home, office and industrial use. Much of this packaged water is used and dispensed from water coolers of the type constructed to receive its water supply from a large, unwieldy glass bottle. These bottles are normally of a type to hold approximately 5 gallons of water and terminate at their upper end by a throated section. The water cooler user must lift this unwieldy bottle and invert it into place. These bottles are difficult to wash and sanitize, they are difficult to deliver, and they are difficult for a user to handle in a sanitary manner.

It has become increasingly apparent in recent years that pure water supplies could best be packaged and delivered by way of a flexible, disposable bag within a corrugated paper container. Such packaging has long been used by the milk industry but has found little acceptance by the pure water industry. One of the primary reasons why the bag and box packaging art has not penetrated the pure water industry is that hundreds of thousands of water coolers are now in use throughout society that are constructed to receive only the aforementioned bottles. If the manufacturers of water coolers began making water coolers peculiarly adapted to receive bag and box type packaging, many inefficiencies would result. First of all, the delivery men of water would be required to adapt their trucks for both glass bottles and corrugated cardboard containers. Secondly, a hugh inventory of glass bottles would become obsolete. The U.S. Patents to Benua et al. Nos. 3,333,438, issued Aug. 1, 1967, and 3,060,703, issued Oct. 30, 1962, are directed toward the use of bag and box packaging but have never met with any appreciable commercial success.

The present invention relates primarily to an adapter for converting present-day, commonly used water coolers for use with bag-container packaging in a simple, inexpensive manner. In this way, entire routes can be converted without materially disturbing the capital investment the water cooler owners have made in their machines.

In addition to the main objective, the instant invention has many advantages over the glass containers of the prior art. First of all, since the flexible bag is collapsible, there is no requirement to permit air bubbles to enter the container as water is withdrawn therefrom. In many hospital and industrial areas, this intake of air can contaminate the water. Likewise, the water within the cardboard container is sheltered from light and is less likely to develop fungi and bacteria growth. Of course, the bag and box containers which can be used with the adapter of this invention are safer, they are disposable, they require much less storage space and they are easy to handle.

These and other objects of the invention will become more apparent to those skilled in the art by reference to the following detailed description when viewed in light of the accompanying drawings wherein:

FIG. 1 is a partial cross-sectional view of a water cooler of the prior art;

FIG. 2 is a partial cross-sectional view of a water cooler employing the adapter of this invention; and

FIG. 3 is an enlarged partial cross-sectional view of the adapter of this invention.

Referring now to the drawings wherein like numerals indicate like parts, a water cooler is indicated by the numeral **10**. The cooler includes a cabinet portion **12** having an opening **14** at its upper end. As shown in FIGS. **1** and **2**, this opening is also the opening of a cold water tank **16**. In prior art devices as shown in FIG. **1**, there is normally a grommet or annular support member **18** about the opening to support a glass water bottle **20** having a throated portion **22**. In order to prevent a perfect seal between the bottle **20** and the grommet **18** the grommet is provided with slots or ridges so as to permit air to enter the top of tank **16** above the water level. There are many hundreds of thousands of such water coolers currently being used in many commercial, home, hospital, and industrial environments. This invention provides a means for substituting a bag and box package unit, such as that indicated by the numeral **24** in FIG. **2**, in lieu of the bottle **20**.

The grommet **18** of the prior art devices is removed from the cooler. An adapter member **26** having a lower plug member **28** and a supporting plate **30** is best seen in FIG. **3** and is the principal component of the instant invention. The plug portion is provided with a peripheral groove **30** to receive a sealing ring **32**, the outer circumference of which is slightly greater than the circumference of the open end **14**. The plug member **28** (and seal) isolate the interior of tank **16** from the surrounding atmosphere. Plug member **28** is provided with a circumferential lip **34** at the juncture **36** between the lip **34** and the downwardly depending portion of plug **28**. A second seal **38** is provided to engage the periphery of the opening **18**. A supporting plate **30** is secured to the upper surface of plug **28** by way of set screws **42**.

The support plate **30** provides a base upon which the package **44** is supported. The package **44** is of a type having a corrugated paper carton **46** containing a flexible polyethylene bag **48**. The water-filled bag **48** is equipped with a spout member **50**. During transit, the tubular portion of the spout **50** is closed by way of a clip member **49** or is plugged at the end by a member not shown. The plate **30**, near its periphery, is formed with a passageway **54** through which a plastic tube **56** is inserted. Tube **56** is adapted to mate with the outer end of spout **50**. The tube's other end is adapted to mate with a passageway system **58** formed in plug member **28**. Passageway **58** extends outwardly through the periphery of lip **34** and has its inner end in communication with the interior of water tank **16**.

Referring now to FIG. **2** wherein the interior of the cabinet **12** is shown somewhat diagrammatically, it can be seen that the cold water tank **16** is communicated to the dispensing nozzle **60** by way of a tube **62**. Coils **64** of conventional refrigerating type surround the tank **16** and are for purposes of keeping the water in tank **16** at a refreshing temperature. In those water coolers having a heating unit such as unit **65**, a tubular vent stem **66** is utilized. The stem **66** is normally comprised of two parts; namely, a copper portion **68** adjoining the unit **65** and extending upwardly to a point where it is joined with a clear plastic tubular member **69**. The two tubes are joined together by way of a conventional fitting **70**.

The copper portion **68** will normally extend upwardly to a point near the top surface **70** of the cabinet. Beyond this point, the water is sufficiently cool that it does not damage the clear and transparent tube **69**. The tube **69** acts not only as a vent for unit **65** but also acts as a visual gauge indicating the amount of water remaining in the carton.

The hot water spigot is indicated by the numeral **72** and this spigot is communicated to the interior of the unit **65** by way of a copper tube **74**.

As seen from the aforementioned description, this invention provides a quick, inexpensive and simple way of converting the prior art water coolers to a bag and box operation. The delivery man merely removes the grommet **18** and inserts the adapter member **26**. The plate **30** provides a support for the container **24**. The user lifts the carton **24** to plate **30** and arranges the spout **50** to a position near the upper end of the plastic tube **56** and inserts the spout **50** therein. The clip **49** is then removed and the unit is ready for operation. There are, of course, many convenient handle means available to carry a seven or eight gallon cardboard box which means are not available to the glass bottle field. Hand grip apertures such as those shown by the numeral **78** can be used or a handle **80** can be secured to the top of the box. In any event, handling difficulties are very much reduced because no inversion is necessary and the weight of the bottles is substantially eliminated.

In a general manner, while there have been disclosed effective and efficient embodiments of the invention, it should be well understood that the invention is not limited to such embodiments as there might be changes made in the arrangement, disposition, and form of the parts without departing from the principle of the present invention as comprehended within the scope of the accompanying claims.

I claim:

1. In a water cooler of a type having a cabinet, a tank in said cabinet having an open upper end through the top wall of said cabinet for receiving the throated, open end of a large glass water bottle, refrigeration means to cool the water in said tank, a heater unit to receive and heat a portion of water received from said tank, a hot water nozzle and a cold water nozzle mounted exteriorly of said cabinet, and first and second conduit means respectively communicating said tank and said heater unit to said nozzles, the invention comprising

an adapter for utilizing plastic bag type containers enclosed within a corrugated container in place of said bottle and said adapter comprising

a plug member closing said open end of said tank,

an outwardly extending peripheral edge about the upper surface of said plug forming with said upper surface, a platform for said box, and

passageway means communicating the interior of said tank to the interior of said bag, wherein said passageway means extends through said plug member and a conduit connects the spout of said bag to said passageway means.

2. The invention of claim **1** wherein said heater unit is disposed below said tank and a vent tube extends upwardly from said unit to a point near the top of said container.

3. The invention of claim **2** wherein a heat-resistant tube communicates said tank to said unit and said vent tube is of a heat-resistant material in the vicinity of said heat unit.

4. The invention of claim **1** wherein sealing means are located between said plug member and said open end.

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