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BEER COOLER

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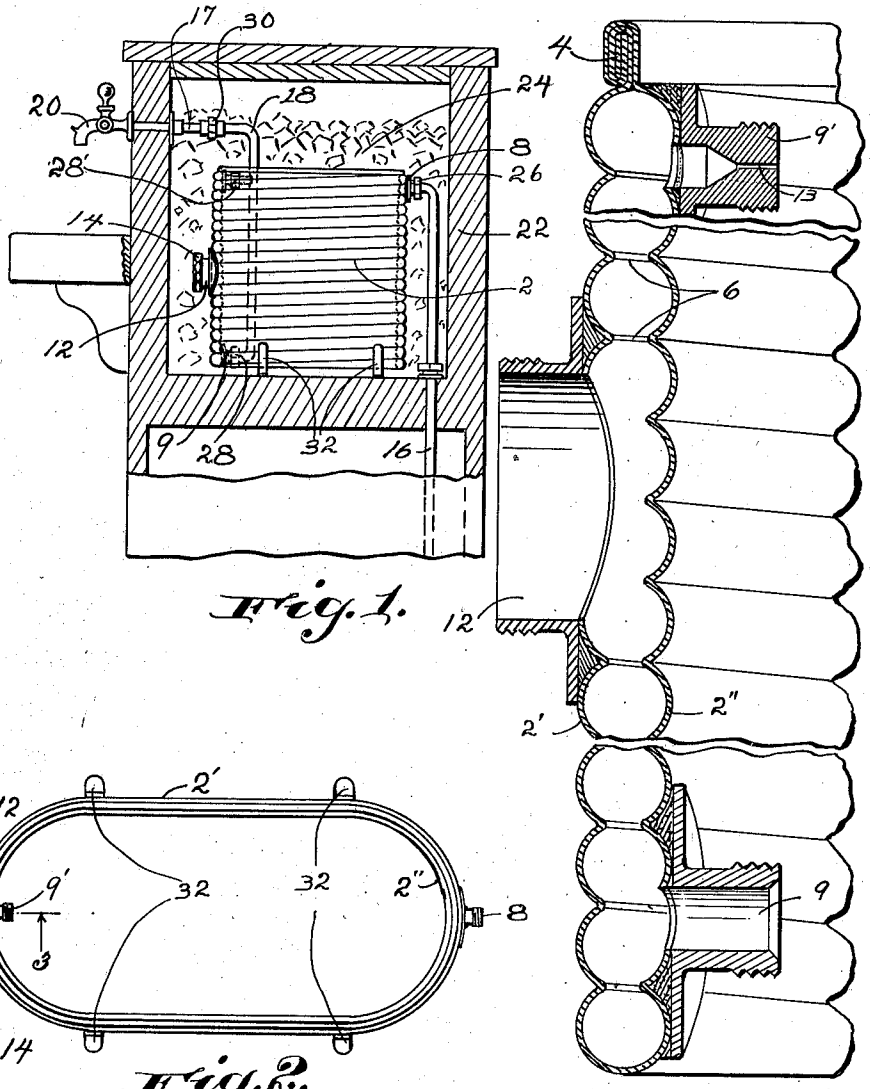


Fig. 1.

Fig. 2.

Fig. 3.

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BEER COOLER

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1 Claim. (Cl. 225—40)

The present invention relates to beverage coolers and more particularly to an apparatus for cooling beer.

The present method used in cooling this beverage usually comprises a coil of some thirty feet or more of block tin pipe, wound to make a cooling coil. The coil is then immersed in iced water for the purpose of conveying away the heat from the beer as it is conducted through the coil. This type of cooling unit is subjected to numerous objections, among which may be mentioned; difficulty in cleaning, the damage the coil receives when being repacked with ice, and its great relative expense for replacement.

One object of the present invention is to provide a cooling unit which is strong and durable, simple and inexpensive in its construction.

Another object is to provide a cooling unit that can be readily disconnected and removed from the cooling chamber for cleaning.

Still another object is to afford free and easy circulation for the beverage, which will reduce foaming caused by the agitation of the coiled pipes.

With the above and other objects in view as will hereinafter be apparent the several novel features of the invention in its preferred form will be more fully described in the accompanying drawing in which:

Fig. 1 is a sectional view of a cooling chest showing the cooling unit in operating position.

Fig. 2 is an enlarged top plan view of the cooling unit 2 shown in Fig. 1.

Fig. 3 is a fragmentary enlarged vertical sectional view of the cooling unit taken along the line 3—3 of Fig. 2.

The invention therefore consists of a cooling unit 2 which is constructed of a suitable material of relatively high heat conductivity. The walls 2' and 2'' are corrugated, giving an irregular surface to the unit. The top and bottom may be seamed as shown at 4 in Fig. 3, or fastened by soldering, or any convenient manner best suitable to its production.

The side walls 2' and 2'' are spaced apart so that a through channel 6 is left between the corrugations from top to bottom of the unit. This narrow channel or chamber 6 is calculated to be of such width that the beer will be sufficiently cooled from the time it is admitted at the top until it is withdrawn from the bottom.

Positioned near the top of the unit and connected with the chamber 6 is an inlet 8. Also connected with the chamber 6 and positioned near the bottom of the unit is an outlet 9. The inlet and outlet are provided with suitable connecting links, which are easily releasable to allow the unit to be taken out for cleaning. Conveniently located on the outer side wall 2' of the unit is a clean-out opening 12. If necessary and preferably on larger units these openings may be increased to any number. This opening is comparatively larger and is provided with a suitable cap 14 for closing the said opening when the unit is being used.

Connected with the inlet 8 is a supply pipe 16 which in turn is connected with the beer keg or beer supply. Connected with a pipe 17 leading to the faucet 20 is a pipe 18, which is connected with the outlet 9 at the bottom of the unit and an air outlet member 9' adjacent the top.

The cooling unit is placed within a cooling chest 22 and surrounded by a cooling medium 24, which is usually cracked ice and water. The upper beer inlet 8 is connected with the pipe 16 by the coupling 26 and the lower beer outlet 9 and the air inlet 9' are connected with the discharge pipe 18 by the couplings 28 and 28' respectively. A coupling 30 is inserted between the pipe 17 and the pipe 18 for allowing better opportunity in removing the cooling unit, also for allowing for the removal of the pipe 18, which necessarily requires cleaning.

In operation, pressure is admitted to the beer supply in the customary manner. The beer which always includes a small amount of air and gas is forced up the supply pipe 16 to the top of the unit 2 and through the inlet 8. The beer then moves down the irregular corrugated sides 2' and 2'' and settles along the bottom of the unit, while the air and gas remain at the top. When the faucet 20 is opened the beer is forced out of the outlet 9 through the pipe 18 and the pipe 17 to the faucet, the beer coming from the bottom of the cooling unit. The gas and air which has accumulated around the top of the unit will escape through the small opening 13 within the member 9' into the outlet pipe 18. This small opening 13 allows only a small and constant supply of gas to escape into the withdrawal pipe. The size of this opening is such that the amount of escaping gas is comparatively small to the volume of beer flowing through the pipe 18. This even distribution of gas into the draw-off pipe adjacent the faucet will provide for an even flow of beer therefrom and reduce excess foaming.

The unit is also provided with members 32 for supporting and spacing the unit from the bottom of the chest, which will allow for free circulation of water about the unit and iced particles. The

corrugations are preferably slightly inclined, this is designed to give the beer a slight circular motion which will aid in its cooling.

The advantages of this type of unit are numerous. The cost of manufacturing may be greatly reduced and its continuous corrugated side walls make it very durable and capable of withstanding rough usage. Another advantage is that air accumulating in the cooling unit will be at the top and will not be trapped in with the beer when being drawn, as is the case in a pipe coil, but will be collected and redistributed to the beer in such quantities as to prevent excess foaming. Also another advantage is that it may be easily taken out of the cooling chest and cleaned by removing the cap **14**. A small wire brush can be inserted through the opening **12** for contacting and scrubbing the inner surfaces of the side walls **2'** and **2''**, whereas with a coiled pipe the coil must be cleaned by a special apparatus usually operated under high pressure using a certain type of artificial pearls and small sponges. In outlying districts, road-side stands, boats, and similar places, it is difficult to get these coils cleaned, or too expensive to purchase a cleaning machine for cleaning only a few sets. Consequently draught beer can not be profitably, or conveniently handled in many locations.

While I have shown and described a preferred form of my invention it will be understood that I have done so merely for clarification and that my invention is best defined in the appended claim:

I claim:

A beer cooling unit comprising a closed circular container having two narrowly spaced corrugated vertical side walls, said corrugated side walls being sufficiently spaced apart to allow for free vertical passage of the beer between said walls, the top and bottom ends of said unit being open for allowing free passage of a cooling medium therethrough, an inlet opening for said beer adjacent the top of said container and an outlet opening adjacent the bottom thereof, said outlet opening having a beer dispensing tube connected thereto, a gas escape means of predetermined capacity connected between the gas space in the top of said container and the dispensing tube, the capacity of said gas escape means being relatively small in comparison to that of the dispensing tube, thereby allowing a small but constant amount of gas to enter the dispensing tube to mix with the beer flowing therethrough.

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