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Thompson

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[54] **PORTABLE KEG TAPPER**

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

[58] **Field of Search** ..... 222/146 C, 400.5, 400.7, 222/400.8, 395, 398, 399, 401; 137/212, 340

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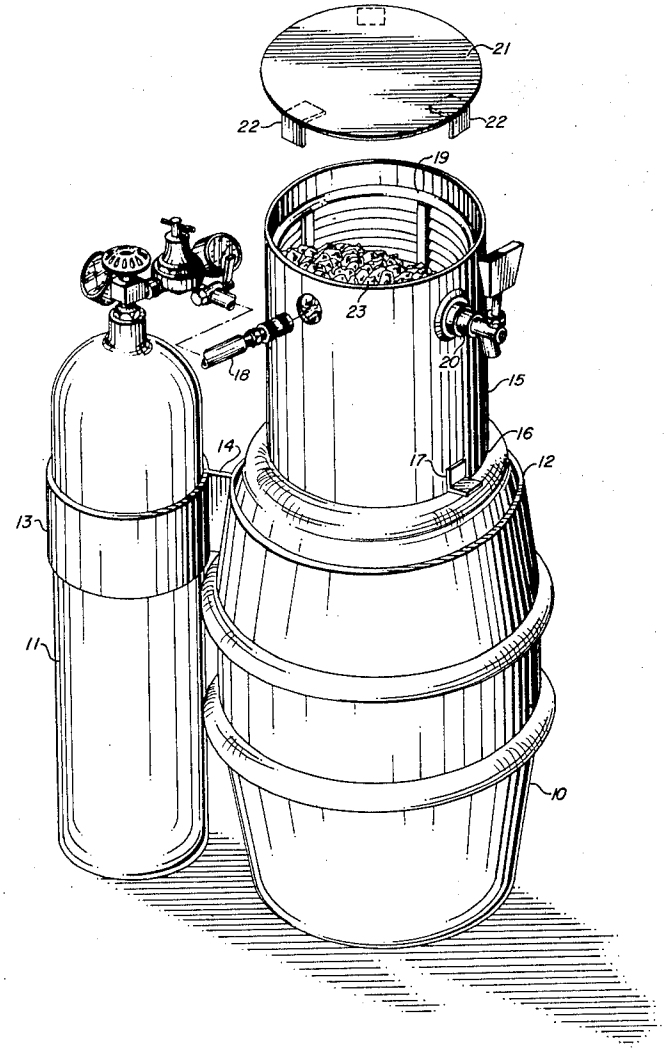
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[57] **ABSTRACT**

Portable apparatus is provided for tapping a beverage container such as a beer keg. A portable ice container adapted to be supported by the top of the keg has an opening in the bottom communicating with the tapping aperture of the keg. A dispensing faucet is carried by the ice chamber. A beverage delivery conduit is formed into a cooling coil inside the ice chamber. The inlet of the conduit terminates in a releasable coupling adapted to be attached to a conventional tapping pipe. The outlet of the conduit communicates with the dispensing faucet.

1 Claim, 2 Drawing Figures



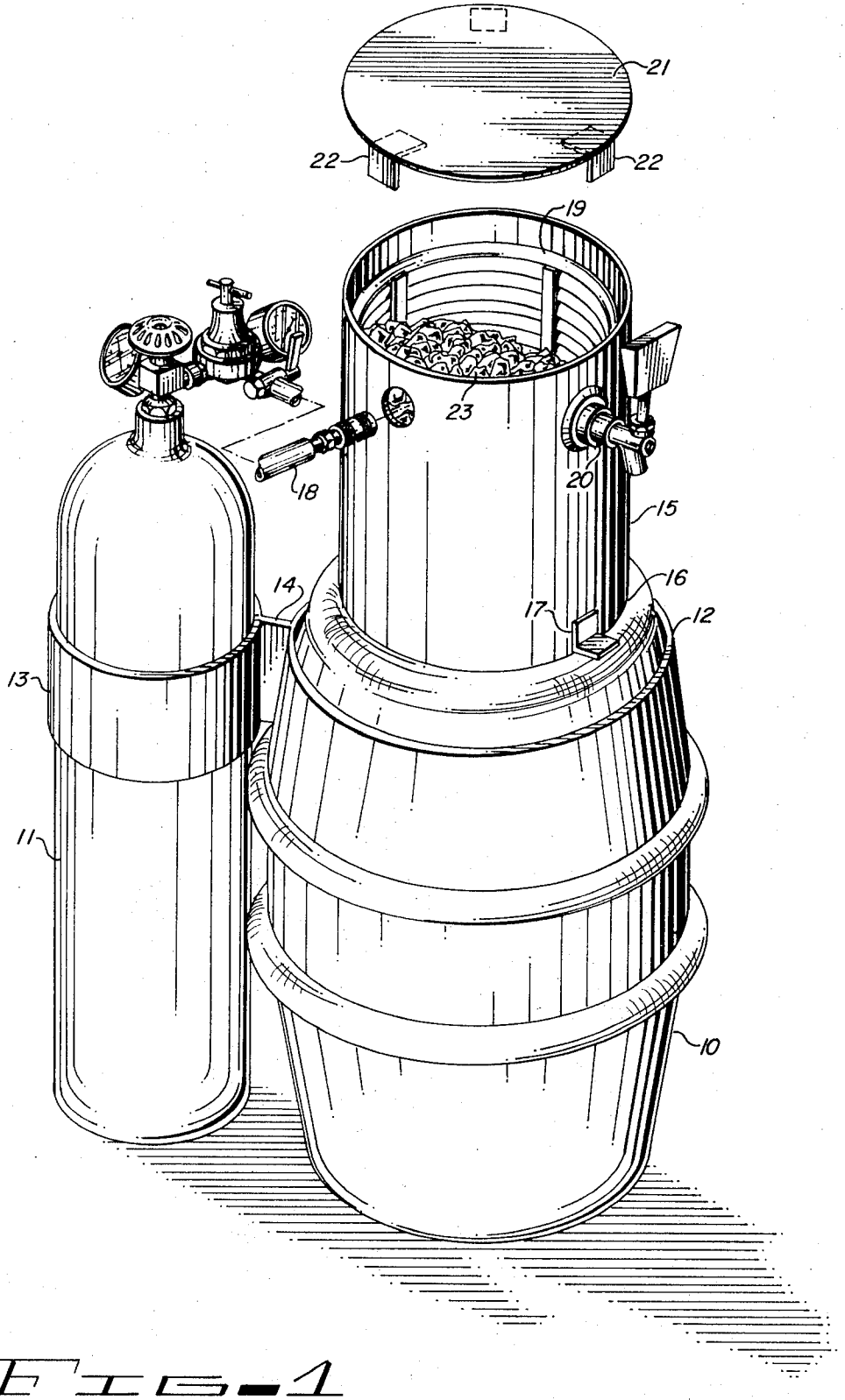


Fig-1

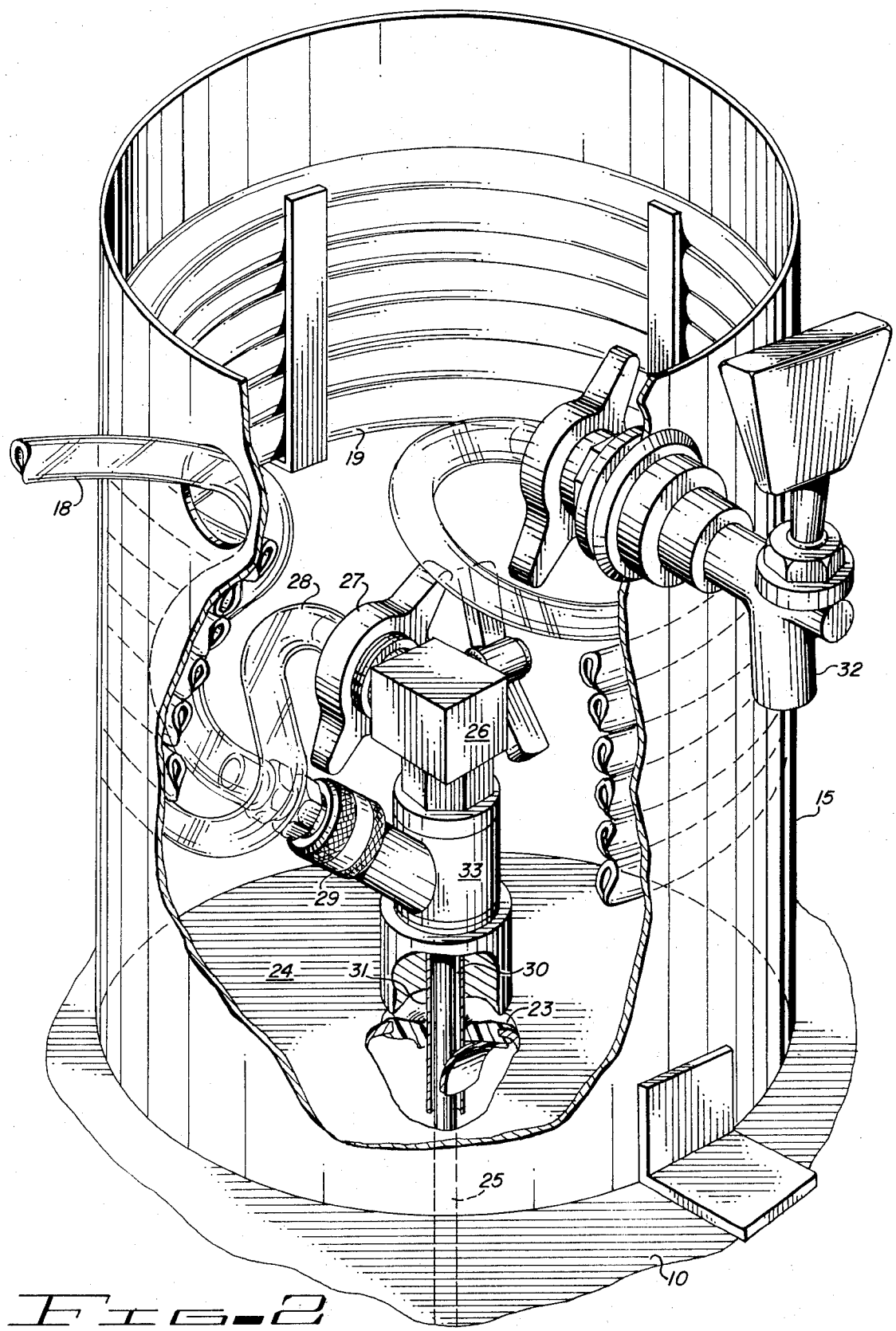


Fig-2

PORTABLE KEG TAPPER

This invention relates to portable apparatus for tapping a beverage container such as a beer keg.

More specifically, the invention concerns portable apparatus specially adapted for tapping a beer keg so as to practically eliminate the formation of foam when the beer is dispensed.

Even more particularly, the invention relates to apparatus for tapping a beer keg which is lightweight and comparatively inexpensive such that the apparatus is ideally suited for loaning or renting to the purchaser of a keg of beer.

When draft beer is dispensed at a permanent bar facility, the bar conventionally includes a sizable refrigerated cabinet which totally encloses the beer keg and all of the apparatus necessary to dispense the beer except for the dispensing faucet, itself. This system enables one to dispense beer from a keg with the formation of an absolute minimum of foam.

However, when beer is to be dispensed from a keg where no permanent bar facilities are available, provision must be made for conducting the liquid from the keg to the dispensing faucet, which may be located at some distance from the keg, varying from several inches to up to several feet. Under such circumstances, even though the beer keg, itself, may be cooled by immersion in icewater or by some other temporary expedient, the beer is not sufficiently cooled in the keg or in the lines between the keg and the faucet to prevent foam formation. Thus, in general, the use of the prior art portable beer keg tapping apparatus leads to the formation of great quantities of foam when the beer is dispensed and it would not be uncommon for each glass of beer withdrawn from the keg to have a "head" of at least 50 percent or more.

It would therefore be highly desirable to provide portable beer keg tapping apparatus specially adapted to prevent the formation of undue amounts of foam when the beer is dispensed. It would also be highly desirable to provide such apparatus which is lightweight and of very economical manufacture so as to facilitate lending or renting the apparatus to the purchaser of an individual keg of beer for use at home or at some other location where permanent bar facilities are unavailable.

It is therefore an object of the invention to provide a portable beer keg tapping device.

Another object of the invention is to provide a portable tapping device which can be easily utilized by a person who is generally unfamiliar with the procedures in tapping a beer keg.

Still another object of the invention is to provide a portable beer keg tapping device which is light-weight and of simplified and more economical construction.

These and other, further and more specific objects and advantages of the invention will be apparent to those skilled in the art from the following detailed description thereof taken in conjunction with the drawings, in which:

FIG. 1 is a perspective view of a typical beer keg fitted with portable tapping apparatus in accordance with the presently preferred embodiment of the invention; and

FIG. 2 is a cutaway perspective view of the portable tapping apparatus of FIG. 1 showing the details of construction of the presently preferred embodiment.

Briefly, in accordance with my invention, I provide portable apparatus for tapping a beer keg. This apparatus is specially adapted for use in tapping a typical keg of the type which includes generally cylindrical side walls enclosed by a top and a bottom and which is provided with means defining a normally sealed tapping aperture in the top of the keg. The sealing aperture is automatically opened when a tapping assembly is slidably, sealingly inserted therethrough. The tapping assembly includes an elongate rigid pipe dimensioned to extend from substantially the bottom of the keg upwardly through the tapping aperture. The tapping pipe terminates at its upper end in means for releasably attaching a beer-delivery conduit. A gas-delivery pipe is formed coaxially around the upper portion of the tapping pipe to extend into the upper portion of the keg when the tapping assembly is inserted through the tapping aperture. The inside diameter of the gas-delivery pipe is larger than the outside diameter of the tapping pipe. The annular space between the tapping pipe and the gas-delivery pipe communicates with means for releasably connecting the gas-delivery pipe to a source of gas under pressure.

For use in combination with the above-described typical beer keg and tapping assembly, I provide, in accordance with my invention, means defining a portable ice container chamber having an aperture in the bottom thereof communicating with the tapping aperture in the top of the beer keg. A beer-dispensing faucet carried by the cooling chamber is connected by means of a beer-delivery conduit to the upper end of the tapping pipe. The beer-delivery conduit forms a cooling coil inside the ice container chamber.

Turning now to the drawings, which depict the presently preferred embodiment of the invention, for illustrative purposes, FIG. 1 illustrates a conventional beer key **10** and a pressurized gas bottle **11** connected by means of a special coupling bracket consisting of a band member **12** shaped and sized to be received over the top of the beer keg **10** and a band member **13** shaped and sized to slip over and around the upper end of the gas bottle **11**, connected by a web member **14.** This device provides a convenient and effective means of locating the gas bottle **11** in close proximity to the keg **10** and to reduce the possibility that the gas bottle **11** will be accidentally tipped over, resulting in damage to the apparatus and possible injury to persons in the vicinity. An ice container chamber consisting of a hollow cylinder member **15** is preferably dimensioned to be frictionally engaged within the recess **16** normally formed in the upper end of a beer keg. A bracket **17** is provided to further insure that the cylindrical member **15** is properly seated in the recess **16.** Pressurized gas from the bottle **11** flows through the conduit **18** and is conducted into the upper portion of the keg **10,** as will be described later.

Beer is forced from the keg under pressure through the beer-delivery conduit coil **19** and thence to the delivery faucet **20.** A cover **21** preferably provided with downwardly depending locating tabs **22** closes the top of the cylindrical member **15.** Ice **23** is placed within the cylindrical member **15** to refrigerate the beer flowing through the conduit **19** prior to dispensing the beer through the faucet **20.**

The portable beer-dispensing apparatus depicted in FIG. 1 is illustrated in further detail in FIG. **2,** which shows the cylindrical member **15,** the open bottom of

which surrounds and encloses the conventional beer-tapping aperture **23** formed in the upper end **24** of the keg **10.** As shown in FIG. **2,** a conventional tapping assembly is inserted through the aperture **23** and consists of an elongated rigid tapping pipe **25** extending from the bottom of the keg upwardly through the tapping aperture and communicating at its upper end through valve **26** with a screw-on connection **27** to the inlet end **28** of the beer-delivery conduit **19.** Gas from the pressurized gas bottle **11** flows through conduit **18** and a quick-release coupling **29** which communicates with the annular space **30** between a gas-delivery pipe **31** formed coaxially around the upper end of the tapping pipe **25** and extending through the tapping aperture **23** into the upper portion of the keg **10.**

In operation, gas from the bottle **11** exerts a constant pressure on the top of the liquid in the keg **10.** When the faucet **32** is open to dispense beer, gas flows through the conduit **18,** through the quick-release coupling **29** into the annular space **30** between the gas-delivery pipe **31** and the tapping pipe **25** and thence into the interior of the keg. The beer in the keg **10** is forced upwardly through the tapping pipe **25** through the valve **26** and flows through the coiled beer-delivery conduit **19** where it is cooled by heat transfer to the ice **23.** The cooling of the beer in the conduit **19** is sufficient to prevent undue formation of foam in the container into which the beer is dispensed from the faucet **32.**

The materials of construction of the various elements of the invention will be apparent to those skilled in the art. In the presently preferred embodiment of the invention, I employ a flexible plastic tubing commercially available under the trade name "Tygon" to form the beer-delivery conduit **19,** although any other suitable plastic or sufficiently flexible metal could be employed, so long as the material is compatible with the beverage being dispensed.

The elements comprising the tapping assembly, i.e., the tapping pipe **25,** the gas-delivery pipe **31,** the quick-release coupling **29,** the valve **26** and the associated body portion **33** are the same assembly elements conventionally employed in permanent bar dispensing installations.

The formation of foam when beer or other naturally or artificially carbonated beverages are dispensed results from the dissolution of carbon dioxide, either as a result of the temperature of the liquid being too high or as a result of the pressure on the liquid being too low. Thus, the exact length of the beer-delivery conduit between the discharge end of the tapping pipe and the dispensing faucet will vary depending on a number of factors such as the heat transfer and pressure drop characteristics of the conduit, the temperature of the beer in the keg and the internal pressure required to force the beer out of the keg. The tapping pressure required varies widely with different brewing firms. For example, approximately 18 psig internal pressure is required to tap the beer kegs currently supplied by the Coors brewery, whereas only approximately 5 psig is required to tap a keg of Olympia beer. Similarly, variations in the temperature of the beer in the keg may be encountered depending on the exact method of cooling the keg. Depending on the temperature of the beer in the keg, it may be necessary to vary the length of the line to achieve the desired degree of cooling of the beer just prior to dispensing it from the faucet. Persons skilled in the beer-dispensing art will recognize these factors and will be able to choose an appropriate size, type and length of beer-delivery conduit to achieve the desired result with a minimum of routine experimentation, having regard for the disclosure hereof. In a presently preferred embodiment of the invention, I employ a 3/16 in. I.D. plastic beverage hose supplied by Perlick Manufacturing Co. When used in tapping a key of Coors beer, I employ a length of line not exceeding 20 feet and preferably about 11 feet where the beer keg is to be cooled by immersion in an icewater bath. On the other hand, for dispensing Olympia beer, it is only necessary to employ approximately 2–3 feet of the 3/16 in. I.D. Perlick tubing.

Having described my invention in such clear and concise terms as to enable those skilled in the art to understand and practice it, and having identified the presently preferred embodiment thereof, I claim:

1. Portable apparatus for tapping a beer keg, said key including

a generally cylindrical side wall closed by a top and a bottom and having a recess formed in the upper end thereof, and

means defining a normally sealed tapping aperture in the top of the keg which is automatically opened when a tapping assembly is slidably sealingly inserted therethrough,

said tapping assembly including

an elongate rigid pipe dimensioned to extend from substantially the bottom of said keg upwardly through said tapping aperture and terminating at its upper end in means for releasably attaching a beer-delivery conduit thereto, and

a gas-delivery pipe formed around the upper portion of said tapping pipe to extend coaxially into the upper portion of said keg, the inside diameter of said gas-delivery pipe being larger than the outside diameter of said tapping pipe, the annular space between said pipes communicating with means for releasably connecting said gas-delivery pipe to a source of gas under pressure,

said apparatus comprising:

a. a portable ice-containing cooling chamber having the lower end thereof sized and shaped to be received within the recess in the upper end of said keg and having an aperture in the bottom thereof communicating with the tapping aperture in the top of said keg;

b. a beer-dispensing faucet carried by said cooling chamber; and

c. beer-delivery conduit means forming a cooling coil inside said ice-containing chamber, the inlet of said conduit means terminating in means for releasably coupling said coil to the upper end of said tapping pipe and the outlet thereof communicating with the inlet of said dispensing faucet.

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