

No. 748,496.

PATENTED DEC. 29, 1903.

O. F. HAGER.
BEER COOLER.

APPLICATION FILED MAY 31, 1900.

NO MODEL.

3 SHEETS—SHEET 1.

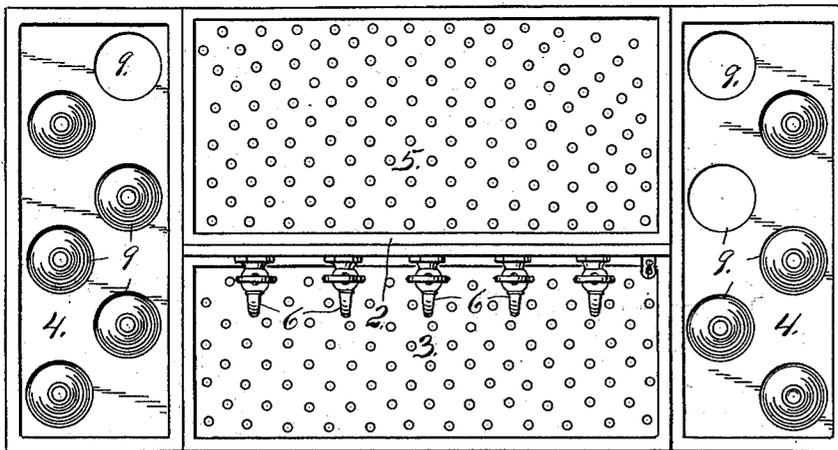
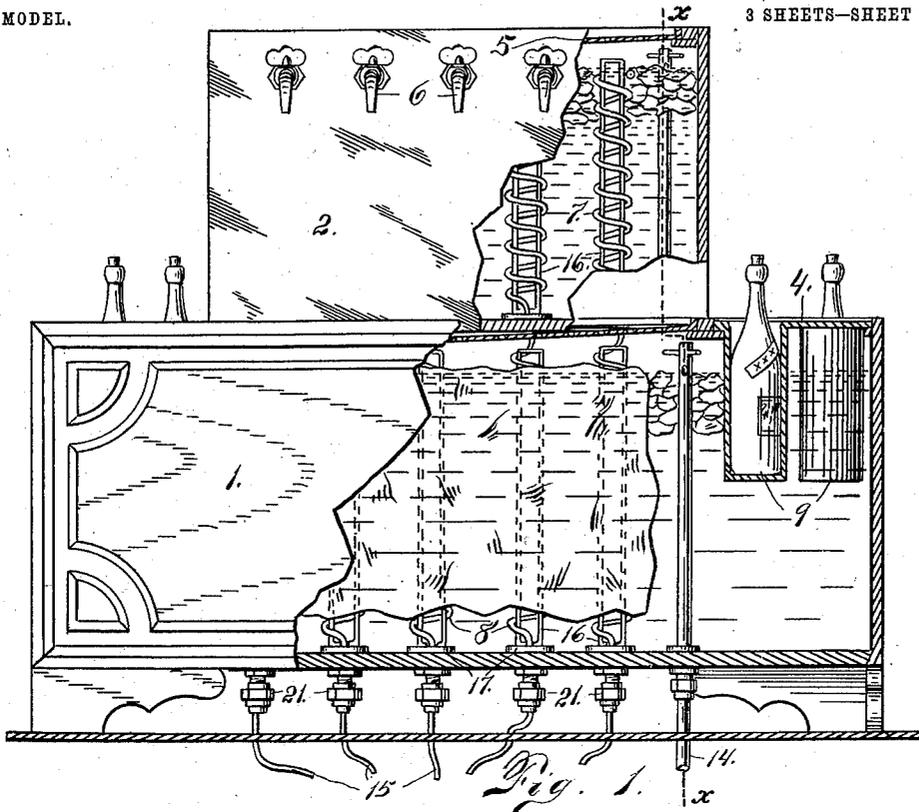


Fig. 2.

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3 SHEETS—SHEET 2.

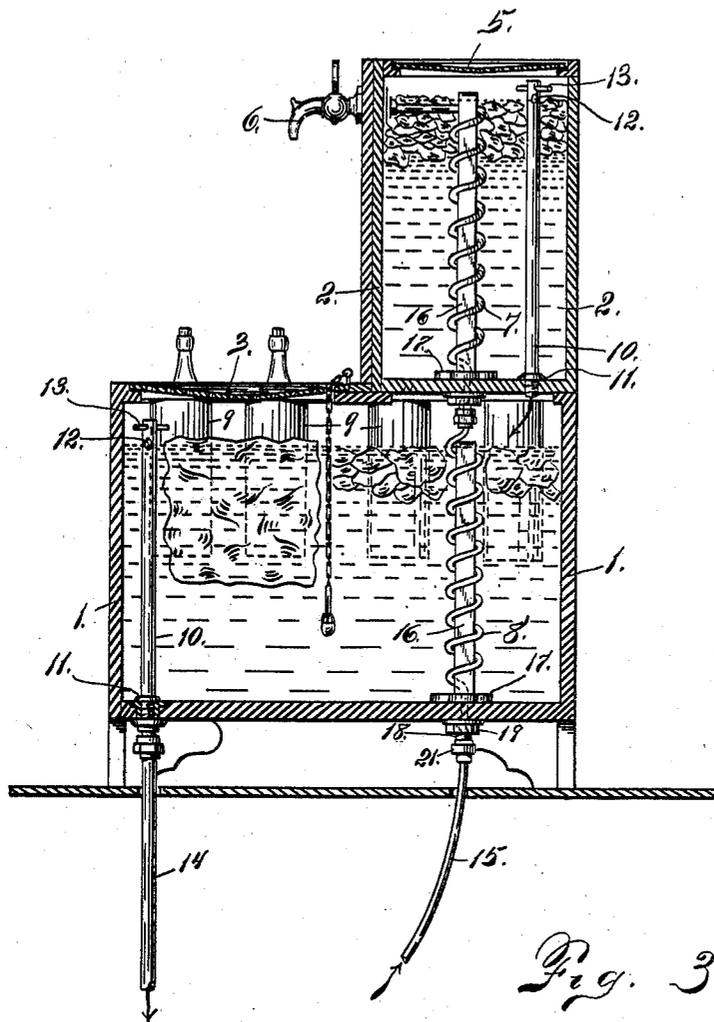


Fig. 3.

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3 SHEETS—SHEET 3.

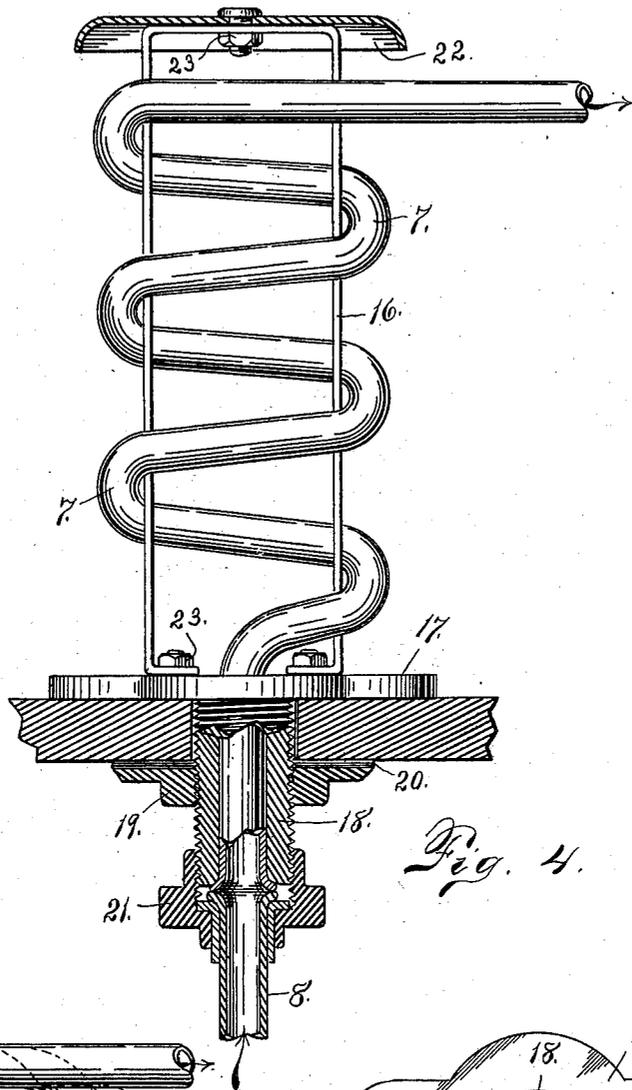


Fig. 4.

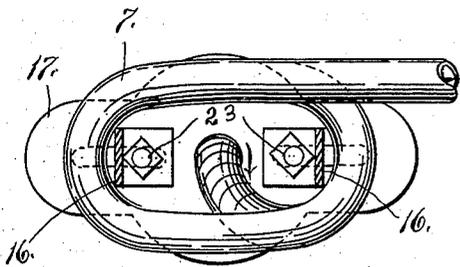


Fig. 5.

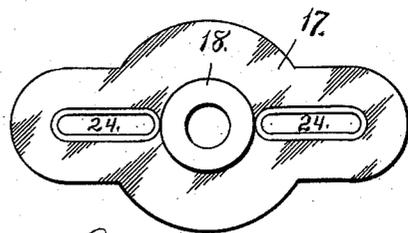


Fig. 6.

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UNITED STATES PATENT OFFICE.

OTTO F. HAGER, OF BUFFALO, NEW YORK.

BEER-COOLER.

SPECIFICATION forming part of Letters Patent No. 748,496, dated December 29, 1903.

Application filed May 31, 1900. Serial No. 18,507. (No model.)

To all whom it may concern:

Be it known that I, OTTO F. HAGER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Beer-Coolers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention relates to improvements in coolers for beer and other liquids, and more particularly to that class of coolers in which the liquid to be cooled is carried through coils of pipes submerged in ice-water.

The objects of my invention are to simplify the construction and reduce the cost of the supports upon which the cooling-pipes are coiled and to improve the construction of the couplings or connections between adjacent coils.

In the drawings, Figure 1 is a front elevation of a cooler arranged according to my invention with portions broken away to show construction. Fig. 2 is a top plan view of the same. Fig. 3 is a cross-section of the cooler, taken through the line X X of Fig. 1. Fig. 4 is a detail view showing the particular arrangement of the combined coupling and coil-standard employed. Fig. 5 is a top plan view of the same, partially in section; and Fig. 6 is a bottom face view of the floor-plate and detail of coupling.

Referring to the drawings, 1 and 2 indicate two separate refrigerating chambers or vessels placed one upon the other. These vessels are made water-tight and might also be insulated by jacketing or otherwise, so as to retain the refrigerant action of the iced water. The vessel 1, as seen in the drawings, is of larger proportions than the vessel 2, and arranged within the projecting portions 3 and 4 4 are the drip-pan and bottle racks or pockets, respectively. A second drip-pan 5 is placed over the vessel 2. These drip-pans 3 and 5 are made removable for the introduction of the ice and water to the vessels.

6 represents the supply-cocks or faucets. These are secured in the front wall of the vessel 2 over the drip-pan 3 and communicate with the coils 7 in the vessel 2. These coils 7 are mounted upon a particularly-devised standard, which will be fully hereinafter de-

scribed, and at the base of the standards the coils communicate through couplings with other coils 8, which are also mounted on similar standards secured in the vessel 1, and the lower ends of these coils 8 communicate with the supply-pipes 15 through a similar coupling connected to said supply-pipes.

The bottle racks or pockets 4 are also made removable for ready cleaning and consist of a series of cylindrical chambers 9, made water-tight and suspended into the vessel 1, thus surrounding them with the ice-water of said vessel and imparting a refrigerating action to a bottle placed in one of said pockets, at the same time keeping the bottles free from contact with the iced water and preserving the labels usually placed on said bottles.

By the particular disposition of the bottle-racks 4 and coils 8 it will be seen that a clear space is left in the vessel 1 equal to the area of the drip-pan 3, thus permitting large pieces of ice to be introduced into this vessel and necessitating a less frequent supply of ice, as well as producing a more effective refrigeration.

The overflow-pipes of the vessels 1 and 2 are of similar construction and consist of the vertical pipes 10, threaded into the collars 11 at their lower ends and having the inlet-holes 12 at their upper ends and provided with the cross-pieces 13 for turning the pipe as it is threaded into position. While the inlet-holes 12 regulate the water-levels in the vessels 1 and 2, the pipes 10 might be entirely removed to further reduce the water-levels or in emptying the vessels for cleaning. The collar 11 in the vessel 2 communicates with the vessel 1, and the collar 11 in the vessel 1 is coupled to and communicates with the waste-pipe 14.

The standards employed for supporting the pipe-coils 7 and 8 and the couplings through which the coils communicate with each other and with the supply-pipes are particularly devised for coolers of this class and are constructed as follows, viz:

16 is a U-shaped strip of band-iron, the ends of which are bolted to the floor-plate 17 by the bolts 25. (See Figs. 4 and 5.) The floor-plate 17 is of sufficient area to insure a rigid support to the standard 16 bolted to it and has projecting from its lower face the

threaded sleeve 18. This threaded sleeve forms a passage-way through the floor-plate and is arranged to project through the floors of the vessels 1 and 2. To rigidly secure the standards and plates in place and at the same time form a water-tight joint at this point, the washer 20 and nut 19 are threaded over the protruding end of the sleeve 18.

The coil 7 is wound around the standard 16, as seen in Fig. 4, its upper end passing off on a horizontal line to one of the faucets 6 of the vessel 2 and its lower end passing through the center of the plate 17 and entering the sleeve 18, where it is connected with the upper end of the coil 8 by the coupling 21. The coil 8 is similarly wound around the standard 16 in the vessel 1. This standard and coupling is of similar construction as that just described, and through this coupling 21 the coil 8 connects with the supply-pipe 15.

It will be seen that the standards 16, which are formed by the bending of a stiff piece of band-iron, can readily be made of any desired length, and the vertical sides of the standard 16 might also be adjusted to and from each other, according to the breadth of loop into which it is formed. The securing-bolts 23, passing through elongated openings 24 in the floor-plate 17, may readily be adjusted to the desired breadth, thus producing a coil which is either circular, elliptical, or oblong in cross-section, or a short or long coil may be made without any material change in the construction of the standard and coupling.

It will be seen that an open or closely-wound coil may be supported by the standard just described, and as it is frequently designated that a given length of soft-metal coil is to be used such length of coil may be wound around the standard and the coil thus formed pulled out, so as to equally distribute it along the standard. In the accompanying drawings open coils are shown, allowing a free circulation of the iced water around them.

In Fig. 4 I have shown a disk or protecting plate, which is bolted to the upper end of the standard 16. This plate 22 protects the upper portion of the coil as the ice is introduced into the vessel.

In operation it will be seen that in coolers constructed as above described the vessels 1 and 2 are filled with water to the desired level and sufficient ice introduced to reduce the temperature of the water as desired. The liquid to be cooled is forced through the coils 7 and 8 and drawn off through the faucets 6, and if it is desired to cool liquid in bottles the bottles are placed in the pockets 9, where their temperature is reduced by the action of the iced water surrounding said pockets.

In place of the band-iron 16 a cast-iron standard might be formed integral with the floor-plate 17, or the entire vessel 2 might be dispensed with and the coils 8 communicate direct with the supply-cocks 6, and other minor details within the scope of the following claims might be resorted to without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a beer-cooler, the combination of a casing, a floor-plate secured to the bottom of the casing and having an opening or passage, a coil-standard consisting of an inverted-U-shaped frame having the lower ends of its branches secured to the upper side of said floor-plate on opposite sides of its opening, and a cooling-pipe coiled around said standard and passing through the opening of the floor-plate, substantially as set forth.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

OTTO F. HAGER.

Witnesses:

O. E. HODDICK,
DANIEL MCINTOSH.