

No. 736,221.

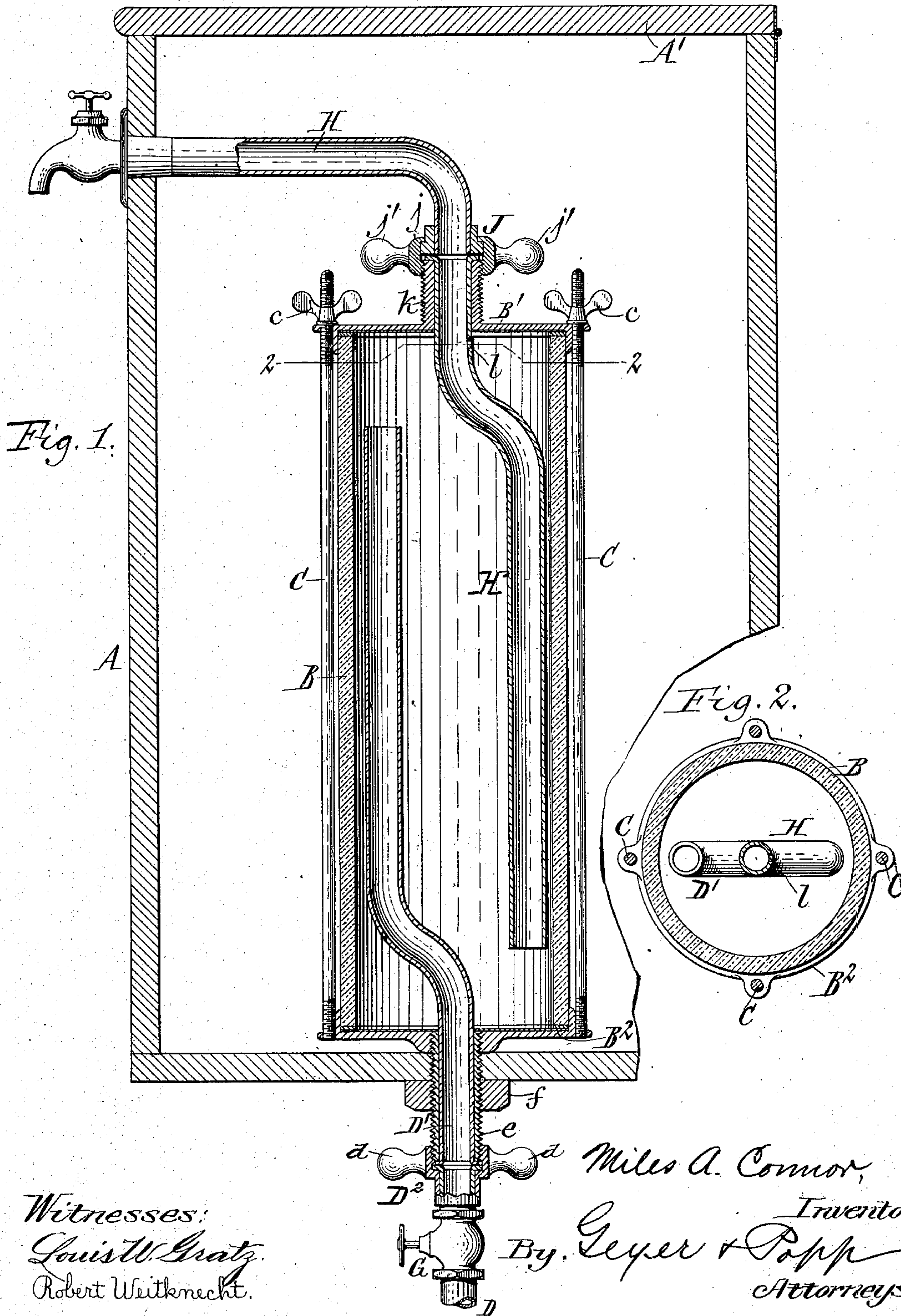
PATENTED AUG. 11, 1903.

M. A. CONNOR.

LIQUID COOLER.

APPLICATION FILED FEB. 6, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

MILES A. CONNOR, OF LOCKPORT, NEW YORK.

LIQUID-COOLER.

SPECIFICATION forming part of Letters Patent No. 736,221, dated August 11, 1903.

Application filed February 6, 1903. Serial No. 142,196. (No model.)

To all whom it may concern:

Be it known that I, MILES A. CONNOR, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented new and useful Improvements in Liquid-Coolers, of which the following is a specification.

This invention relates to the class of coolers designed more especially for cooling beer and comprising a tank containing ice, a liquid-chamber embedded in the ice, an inlet or supply pipe leading from the barrel or other receptacle to the liquid-chamber, and a discharge-pipe leading from the chamber to the dispensing-faucet.

One object of my invention is to so arrange the inlet and discharge pipes of the cooling-chamber as to withdraw the liquid from the coolest portion of the chamber and at the same time prevent the incoming uncooled liquid from commingling with the cooled liquid, thereby discharging the liquid at a correspondingly lower temperature.

A further object of the invention is to provide the apparatus with an efficient vent which, while preventing leakage of liquid from the cooling-chamber, insures the complete filling of the chamber at all times, thus always utilizing the full cooling capacity of the apparatus.

In the accompanying drawings, Figure 1 is a sectional elevation of the apparatus. Fig. 2 is a horizontal section of the cooling-chamber in line 2 2, Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

A indicates the outer box or tank of the cooler, having a door or cover A' at its top for introducing the ice or other refrigerating agent.

B is the cooling-chamber arranged in the tank and consisting, preferably, of an upright glass cylinder and metallic heads B' B², applied to its ends and clamped against the same by longitudinal tie-rods C. To the upper end of these rods are applied thumb-nuts c, which upon being removed permit the separation of the upper head and the cylinder for cleaning these parts when necessary. Gaskets of rubber or other suitable material are interposed between the glass cylinder and its heads to form tight joints.

D is the liquid-supply pipe leading from a barrel or other source of supply, (not shown in the drawings,) and D' the inlet-pipe of the cooling-chamber, which is connected with the supply-pipe by a union D² or other suitable joint. This inlet-pipe extends upwardly into the cooling-chamber B through a tube or nipple e, depending from the lower head of the chamber. This nipple passes through the bottom of the ice-tank A and is externally screw-threaded to receive a clamping-nut f, which bears against the under side of the tank for holding the cooling-chamber firmly in place. A valve G is preferably arranged in the supply-pipe D for shutting off the flow of liquid to the cooling-chamber while cleaning or repairing the same.

As shown in Fig. 1, the inlet-pipe extends nearly to the top of the cooling-chamber, so as to deliver the uncooled liquid into the upper portion thereof.

H H' indicate the discharge-pipe of the apparatus, which passes upwardly through the top of the cooling-chamber and extends through the wall of the tank A, where it terminates in a suitable faucet or valve I. This pipe is preferably composed of two sections, which are connected at the top of the cooling-chamber by a suitable union-joint J. The nut j of this joint engages with a screw-threaded nipple k, which extends upwardly from the top head of the cooling-chamber and through which the lower section H' of the discharge-pipe passes, the upper end of this section being flanged outwardly and clamped between the end of said nipple and the opposing member of the union-joint. This joint permits the cooling-chamber to be detached from the upper horizontal section H of the discharge-pipe for cleaning it. The nuts of the unions D² and J may be provided with knobs or handles d and j', respectively, for conveniently turning the same.

The lower section of the discharge-pipe extends nearly to the bottom of the cooling-chamber, as shown, so as to receive the liquid from the lowest or coolest portion of the chamber. The inlet and discharge pipes of this chamber preferably pass centrally through the heads B' B² of the chamber and are offset or bent outwardly, as shown at b b', for clearing each other. This offset brings the pipes

close to the sides of the chamber, and each continues in a course parallel to the side of the chamber to a point near the head opposite that by which it entered.

5 By terminating the inlet-pipe near the top of the cooling-chamber and the discharge-pipe near the bottom of the same the incoming uncooled liquid is prevented from comingling at once with the coolest liquid in
10 the lower portion of the tank and reducing the temperature of the same. The agitation produced by the incoming liquid takes place in the top of the chamber remote from the region where the liquid is coldest, the entering liquid descending quietly as it becomes
15 cooled and finally mingling with the liquid in the bottom of the cooling-chamber, thus always drawing the liquid from the coldest level.

To permit the air to escape from the cooling-chamber and avoid the formation of an air-cushion above the liquid, the discharge-pipe H' is provided at or near the upper head B' with a vent-opening I. The air in the chamber enters the discharge-pipe through
20 this opening and escapes through the faucet in drawing liquid. By thus combining the vent with the liquid-discharge pipe the liquid while being permitted to completely fill the cooling-chamber cannot leak therefrom, as it
25 30 could if a vent-aperture were formed in the

top of the chamber, and the chamber is at the same time vented automatically in the act of opening the dispensing-faucet, thus always obtaining the maximum cooling capacity of the apparatus.

I claim as my invention—

In combination in a beer-cooler, a cooling-chamber vertically disposed, an inlet-pipe entering centrally through the lower head, an outlet-pipe extending centrally through the
40 upper head, each of said pipes being bent laterally adjacent to the head and within the chamber and said bends extending in opposite directions with respect to each other and each pipe having a straight terminal portion,
45 that of the inlet-pipe opening within the chamber at or near its upper end and that of the outlet-pipe being located within the chamber at or near the lower head, said straight portions being located at the greatest distance
50 from each other whereby the cool liquid will be subject to the minimum extent to the influence of the incoming warm liquid.

Witness my hand this 3d day of February, 1903.

MILES A. CONNOR.

Witnesses:

CARL F. GEYER,
EMMA M. GRAHAM.