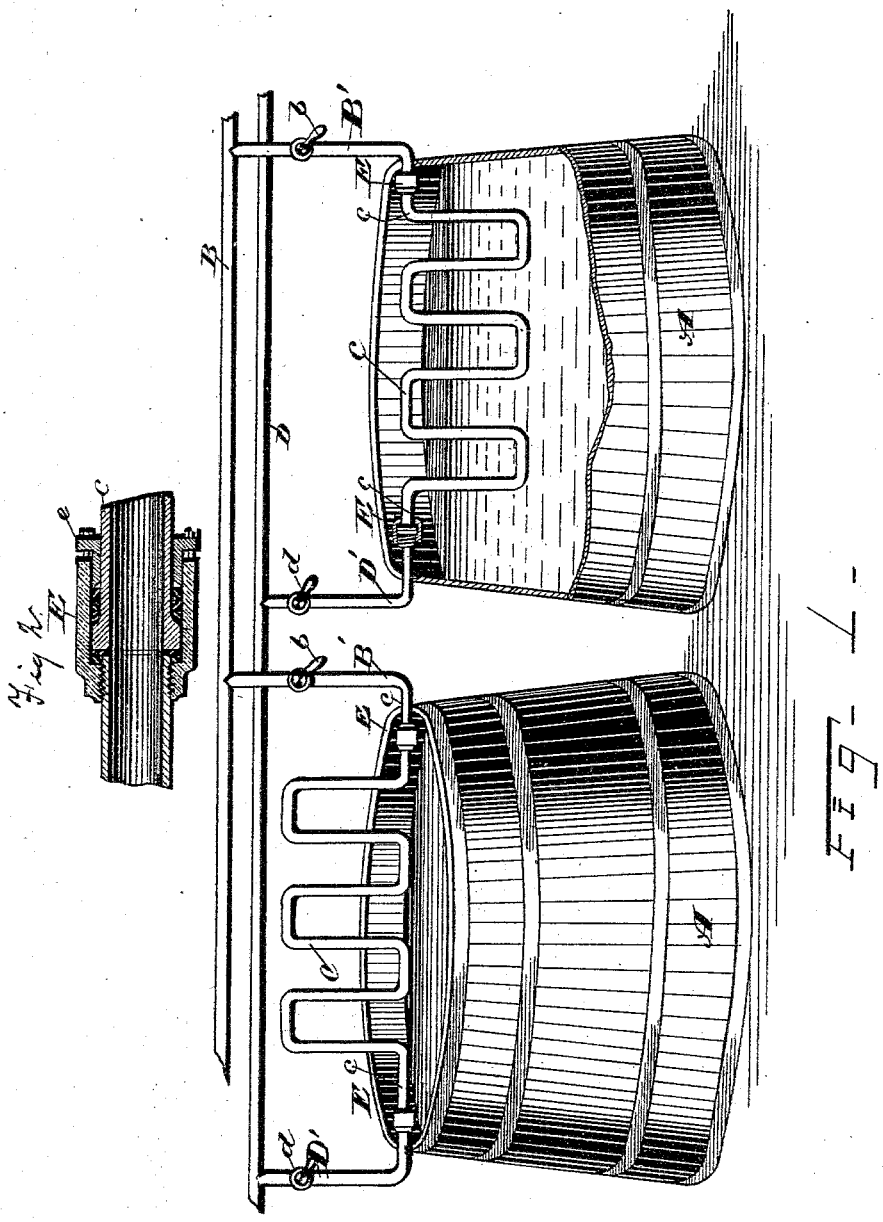
(No Model.)

L. SCHLATHER.

BEER COOLING APPARATUS.

No. 301,394. Patented July 1, 1884.



WITNESSES

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BEER-COOLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 301,394, dated July 1, 1884.

Application filed April 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, LEONARD SCHLATHER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Beer-Cooling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to adjustable cooling apparatus, designed more especially for cooling beer, the object being to provide coils of pipes arranged in a system of pipes through which some cooling agent is passed, and jointed to the other pipes in such a manner that the coil may be turned on its axis and raised out of or lowered into the liquid in the tub over which the coil is located, and without interrupting the passage of the cooling agent through the system of pipes or through the coils.

With these objects in view my invention consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claim.

In the process of making beer, after various steps, the liquid is placed in large tubs, where it remains for fermentation. During this process of fermentation it is essential that the liquid be kept at a given low temperature. To accomplish this end various cooling devices are in use, consisting, usually, of vessels called "floats," packed with ice and more or less submerged in the liquid undergoing fermentation. Such devices are cumbersome and inconvenient, requiring considerable labor to keep them packed with ice, and have frequently to be raised out of or lowered into the liquid, and are in the way when the liquid is drawn off and the tubs are to be cleaned.

My invention consists, essentially, in the arrangement of coils of pipe in a system of pipes through which some cooling agent is made to pass, and the coils so connected and supported that they may be turned on their respective axes, so that each coil may be lowered more or less into the liquid in the tubs, or turned up out of the tub and out of the way, as may be required, and without interrupting the flow of the cooling agent through the coils and system of pipes.

In the accompanying drawings, Figure 1 is a view in perspective of two fermenting-tubs with my improved coils attached. A portion of the right-hand tub is broken away to show the coil in its lowered position, extending into the tub. Fig. 2 is an enlarged longitudinal section showing one manner of constructing the joints between the coils and other pipes.

A represents the tubs in which the beer is placed for fermentation. B is an induction-pipe provided with the branch pipes B′, leading, respectively, to the coils C, and provided each with a valve, *b*. D is an eduction-pipe provided with the branch pipes D′, leading from the respective coils, and provided each with a valve, *d*. The ends of each coil C turn in opposite directions, as shown, and are journaled in stuffing-boxes E, that allow the coil to be turned on its axis and lowered into or raised out of the liquid in the tub over which the coil is located with the coil in open relation with the pipes B′ and D′, that support it.

The stuffing-boxes may be made in several well-known forms, one of which is shown in Fig. 2, where the part E is screwed onto one of the pipes B′ or D′, and provided with the gland *e*, that forces the packing around the pipe *c*. The gland *e* may be screwed up and compress the packing so firmly around the pipe *c* that the coils will remain in any position in which they are placed, by means of which the coils may be made to extend more or less into the liquid in the tubs, as may be required to regulate the temperature, and may be turned up out of the way, as shown at the left-hand coil, but without interfering with the flow of the cooling agent. The system of pipes and coils may be extended over any number of tubs desired. The cooling agent is made to pass, by gravity or otherwise, through the pipe B and its branches, and after passing the coils is received and discharged through the pipe D, as aforesaid. If a cooling-chamber above is used, the cooler and heavier liquid in the pipe B will force the warmer and consequently lighter liquid from the coils back to the cooling-chamber, and thus a constant

circulation may be had. Various cooling agents may be employed. Brine and other liquids are used; also air and ammoniacal vapor, any of which may be used to advantage with my improved apparatus.

What I claim is—

An apparatus for cooling beer, consisting, essentially, of a system of pipes located above the fermenting-tub, and a bent or coiled pipe in communication with the system of pipes, the ends of said coiled or bent pipe being journaled, whereby the coil can be turned on its axis the arc of a circle, all of the above parts being combined substantially as and for the purpose set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 29th day of March, 1884.

LEONARD SCHLATHER.

Witnesses:

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