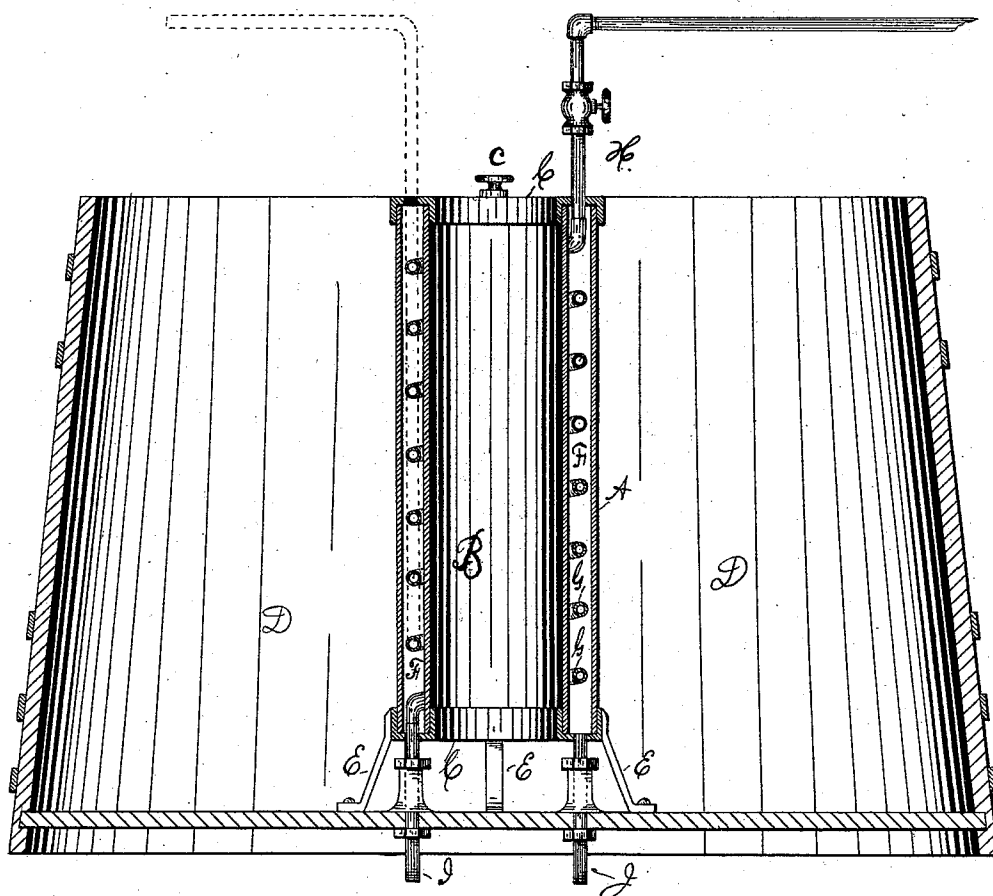


(No Model.)

H. E. DECKEBACH.  
APPARATUS FOR COOLING BEER.

No. 298,071.

Patented May 6, 1884.



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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR COOLING BEER.

SPECIFICATION forming part of Letters Patent No. 298,071, dated May 6, 1884.

Application filed February 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. DECKEBACH, a citizen of the United States, residing at Cincinnati, county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Apparatus for Cooling Beer, of which the following is a specification.

The object of my invention is a device for cooling beer that will occupy but little space in the vessel and present the greatest cooling-surface to the beer, so as to economize the cooling-agent, and at the same time rapidly perform the duty required. Its object is also a device that can be readily converted to use either water alone or the cooling-agents used in connection with the ordinary refrigerating apparatus used in breweries, or both agents combined.

With these objects in view my invention consists in a double or jacketed cylinder, with suitable connections for the cooling agent or agents, these connections being detachable, so that either or both methods of cooling may be employed, as desired.

The invention will be first fully described in connection with the accompanying drawing, and the novel features particularly referred to in the claims.

The drawing is a central vertical section of a beer-vat provided with my improved cooler, which is also shown in central vertical section. The cooling-surfaces are an outer cylinder, A, and an inner cylinder, B, made of light sheet metal. The two cylinders are united at top and bottom by metal caps C, preferably of cast metal, leaving a closed chamber between the two cylinders. The cooler so constructed is placed centrally in the vat D, being mounted upon feet E above the bottom of the vessel, so as to permit a free circulation of the liquid contained in the vat to the inside of cylinder B.

Within the chamber F, between the two cylinders A B, is a coiled pipe, G. The upper end of the coil or worm G is connected to a supply-pipe, H, which leads from the brine-vat of the refrigerating-machine. The lower terminal of the coil is connected to a discharge-pipe, I, which passes through the bottom of the vat, being properly housed and packed to prevent leakage; but if it is not desired to pass the pipe I or any pipe through the lower

cap C and bottom of the tub, the lower end of the coil may be returned and passed out of upper cap; and this plan I prefer when the brine or cooling-agent is forced by a pump through the coil and returned by the same force to the refrigerator. I have shown upon top of cap C a screw-plug, c, and there are two of these opposite each other upon the cap, to permit the circulation of air through the chamber F when the liquid from the refrigerator is alone used. I find it, however, of great advantage to use both the refrigerating-liquid passed through the pipe or coil G and water used in the usual manner. In this case the water is introduced into the chamber F around the coil G by means of a pipe, as J, at the bottom of the device, or by a pipe at top, as shown in dotted line.

Instead of passing a continuous flow of water through the chamber F, the chamber may be simply filled with water or other substance, to act as a conductor to convey the temperature of the pipe-coil G to the cylinders A B. When water alone is to be used as the cooling-agent, the top cap is removed and the coil G lifted out, after which the cap is again secured in place. The pipe H in this case will serve as the discharge, its upper end being of course disconnected from the refrigerator-vat, and the water is introduced, either through one of the pipes I J at the bottom of the vat D or through the pipe shown in dotted line, from the top to near the bottom of the cooler. I prefer the latter form, as in this case the pipes I J may be dispensed with and no opening is necessary in the bottom of the vat D. Besides, the joints between the pipes and cooler A B C may be more easily kept packed and any leakage readily detected.

The chamber F is made air-tight or tight enough to prevent any leakage from the coil or chamber passing into the beer. If the coil is made perfectly tight, it may be used alone as a cooler; but to be entirely safe the incased coil is preferred. Besides, the cooling-surface is more and the circulation of the liquid in the vat better with the cylinders than if the coil alone is used.

I do not limit myself to the particular mode shown for closing the ends of chamber F and uniting the two cylinders, but think it is the

best, as the cast metal furnishes a means for securing the conveying-pipes, and also strengthens the device.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a beer-vat, the cooling device consisting of an outer cylinder, a cylinder arranged within said outer cylinder to form an annular space, annular heads securing the cylinders together, induction and eduction pipes leading to and from said annular space, and standards secured to the lower end of the device and resting upon the bottom of the vat, to support said lower end above said bottom, substantially as described.

2. In a device for cooling beer, the combination, substantially as specified, of the two cylinders A B, one within the other, and closed

at both ends, forming the closed chamber F, with the coil G, located within said chamber, and induction and eduction pipes passing into said chamber and connected to the respective ends of said coil.

3. In a device for cooling beer, the combination, substantially as set forth, of cylinders A B, caps C, and coil G, with the two induction-pipes connecting, respectively, with coil G and chamber F, and two eduction-pipes leading one from the chamber and the other from the coil, for the purpose of cooling at the same time by means of the refrigerating-liquid and water.

HENRY E. DECKEBACH.

Witnesses:

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