

C. R. M. WALL.
Cooler for Brewers.

No. 49,573.

Patented Aug. 22, 1865.

Fig. 1.

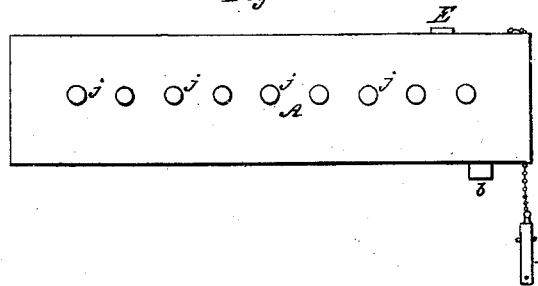


Fig. 2.

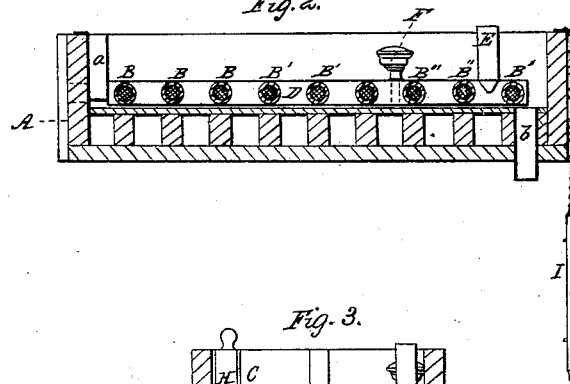


Fig. 3.

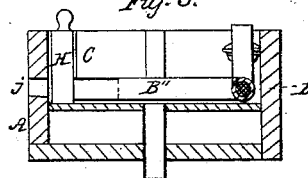
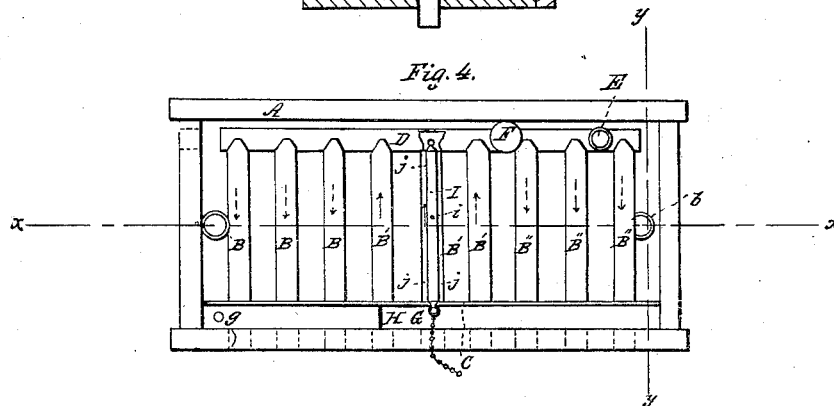


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHAS. R. M. WALL, OF BROOKLYN, NEW YORK.

IMPROVED COOLER FOR BREWERS.

Specification forming part of Letters Patent No. 49,573, dated August 22, 1865.

To all whom it may concern:

Be it known that I, CHARLES R. M. HALL, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Brewer's Liquid-Cooler; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front elevation of this invention. Fig. 2 is a longitudinal vertical section of the same, taken in the plane indicated by the line *x x*, Fig. 4. Fig. 3 is a transverse vertical section of the same, the line *y y*, Fig. 4, indicating the plane of section. Fig. 4 is a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention consists in the use of cores made of wood, metal, or any other suitable material, either solid or hollow, and of any desirable form or shape, in combination with a series of refrigerating-pipes, in such a manner that by the introduction of said cores in the pipes the liquid passing through said pipes is compelled to form a thin annular sheet, which, being in contact with the cold sides of the pipes, is rapidly cooled. The refrigerating-pipes are secured at one end to a partition extending in a longitudinal direction through the cooling-vat, whereas their opposite ends are connected by a longitudinal pipe which is so situated that the cooling-pipes are free to expand or contract without danger of producing a strain, which would be liable to start the joints. Plugs or stop-cocks inserted into the longitudinal connecting-pipe and gates placed in the space between the longitudinal partition and the next adjoining inside surface of the front side of the vat divide the refrigerating-pipes off in sections, through which the beer or liquid to be cooled passes in a zigzag course, whereby the cooling effect is considerably facilitated. Suitable holes in the front side and end of the cooling-vat, opposite the ends of the refrigerating-pipes, allow of introducing into said pipes a scraper or brush for the purpose of cleaning the same with ease and facility.

A represents a vat, made of wood or any

other suitable material capable of holding water, which is admitted thereto through a pipe, *a*, at one end, and discharged through an aperture, *b*, at the opposite end of said vat, so as to produce a continuous current of cold water through the same.

In the interior of the vat are situated a series of refrigerating-pipes, *B B' B''*, which extend from a partition, *C*, which passes in a longitudinal direction through the vat at a certain distance from its front side. This partition, as well as the pipes *B B' B''*, are made of thin sheet-copper or other good conductor of heat, and the pipes are secured in the partition at a small distance above the bottom of the vat, thus allowing the cooling medium to surround them completely on all sides. The loose ends of the pipes *B B' B''* are connected to each other by a longitudinal pipe, *D*, which is closed at both ends, but made to communicate with all the pipes *B B' B''*. The beer or liquid to be cooled is admitted to said pipe *D* through the supply-pipe *E*, and a plug or stop-cock, *F*, inserted in the pipe *D*, compels said liquid to pass through the pipes *B''* into the compartment *G*, between the partition *C* and the front side of the vat. Into this compartment a gate, *H*, is placed, which compels the liquid to return through the pipes *B'* to the pipe *C*, and finally it passes through the pipes *B* back into the compartment *G*, whence it discharges through the aperture *g*, as indicated by arrows in Fig. 4 of the drawings. It is obvious that the number of plugs in the pipe *C* and the number of gates in the compartment *G* can be increased to any desired extent, so as to compel the liquid to be cooled to pass in a zigzag current through all the pipes, passing one way through the first, returning through the next, and so forth, and the cooling is effected in a comparatively small number of pipes.

The effect of the apparatus can be still further improved by the use of cores *I*, which are inserted in the refrigerating-pipes *B B' B''*. These cores may be made of wood, metal, or any other suitable material in any desirable form or shape; but I use, by preference, wood or another bad conductor of heat and make the same round, their diameter being somewhat less than the inside diameter of the pipes.

Each core is provided with suitable projections, *i*, which serve to keep the same in the center when it is inserted in one of the pipes. Said cores are introduced through holes *j* in the front side of the vat A, and when they are properly adjusted said holes are stopped up, and the beer or liquid to be cooled is allowed to run through the pipes. By the cores the liquid is compelled to pass through the pipes in a thin annular sheet which is in contact all round with the cold sides of said pipes, so that it cools off very rapidly. The holes *j* serve also for the purpose of introducing a scraper or brush used in cleaning said pipes, and a similar hole may be made in the end of the vat opposite one of the ends of the pipe D, which in this case is closed by a movable cap, so that access can be had to it for the purpose of cleaning.

This apparatus is simple in its construction. It is durable, not liable to get out of order, easily kept clean, and very effective as a cooler.

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

1. The use of cores I, substantially such as herein described, in combination with the refrigerating-pipes B, for the purpose set forth.

2. Securing the refrigerating-pipes at one end only, leaving the other end free to expand and contract, as specified.

3. The longitudinal pipe D, with one or more plugs, F, and the compartment G, with one or more gates, H, in combination with the pipes B B' B'' and vat A, constructed and operating as and for the purpose described.

The above specification of my invention signed by me the 3d day of July, 1865.

CHAS. R. M. WALL.

Witnesses:

W. HAUFF,

C. L. TOPLIFF.