(No Model.)

A. ROOS.

APPARATUS FOR COOLING OR HEATING LIQUIDS.

No. 248,796. Patented Oct. 25, 1881.

Fig. 1.

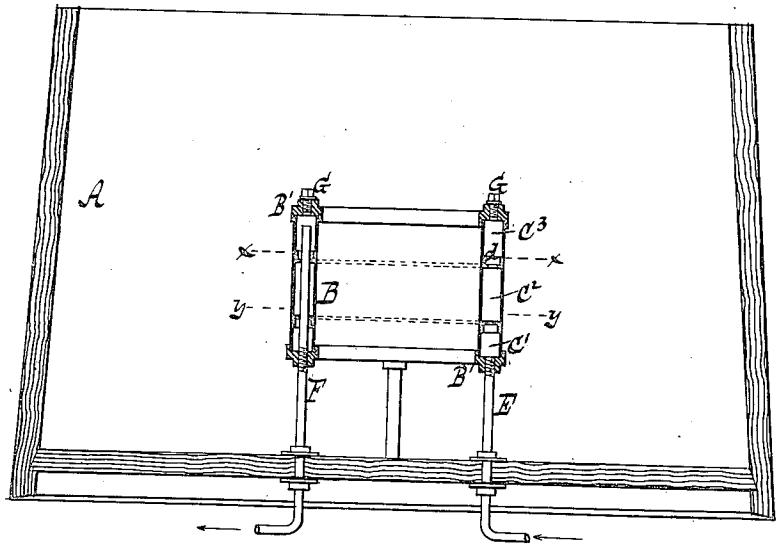


Fig. 2

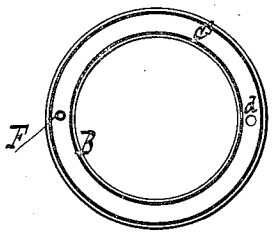
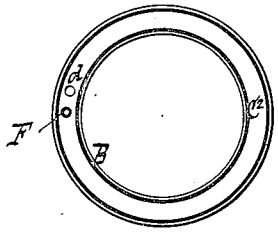


Fig. 3.



Witnesses
Otto Schupland
William Miller

Inventor
August Roos
by Van Santvoord & Hauff
his att'ys.

UNITED STATES PATENT OFFICE.

AUGUST ROOS, OF NEW YORK, N. Y.

APPARATUS FOR COOLING OR HEATING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 248,793, dated October 25, 1881.

Application filed August 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, AUGUST ROOS, a citizen of the United States, residing at New York, in the county and State of New York, have invented a new and useful Improvement in Apparatus for Cooling or Heating Liquids, of which the following is a specification.

This invention relates to apparatus for cooling beer or for heating or cooling other liquids; and it consists in an annular chamber which is divided into a series of compartments communicating with each other by means of holes which are diametrically opposite to each other, or nearly so, in combination with inlet and outlet pipes for a cooling or heating medium connected to the end compartments, respectively, so that when the apparatus is applied to use the cooling or heating medium circulates successively through the compartments of the annular chamber, and a maximum effect thereof is produced.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a vertical cross-section. Fig. 2 is a horizontal section on the line *x x*, Fig. 1. Fig. 3 is a similar section on the line *y y*, Fig. 1.

Similar letters indicate corresponding parts.

The letter A designates a tub or vessel designed to receive the beer or other liquid to be heated or cooled, as the occasion requires. In a central portion of this vessel A is located the attemperator, consisting of an annular chamber, B, divided into three (more or less) compartments, C' C^2 C^3, which communicate with each other by means of apertures *d*, formed in the partitions between the compartments, one diametrically opposite to the other, or nearly so.

To the compartment C' is connected a pipe, E, and to the compartment C^3 a pipe, F, these compartments being at the ends of the chamber, and the pipe F being arranged to extend through the compartments C' C^2 into the compartment C^3. In practice, the pipes E F are connected with a source of supply for a suitable cooling or heating medium—as, for example, cold water—E being an inlet-pipe, and F an outlet-pipe; and this water enters the compartment C', thence passes into the compartment C^2, and thence into the compartment C^3, whence it escapes; and it will be seen that by the arrangement of the apertures *d* the water is caused to circulate through each compartment, whereby a maximum effect thereof is produced.

The annular chamber B is constructed with heads B′, which are flanged to receive the sides thereof, and in the upper one of which are arranged screw-plugs G, to allow the admission of water for flushing the chamber. The partitions dividing the compartments C' C^2 C^3 also are flanged for their attachment to the sides of the chamber. The pipes E F enter the chamber B from a lower direction, and thus assist in supporting the whole in the vessel A; but, if desired, the pipes may be made to enter the chamber from an upper direction, and in that case legs are used to support the apparatus.

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

The combination, substantially as hereinbefore set forth, with a liquid-vessel, of the annular attemperating-chamber divided into a series of compartments, arranged one above the other and separated by partitions, said compartments communicating with each other by means of apertures which are diametrically opposite to each other, or nearly so, and the inlet and outlet pipes for a cooling or heating medium connected to the end compartments of the chamber, respectively, for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

AUGUST ROOS. [L. S.]

Witnesses:

W. HAUFF,

CHAS. WAHLERS.