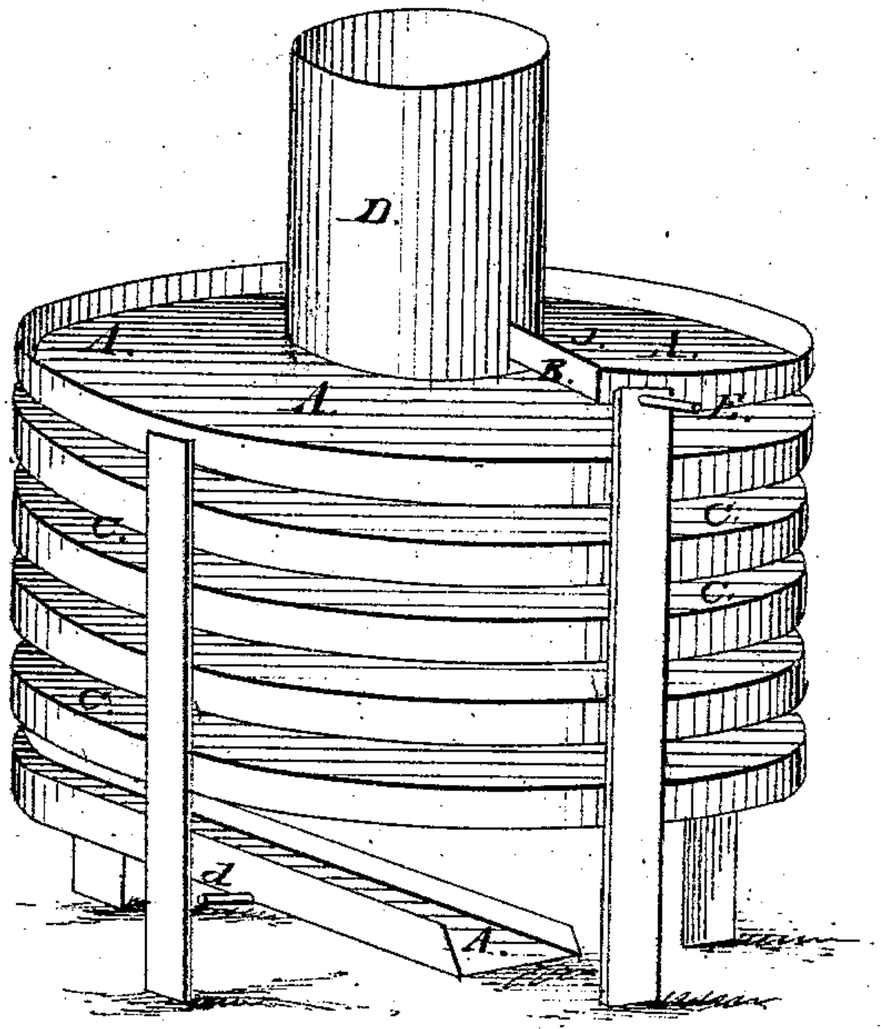
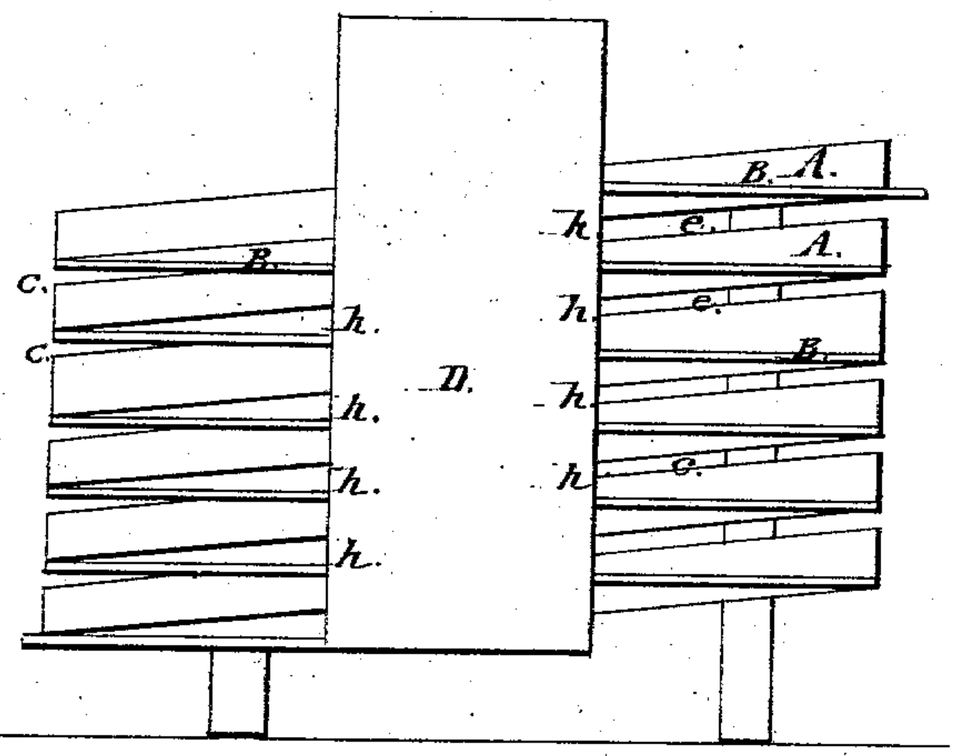
M. Gould,

Liquid Cooler,

No. 69,797. Patented Oct. 15. 1867.





Witnesses:
R. S. Turner.
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Inventor:
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United States Patent Office.

MARCUS GOULD, OF NEW YORK, N. Y.

Letters Patent No. 69,797, *dated October* 15, 1867.

IMPROVED APPARATUS FOR COOLING LIQUIDS.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, MARCUS GOULD, of the city of New York, and State of New York, have invented new and useful Improvements in Devices for Cooling Beer, Wort, Ardent Spirits, and the like; and I do hereby declare the following to be a full and exact description of the same, reference being had to the drawings that accompany and form a part of these specifications, in which—

Figure 1 is a perspective view of the apparatus.

Figure 2 is a vertical section, showing the passages for the liquor, the water, and the air.

Letter A, space, in which the beer or other liquor flows; letter B, space in which the water flows; letter C, air-passages; letter D, a chimney; letter *d*, point where the water enters; letter *e*, place of exit for the water.

The object of my invention is to provide a device for cooling beer or other liquors in a much more rapid and perfect manner than has heretofore been done, and at the same time have the device compact and not expensive, and all its manipulations simple and easily performed.

The structure is as follows: Around the central chimney D is arranged spirally a wide, shallow channel for the flow of the liquid to be cooled, as may be seen in fig. 1. Immediately beneath, and in connection with this channel, is arranged a close and wide channel cold water, for cooling purposes. This space continues its spiral course with the channel A around the chimney. At *h h h* are spaces for letting air pass into the chimney D.

The operation is as follows: At J the hot wort or the liquor to be cooled is poured in by constant stream. This spreads itself out over the wide channel A, and, as it flows on in its course around the chimney D, a constant current of air will flow from without inwards at *c*, and, passing over and in close contact with the hot liquor, will rapidly cool it, and escape into the chimney D, carrying off the deleterious gases, and giving a purity and quality to the liquor that cannot be obtained by methods heretofore adopted. Still further, cold water is made to flow in at *d*, and take its course spirally round and round beneath and in contact with the bottom of the channel A, producing a rapid and general cooling. It will be observed that the water enters near where the liquor leaves, and, being cold, it follows that the liquor will be well cooled as it leaves the apparatus. The water, it will be readily seen, flows in an opposite direction to that of the beer or liquor. The amount of cold water made to flow through the space B in any given time will be regulated by the pressure put upon it. The quantity of air made to pass over the liquor and up the chimney D, may be regulated by the degree of draught given to the chimney. Thus we have two convenient methods of regulating the capacity of any given machine for cooling purposes. To cause the stream to distribute itself equally over the surface of the bottom of the gutter or channel A, and not, by centrifugal force, be carried too much towards the periphery of the circles, the bottom of said channel is inclined upwards slightly from centre to circumference.

I believe the drawings will sufficiently illustrate whatever more may be required for a full understanding of the structure and mode of operating my invention. I might remark, however, that the width of the channel A may be more or less, as circumstances require; generally I should make it from three to five feet in diameter, and from three to five feet high.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The channel A, in combination with the air-passages C, either with or without the water-passages B, as and for the purposes specified.

2. The air-passages C and the chimney D, when arranged and operating with the channel A and water-passage B, substantially as described and for the purposes specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARCUS GOULD.

Witnesses:

J. F. HOUSE,

H. C. WEINER.