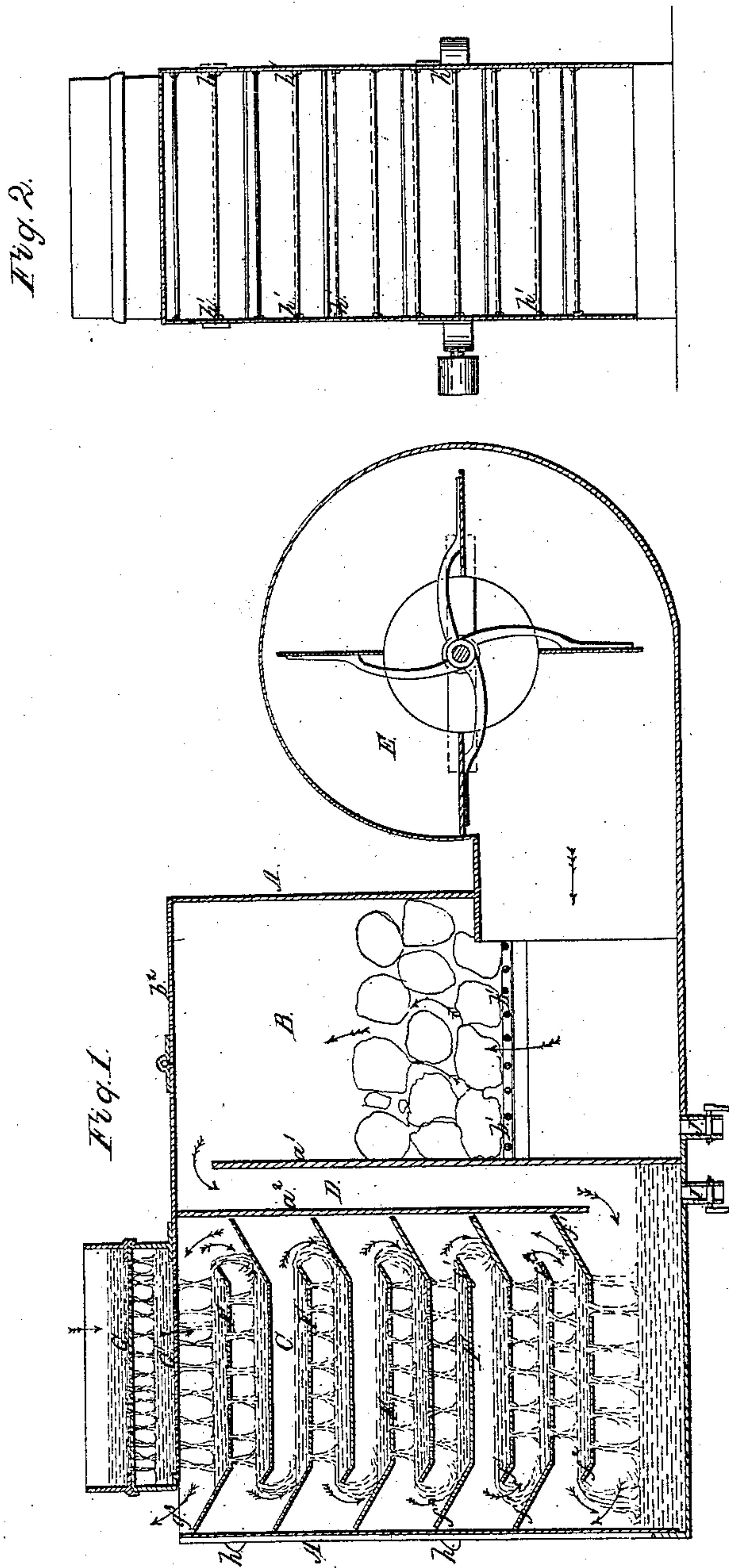


P. SCHWEIKHART.
BEER COOLER.

No. 64,452.

Patented May 7, 1867.



Witnesses:

B. H. Muehle
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Inventor:

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PHILIP SCHWEIKHART, OF BUFFALO, NEW YORK, ASSIGNOR TO DANIEL SCHWEIKHART OF EDEN, NEW YORK.

Letters-Patent No. 64,452, dated May 7, 1867.

IMPROVED BEER-COOLER.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, PHILIP SCHWEIKHART, of the city of Buffalo, in the county of Erie, and State of New York, (assignor to DANIEL SCHWEIKHART, of Eden, in the county and State aforesaid,) have invented a certain new and improved Beer-Cooler; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I is a longitudinal vertical section.

Figure II is an end sectional elevation.

The nature of this invention consists, first, in the construction of a beer-cooler having a chamber filled with ice, and another through which the beer or other liquid to be cooled is passed in any convenient manner, in combination with a fan-blower or other equivalent mechanical device, by means of which a current of air may be forced through the ice-chamber, where it is cooled, and then through the liquid; second, in the construction and use of a number of perforated troughs, over and through which the beer or other liquid passes in a manner to present the most cooling surface that can be obtained to the air with which it comes in contact; third, in the construction of a beer-cooler in which an ascending current of cold air is brought in contact with the descending beer or other liquid in a manner to cool the liquor in its downward passage; fourth, the combination with a beer-cooler of one or more sieves for straining the liquor before it is discharged upon the troughs above-mentioned.

Letters of like name and kind refer to like parts in each of the figures.

A represents a rectangular casing or box, made of metal or other suitable material, which casing contains the ice-chamber B and liquor-chamber C. $a^1 a^2$ are partitions, placed vertically within the casing and in a manner to divide the two chambers B and C. The partition a^1 , which is adjacent to and forms one side of the chamber B, is made open at the top, and the partition a^2 is open at the bottom. An air-space or flue, D, is thus formed, which connects the top of the ice-chamber with the bottom of the chamber C. b^1 represents a rack, upon which the ice is placed, and b^2 a door or hinged cover in the top of the casing through which the ice is introduced into the chamber B. E is a fan-blower, of common construction, the nozzle of which is connected to and opens into the ice-chamber below the rack b^1 . Any other well-known mechanical device for producing a current of air may be used in lieu of a fan, and either device may be operated in any convenient manner. F F represent a number of perforated plates or troughs, arranged horizontally one above the other within the chamber C. Each plate extends close to the sides of the casing, and its ends are turned upward at an angle, one end extending to the partition, as shown at f^1 , and the other raising only slightly above the level of the plate, as shown at f^2 . The plates are arranged with the open and closed ends alternately against the partition in a manner that a continuous passage is formed back and forth between the plates from the top to the bottom of the chamber C. G G' represent two sieves or strainers, which are placed upon the top of the chamber C for the purpose of filtering the liquor before it is discharged upon the first plate or trough F. The upper sieve G is made of coarse wire-cloth, and the lower one, G', of fine, and both are removable for cleaning. An opening is left in the top of the casing, as shown at g^1 , through which the air forced through the chamber C is exhausted. That end of the casing which forms a wall of the chamber C may be made adjustable by means of latches, shown at h , or otherwise; or a door may be substituted so as to allow the plates F to be taken out and cleaned from time to time. Each plate is for that purpose supported between horizontal guides or slides h^1 , which are firmly attached to the sides of the casing. I is a discharge-opening for the liquor, and J an aperture, through which the waste water accumulating in the bottom of the ice-chamber may be drawn off.

Operation.

The chamber B is first filled with ice and the cover b^2 closed; then the warm beer or other liquor to be cooled is allowed to run freely through the sieves G G', where it is thoroughly strained, and on to the first and upper plate or trough F. As soon as this trough is filled to a level with the edge of the flange f^2 the liquor will run over in a thin sheet and fill the next trough until that is also running over the edge, as described, so as to fill the next below; and so on until the liquid reaches the bottom. But, independent of this thin and flat stream of liquid from one trough to the next below, a number of fine streams are produced through the perforations of

the plates. In this manner the descending liquid is cut up and divided in a great number of parts and fine streams, which again intermingle upon each trough and are re-divided, thereby presenting all parts of the liquid to the air contained in the chamber. The movement of the liquid is indicated in the drawings by red-dotted lines and arrows. As soon as the liquid has begun its descent through the chamber C the fan-blower is revolved by any convenient mechanical means, which produces a current of air from the bottom of the chamber B, through the ice, and through the opening at the top of the partition a^1 . In its passage through the ice the air has become considerably cooled; and is now forced down through the air-flue D into the chamber C, entering at the bottom, as shown by the black arrows, Fig. I. The exhaust-opening g^3 being at the top of the chamber, the cold air is forced upwardly back and forth between the plates until it escapes through the said opening g^3 . In ascent the air comes in contact with not only the surface of the liquid contained in each trough, but also with the thin sheets and numerous fine streams descending from each trough to the next one below. The liquor is thereby thoroughly cooled; and when it has arrived at the bottom of the chamber, it may be drawn off through the opening I in a perfectly cool condition. By decreasing or increasing the blast of air the temperature of liquids, when passed through this cooler, may be reduced in any desired degree, making it the most convenient and efficient device for the various purposes for which it may be used.

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

1. A beer-cooler, having an ice-box, B, a chamber, C, containing the liquid, and an air-flue, D, and fan-blower, E, (or equivalent,) constructed, arranged, and operating substantially as herein described.
2. Cooling beer or other liquids by dividing the same into a large number of fine streams, and forcing an ascending current of cold air through the descending liquid, in the manner and for the purpose substantially as herein described.
3. The perforated plates or troughs F, having flanges $f^1 f^2$, arranged in the manner substantially as herein described.
4. The sieve or sieves G G', in combination with the chamber C, for the purpose and substantially as described.

P. SCHWEIKHART.

Witnesses:

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F. A. LANGWORTHY.