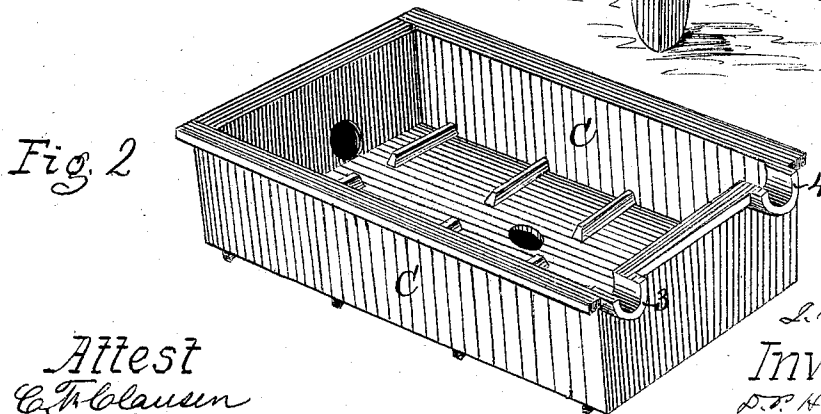
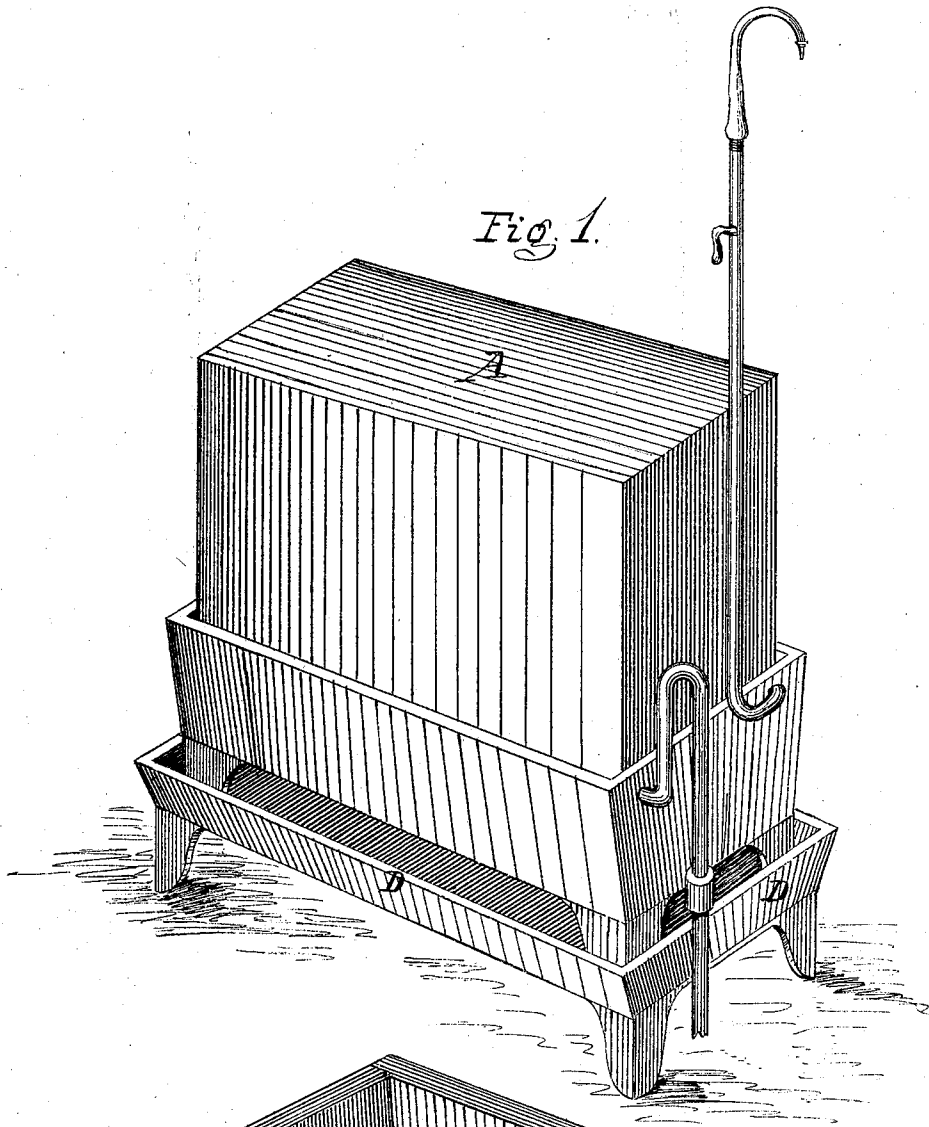


J. W. CAMPBELL, Sr.
Improvement in Cooler for Liquids.
No. 125,268.

Patented April 2, 1872.



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Fig. 3

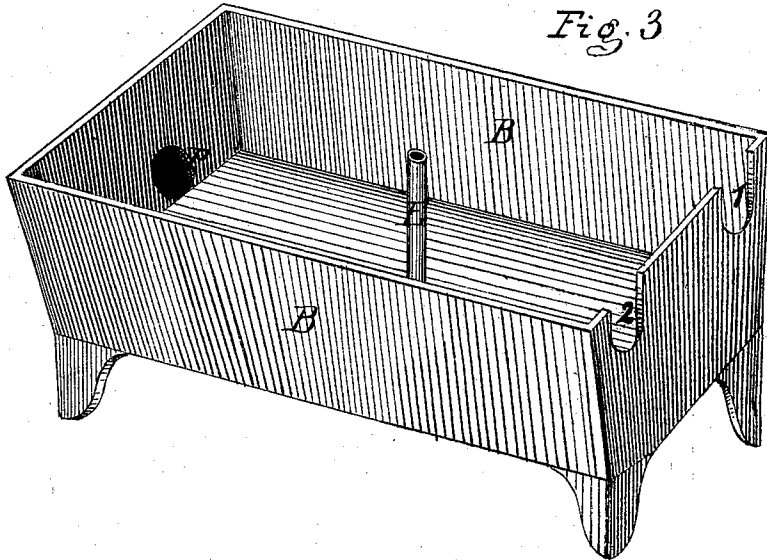
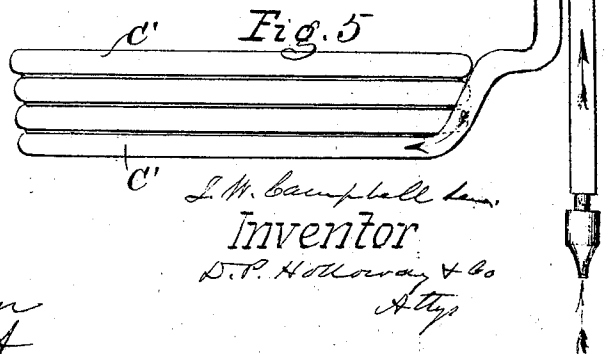
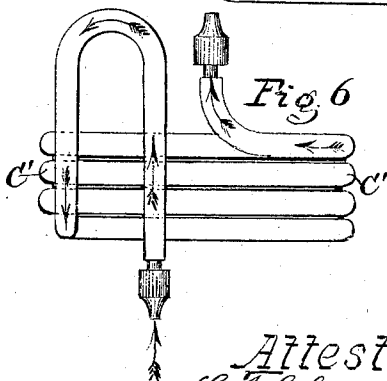
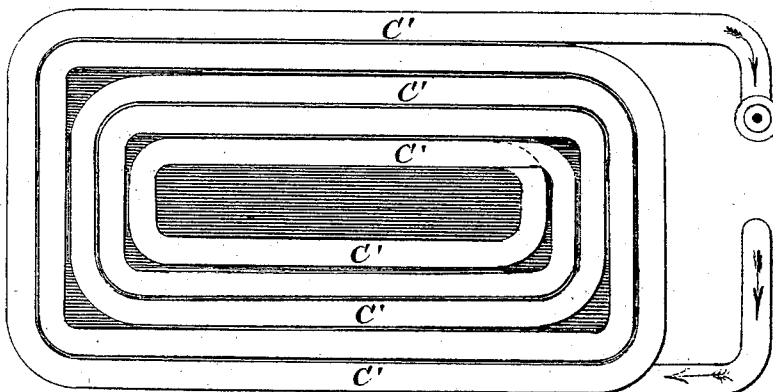


Fig. 4



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Fig. 7

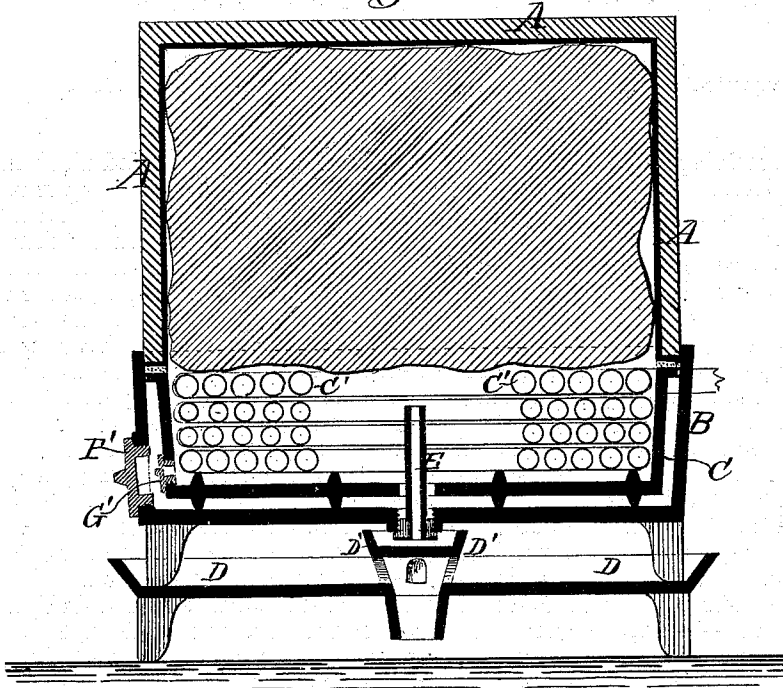
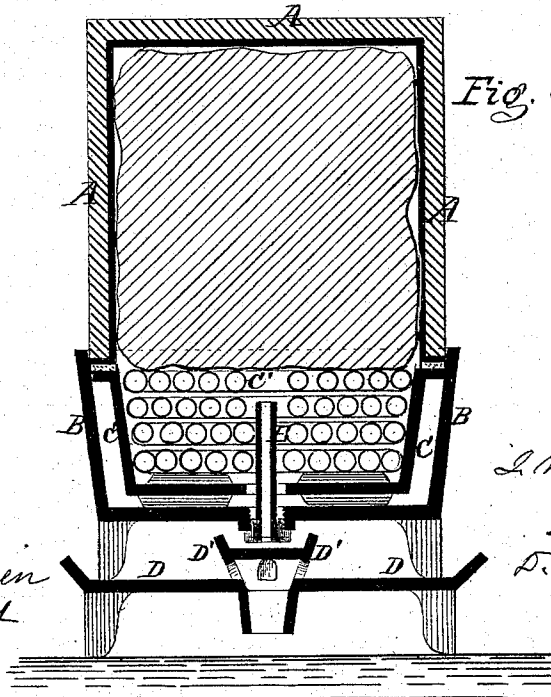


Fig. 8



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UNITED STATES PATENT OFFICE.

JOHN W. CAMPBELL, SR., OF NEW YORK, N. Y.

IMPROVEMENT IN COOLERS FOR LIQUIDS.

Specification forming part of Letters Patent No. 125,268, dated April 2, 1872.

Specification describing certain Improvements in Liquid-Coolers, invented by JOHN W. CAMPBELL, Sr., of the city, county, and State of New York.

This invention relates to that class of liquid-coolers which are designed for cooling water or any other liquid during its passage through them; and it consists in the construction, combination, and arrangement of some of the parts of which it is composed, as will be more fully described hereinafter.

Figure 1 is a perspective view of my improved cooler, showing the drip-pan, the case for containing the coil of pipe, the ice-box upon its upper surface, and the induction and eduction pipes. Fig. 2 is a perspective view of the case which incloses the coil of pipe. Fig. 3 is a perspective view of the outer case, which, together with the inner one, or the one which receives the coil of pipe, forms an air and water chamber. Fig. 4 is a plan view of the coil of pipes through which the liquid passes for the purpose of being cooled, showing the induction and eduction ends of such coil. Fig. 5 is a side view of the coil. Fig. 6 is an end view of the same. Fig. 7 is a longitudinal central section of the entire cooler, showing the ice-box with the ice in it, the coil of pipe in position, the outer and inner metallic cases with the chamber between them, the drip-pan, and the pipe which passes up into the pipe-chamber for regulating the height of water therein. Fig. 8 is a transverse section, showing the parts enumerated in the description of Fig. 7.

Corresponding letters refer to corresponding parts in the several figures.

In constructing coolers of this type I use a box, A, of metal or of wood, lined with some kind of metal which is a poor or slow conductor of heat. This box may be of any form, to cause it to conform to the shape of the case upon which it is to be placed, and of such height as to cause it to hold or inclose the requisite amount of ice, its lower edge being covered with rubber or some other elastic substance which will cause it to form an air-tight joint when it is put upon the case between itself and such case. Directly under the box A there is placed a metallic outer case, B, preferably made of zinc. The form of this case is clearly shown in Figs. 7 and 8, where it will be seen that it is provided with legs or projections for sustaining

it in its proper position, and also that its interior dimensions at its upper edge are such as to permit the box A to enter it for a short distance. Within the outer case B there is placed another case of similar material, it being constructed in a manner similar to the outer one, except that it is somewhat smaller, in order that an air and water chamber may be left between it and said outer case, as shown in the drawings. This case is provided both upon the outer and inner surfaces of its bottom plate with a series of ribs or projections, those upon its outer surface being for the purpose of controlling the distance between its outer surface and the inner surface of the outer case, and those upon its inner surface being for the purpose of supporting the pipe at some distance from its inner surface. In order that the position of the case with reference to the outer one may be controlled horizontally, a flange is made to project outward from its upper edge, the outer surface of which will, when it is in position, just come in contact with the interior surface of the outer case, to which, when the parts are all in position, it is soldered so as to form an air-tight joint. This flange also forms a smooth surface for the lower edge of the ice-box B to rest upon. Within the case C there is placed a coil of pipe which may be made of any suitable kind of metal, it being by preference coiled in the manner shown in Figs. 4, 5, and 6, in order that the largest amount of surface may be exposed in the least possible amount of space. The induction end of the coil of pipe is in the form of a siphon, so that, when the supply of liquid is cut off, what there is in the pipe shall remain there and not be allowed to run out. The eduction end of this pipe is given an upward or any other direction that may be required by the position in which it is placed. This coil of pipe is to be placed in the interior case C, and its ends are made to pass out through the openings 1 and 2 of the outer case and 3 and 4 of the inner one, after which small bars of metal are placed in such openings above the pipe, and the whole is soldered up so as to cause it to be air-tight and to present a smooth surface at that point for the ice-box to rest upon. The above-described construction and arrangement of the cases B and C form between them a chamber which will be air-tight and will be filled with water up to the

level of the top of the drip-pipe E, soon to be described, above which it will be filled with air. The projections upon the lower surface of the case B rest in a drip-pan, D, the lower surface of which is provided with the proper feet for supporting it, and at its center with a cup, D', into which the drip-pipe enters, so that no air can enter the cooling-chamber at that point. Upon the under surface of the drip-pan there is a short piece of pipe, to which may be soldered a pipe for conducting away the drip-water, access to this pipe being had through the walls of pipe below the cap but above the inner surface of the pan. The upper portion of the drip-pipe, or, as this part of it may more properly be called, the overflow-pipe, is shown at E, Figs. 3, 7, and 8, it being screwed into or otherwise secured to the bottom plate of case B and made to pass through an aperture in the case C into the space in the center of the coil of pipe, so that, when a sufficient amount of the ice in the box A has melted to form water enough to fill the chamber between the two cases and the spaces around the pipe to the proper point, it will flow into this pipe, and, through it, down into the cup in the drip-pan, which, when full, will overflow into said pan, from whence the water will pass to the pipe below, as above stated. An aperture is formed in one end of the case B, as shown at F, and in the same end of the cooler in case C, as shown at G. These apertures are controlled, and may be closed air-tight, by means of caps F' and G', which are made to screw into them, so that they may be readily removed should it become necessary at any time to clean out the cooler at that part to which they give access.

The operation of this device is as follows: The parts having been constructed and combined as described, it is to be placed under a counter, or in any other desirable location, and

the induction end of the coil of pipe is to be connected to the source of supply, whether it be a cask of beer or a pipe which conducts water into a building, a pump, or any other source that will cause the liquid to flow through said pipes. The eduction-pipe, being connected to the opposite end thereof, may be led to any desired point, where the liquid will be discharged into any vessel prepared for its reception, a cock or valve being provided in either the induction or eduction pipe, to regulate the flow of the liquid.

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

1. The cases B and C, constructed substantially as shown, as a consequence of which an air and water chamber is formed between them, and at the same time an air-tight chamber is formed for the reception of the coil of pipe, substantially as and for the purpose set forth.

2. The combination of the ice-box A, the cases B and C, and the coil of pipe C', all constructed and arranged substantially as and for the purpose set forth.

3. The combination of the overflow-pipe E, arranged as described, with the case B and the chamber within the interior case C, substantially as and for the purpose set forth.

4. The combination of the drip-pan D and case B, substantially as and for the purpose set forth.

5. The combination of the cases B and C and the coil of pipe C', substantially as and for the purpose set forth.

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

J. W. CAMPBELL, Sr.

Witnesses:

EDM. F. BROWN,

D. P. HOLLOWAY.