

JOHN W. CAMPBELL, Sr.

Improvement in Coolers for Liquids.

No. 114,916.

Patented May 16, 1871.

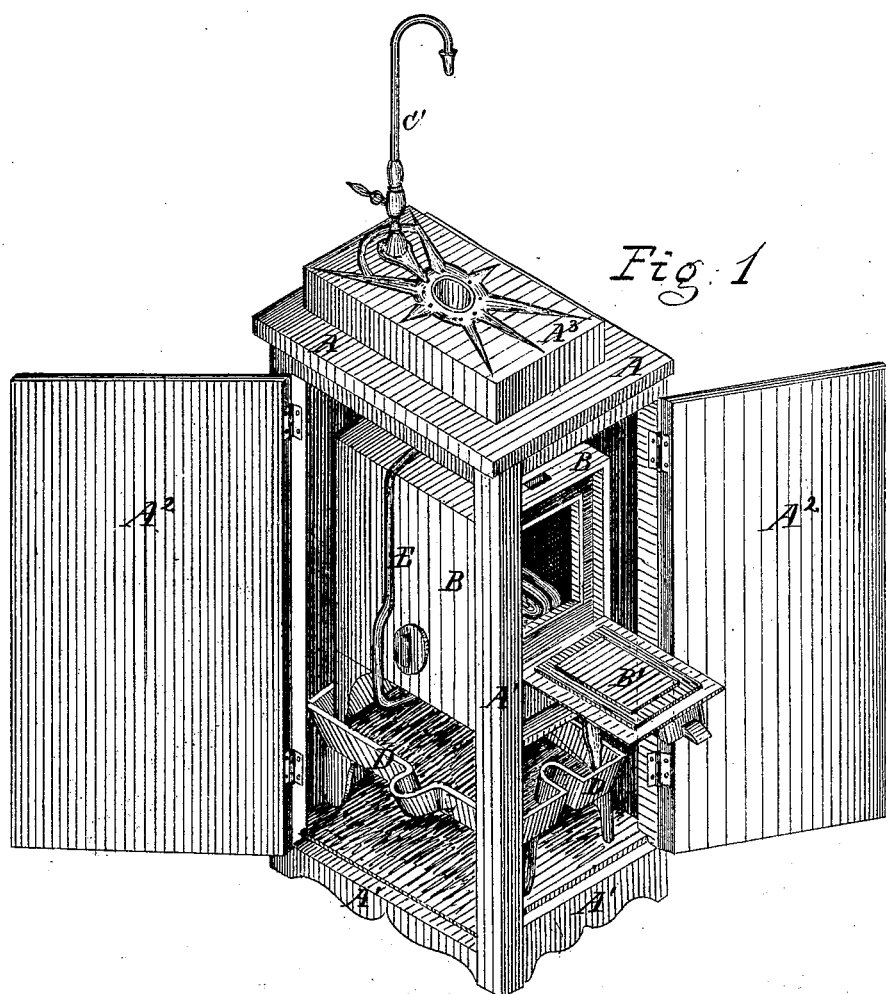


Fig. 1

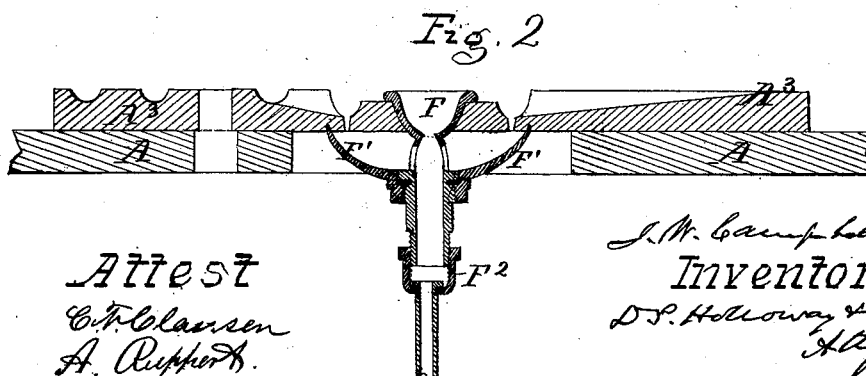


Fig. 2

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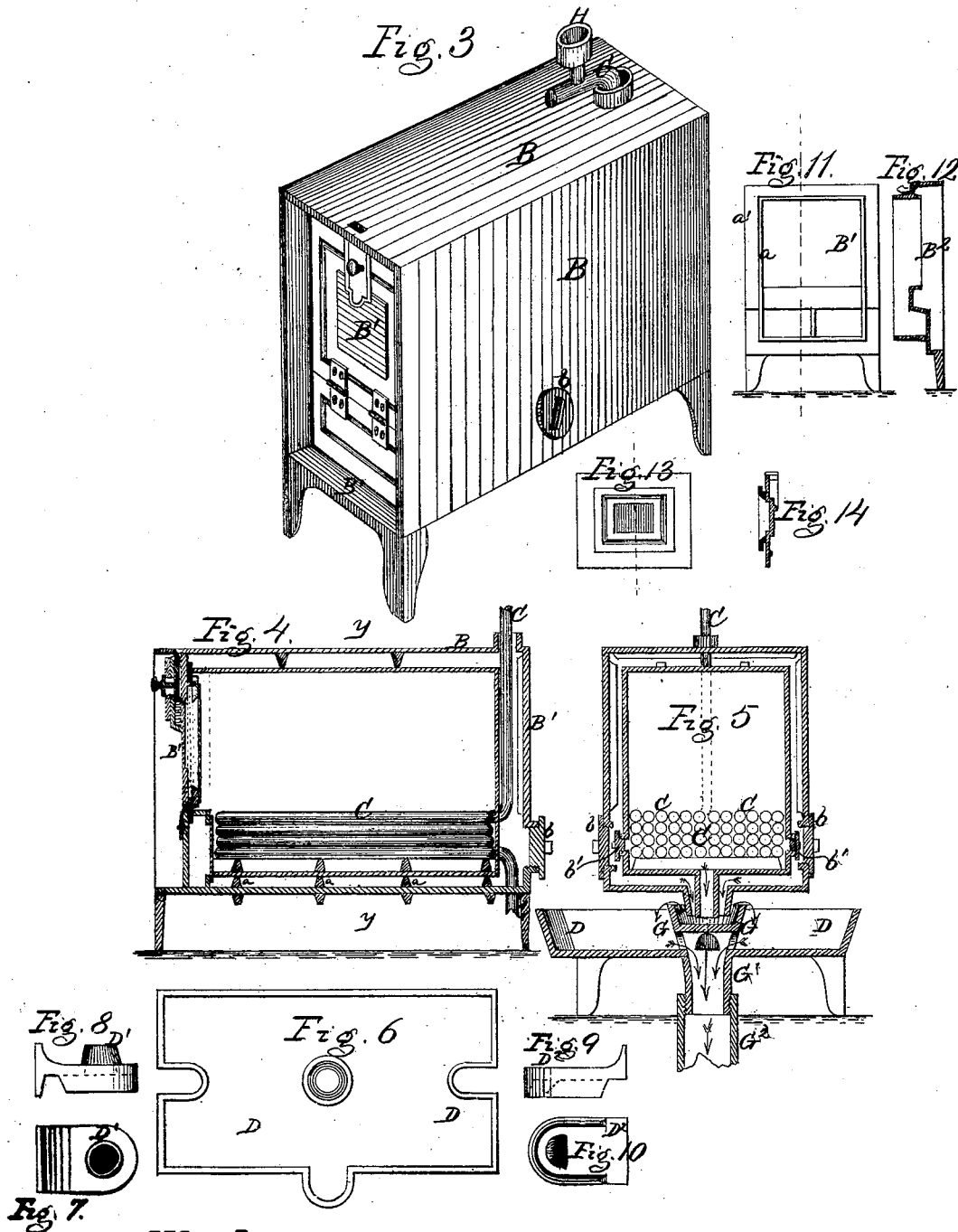
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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN COOLERS FOR LIQUIDS.

Specification forming part of Letters Patent No. 114,916, dated May 16, 1871.

To all whom it may concern:

Be it known that I, JOHN W. CAMPBELL, Sr., of the city, county, and State of New York, have invented certain Improvements in Coolers for Water and other Fluids; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved cooler, showing the box or case in which it is inclosed, the cooler proper, and its arrangement within the case, the drip-pan, the pipe which takes off the water from the platform upon which the vessel stands to receive the water or other fluid from the discharge-nozzle. Fig. 2 is a vertical section on line *x x* of Fig. 1, showing the form of the platform, the waste-pipe, and portion of the upper part of the case. Fig. 3 is a perspective view of the cooler as it appears when removed from the case. Fig. 4 is a longitudinal central section, showing the pipe through which the fluid passes and in which it is cooled. Fig. 5 is a transverse vertical section on line *y y* of Fig. 4. Fig. 6 is a plan of the drip-pan. Figs. 7 and 8 are plan and side views of the caps which cover the apertures in the drip-pan. Figs. 9 and 10 are plan and side views of caps which cover the openings in the ends of the drip-pan. Figs. 11 and 12 are front and sectional views of the end frames of the cooler. Figs. 13 and 14 are front and sectional views of the door for inserting ice into the interior of the cooler.

Corresponding letters refer to corresponding parts in all the figures.

This invention relates to that class of devices which is used for cooling and refrigerating fluids, and is designed as an improvement upon the one for which Letters Patent were granted to me February 26, 1867; and it consists in the construction, combination, and arrangement of certain of its parts, as will be more fully explained hereinafter. In devices of this character it is desirable to so construct them that the ice used in them for cooling the fluid that may pass through them shall be preserved for as great a length of time as possible; and experience has demonstrated the fact that when made entirely of metal they will preserve the ice in its frozen state longer than when made of wood or any material other than

metal; and this invention has for its object the production of a metallic cooler which shall be durable, cheap, and efficient.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A refers to a box or case, which may be of wood, marble, or any other suitable material. It is furnished with one or more doors, $A^1 A^2$, for the purpose of giving access to its interior. This case is to be of sufficient size to contain the cooler, and is to be furnished with a marble or other suitable plate, A^3 , upon its upper surface, upon which to set the vessel which is to receive the fluid from the discharge-pipe, and with a floor upon which the drip-pan stands. B refers to the cooler, which is composed of metal, and in this case consists of cast-metal end frames $B^1 B^2$, which are constructed as shown in Fig. 11, so that the sheets of metal which constitute the sides thereof may be attached thereto, as follows: The sheets which constitute the interior portion of the cooler are soldered firmly to the outer surface of the inner flange *a*, thus forming an inclosure into which the coiled pipe is placed, and which also forms a receptacle for the ice. Outside of the flange *a* there is another one, *a'*, which should be one inch, more or less, from the inner one, so as to leave a space of about that width between the outer and inner sheets. To the outer surface of this outer flange the side, top, bottom, and rear-end plates of the outer portion of the cooler are soldered firmly, and so as to be air-tight. In the side plates of both the outer and inner portions hand-hold plates *b b' b'* are inserted, as shown in Fig. 5, for permitting access to the interior of the cooler and to the space between the plates for the purpose of cleaning the same. In order that the sheets composing the bottom of the cooler may be able to sustain the weight which is put upon them ribs *c c* are put between the two plates, and are firmly soldered to the bottom plate, as shown in Fig. 4; and to still further strengthen these plates ribs may be soldered to the outer surface of the outer plate and upon the inner surface of the inner plate, the latter serving as a support for the coil of pipe to rest upon, as well as to strengthen the device. B^2 refers to a door, which may be placed in the end of the cooler or in its side, as preferred. This door is constructed as shown in Figs. 13

and 14, its inner surface being provided with a recess, which is surrounded with a frame soldered to the door and then covered with a sheet of metal. This form of construction provides for the leaving of a chamber within the door, and also furnishes a projection upon which to secure gum or other suitable packing, so that when the door is closed it shall be air-tight. C refers to a coil or coil of pipes which rest upon the bottom of the cooler or upon the ribs attached thereto, its lower end passing out through the inner portion of the cooler and then down through the bottom, where it may be attached to a pipe leading from a pump or from any other source of supply; it thus becoming the induction-pipe for the fluid to be passed through to the cooler. After being formed into as many coils as are found to be desirable, one coil being above the other, or otherwise arranged, as may be preferred, this pipe passes out through the inner sheet of the cooler into the space formed between the two end sheets, and then up through a ring or packing-box upon the upper sheet of the cooler, when it is so bent as to lead to and be connected with the discharge-pipe C', which may be located over or upon any portion of the plate A³. D refers to what may be termed a drip-pan, its area being larger than that of the bottom of the cooler, which sits or rests in it, but upon legs, so that a space is left between the two. This pan is provided with projections upon its lower surface, which rest upon the floor of the case. The object of making this pan of greater dimensions or area than the body of the cooler is that it may catch or receive any water which may drip down from the sides of such cooler, and thus direct it to the discharge or drip aperture in the center of said pan. By referring to Fig. 6 of the drawing it will be seen that this pan is provided upon its ends and one of its sides with recesses, the two end ones being arranged to receive the induction-pipe, they being so arranged that the cooler may be so changed as to have such induction-pipe at either end thereof. D¹ refers to a cap which covers the apertures in the drip-pan, one being so constructed as to receive in its upper surface a packing of rubber or other suitable material to prevent any water from passing down outside of such pipe. D² refers to a cap, which is used over the aperture in the end of the drip-pan not occupied by the induction-pipe, for the purpose of preventing any water from running out at that point. E refers to a drip-pipe, which is connected to the funnel-shaped nozzle in the plate A³. From the lower end of this nozzle this pipe extends downward into the drip-pan, as shown in Fig. 1, its office being to carry off any water or other fluid which may be spilled upon the plate A³, or which may drip from the discharge-pipe. F refers to a funnel-shaped nozzle or pipe, which passes down through the marble slab or plate A³, it being for the purpose of conducting the

drippings from the discharge-pipe into the pipe E. Underneath the marble or other plate a bowl, F', is secured, which is designed to catch any fluid which may be caused to overflow or otherwise be spilled in drawing the same, and which passes down through apertures formed in the plate A³, and conduct it to the pipe E, where it mingles with that which passes directly through the nozzle F, apertures being formed in the latter for the purpose of admitting it to the interior thereof. G refers to a flange which is cast upon or otherwise affixed to the drip-pan, and rises above the lower end of the ring upon the bottom surface of the cooler. About midway of this flange vertically there is formed a diaphragm, which, together with the flange, forms a cup, into which the water resulting from the gradual melting of the ice in the cooler flows, and in which it remains until it has filled the same, when it flows over the top of said flange and into the drip-pan, as shown in Fig. 5, and out through the apertures into the waste-pipe G². Owing to the fact that the ring upon the bottom of the cooler enters the cup in flange G, a water-joint is formed which effectually excludes the air from the cooler and thus prevents the too rapid melting of the ice. H refers to a screw-socket which is attached to the upper portion of coiled pipe C, it being for the attachment of the discharge-pipe thereto.

I have described my cooler as being used in connection with a box or case, in which form it will generally be used; but in some cases I place it directly under sinks, in which position the case is dispensed with; and this may also be done when the cooler is placed under counters and in other positions.

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

1. The cooler B, constructed with cast-metal frames B¹ B¹ and sheets of metal which are soldered thereto, the parts being constructed and arranged substantially as and for the purpose set forth.

2. The drip-pan D, constructed with apertures in its sides and ends, and with the flange or cup G for forming the water-joint, substantially as and for the purpose set forth.

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

4. The combination of the caps D¹ and D² and the drip-pan D, substantially as and for the purpose set forth.

5. The combination and arrangement of the plate or slab A³, the funnel-ended pipe F, and bowl F', 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.

Witnesses: J. W. CAMPBELL, SR.
EDM. F. BROWN,
B. EDW. J^r EILS.