(No Model.)

F. H. TRUMBULL.

WATER COOLER FOR REFRIGERATORS.

No. 589,377. Patented Aug. 31, 1897.

Fig. 1.

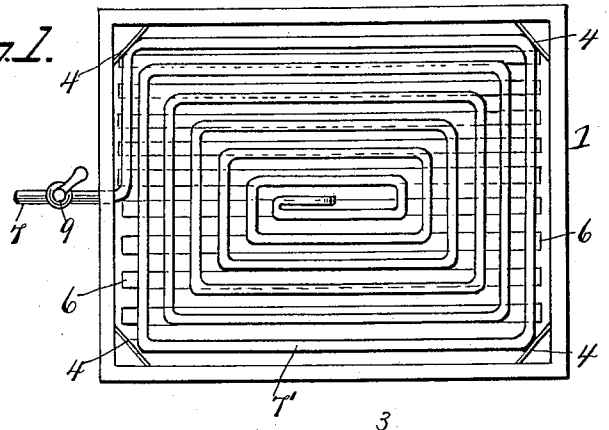
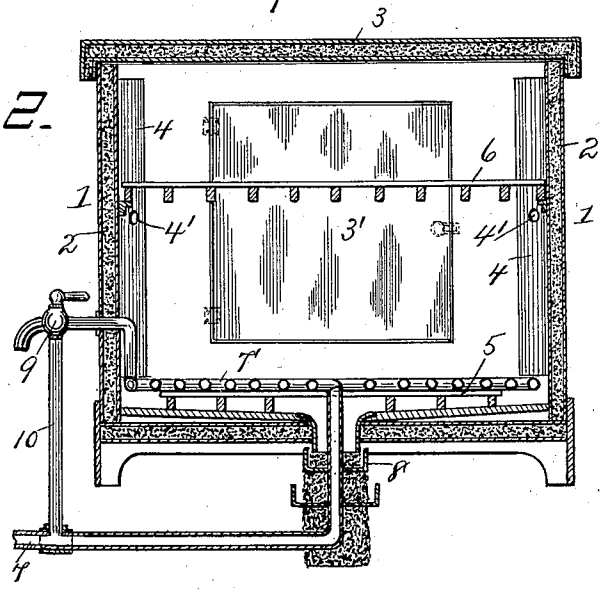


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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WATER-COOLER FOR REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 589,377, dated August 31, 1897.

Application filed March 2, 1896. Serial No. 581,546. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. TRUMBULL, a resident of Palmyra, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Refrigerators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention relates to apparatus for refrigerating liquids, and has for its object to increase their efficiency and economy; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings, Figure 1 is a plan of a liquid-refrigerating vessel, its cover being removed. Fig. 2 is a central section.

Numeral 1 denotes a double-walled vessel or reservoir, which may be of any desired form in horizontal section, and 2 indicates filling between the parallel walls adapted to prevent the conduction of heat.

3 indicates a removable cover also provided with a non-conducting filling.

3′ indicates a door in the side of the refrigerator.

Air-flues are provided in one or more corners of the vessel by partitions 4, which are shorter than the depth of the interior of the refrigerator and so disposed that air can enter each flue at the bottom and pass upwardly and out at the upper end of the partition into the main chamber. These partitions extend across the corners and are attached to the adjacent walls, thus inclosing flues which owing to their situation do not practically or seriously diminish the capacity of the refrigerator. They permit comparatively warm air displaced by that which is colder to ascend without passing up through the main chamber, where are situated the objects to be refrigerated.

4′ denotes air-inlets into the flues inclosed by the partitions 4.

5 denotes a grate, preferably made removable, situated in the lower part of the refrigerator.

If desired, a grate 6 may also be used to support ice, food, or other articles. Said grate 6 may consist of a pipe-coil connected with a lower coil, as shown. Ice or other articles can be placed directly on the pipe-coil, if desired.

7 indicates an inlet-pipe for water or other liquid. This pipe communicates with a source of supply and may pass up through the bottom wall of the refrigerator and extend above the lower grate and be formed into a coil 7′. The other end of said coil extends out through the refrigerator-wall and is there provided with a faucet 9, substantially as illustrated.

As shown in Figs. 1 and 2, the liquid-supplying pipe 7 enters through the bottom of the refrigerator and through the drip-receptacle 8, which may be so constructed and arranged that the cold drip surrounds the pipe and overflows said receptacle and flows down the pipe into other water-holders or overflow-receptacles placed about the pipe and provided in some cases with absorbent material, the arrangement being such that the cold drip-water from the refrigerator is made to cool the inlet-pipe and inflowing liquid before they enter the refrigerator.

9 denotes a faucet for drawing water directly from or from near the refrigerating-coil, and 10 is a branch or "cut-off" pipe leading more directly from the inlet-pipe to the same faucet, said faucet having a three-way cock the ports of which are so constructed and arranged that it will permit the discharge of comparatively warm water from the inlet-pipe through said branch pipe or will close or cut off said pipe and permit cold water to be drawn from the coil.

In practice ice may be placed immediately upon the coil in the lower part of the refrigerator, which coil can be supported upon the grate or in any suitable manner.

If preferred, ice can be placed on an upper grate and the entire surface of the coil used for the support of articles to be refrigerated.

The drip from the ice of refrigerators leaves them at their coldest plane and is usually nearly ice-cold. The described arrangement for utilizing this cold waste water for cooling the inlet-pipe is an economical one, and the efficiency of this part of the cooling operation is much increased by the overflow and absorbent devices indicated. These devices may be of the simplest form, and it is only

necessary that the drip shall be held for a sufficient time in contact with the inlet-pipe, and cloths, sponges, sand, or other capillary material can be used to advantage.

The precise arrangement of pipes is not essential, provided substantially the same objects are secured in practically the same way.

I am aware that in the application of a pipe to convey liquid through a refrigerator said pipe has been provided with a housing filled with gravel and arranged to receive the drip from the refrigerator, and I do not claim devices for utilizing the drip from a refrigerator except as hereinafter particularly pointed out. By my construction the inlet-pipe is provided with overflow cups or basins containing capillary matter. The drip-pipe extends below the upper edge of the upper basin to seal the refrigerator, and the bottom of the basin is provided with fibrous or like capillary matter depending therefrom and surrounding the water-inlet pipe. By these means not only is the refrigerator sealed, as usual, but the sealing-cup is utilized to hold both within and without capillary matter, which prolongs the contact of the cold drip with the pipe. Preferably one or more cups are employed below the sealing-cup. The capillary matter is exposed to the air and favors the evaporation of the drip, thereby adding to the refrigerating effect.

Having described my invention, what I claim is—

1. A refrigerator, a water-pipe passing into the same through its drip-outlet, a sealing-cup surrounding the pipe adjacent the said outlet and filled with capillary material, and having capillary material connected to its exterior to conduct the drip along the pipe below the said sealing-cup, substantially as described.

2. A refrigerator, a water-pipe passing into the same through its drip-outlet, a sealing-cup surrounding the pipe adjacent the said outlet and filled with capillary material, and having capillary material connected to its exterior to conduct the drip along the pipe below the said sealing-cup, and a second cup connected to said inlet-pipe and provided with capillary material, substantially as described.

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

FRANK H. TRUMBULL.

Witnesses:
JOHN W. FRAHER,
JAMES TANELL.