

(No Model.)

T. SCHEFFLER.
METHOD OF COOLING REFRIGERATORS.

No. 523,412.

Patented July 24, 1894.

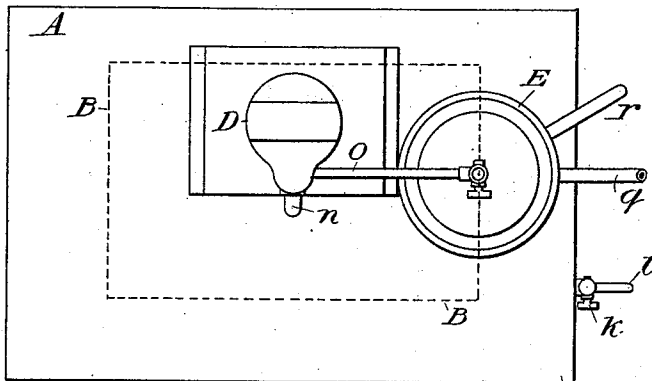


Fig. 2.

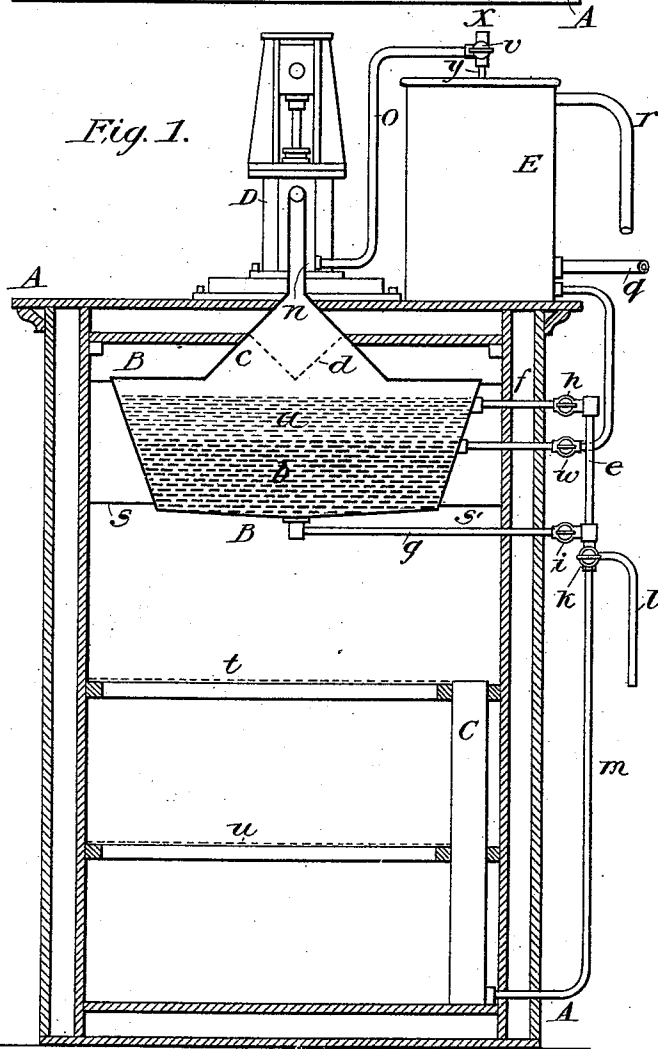


Fig. 1.

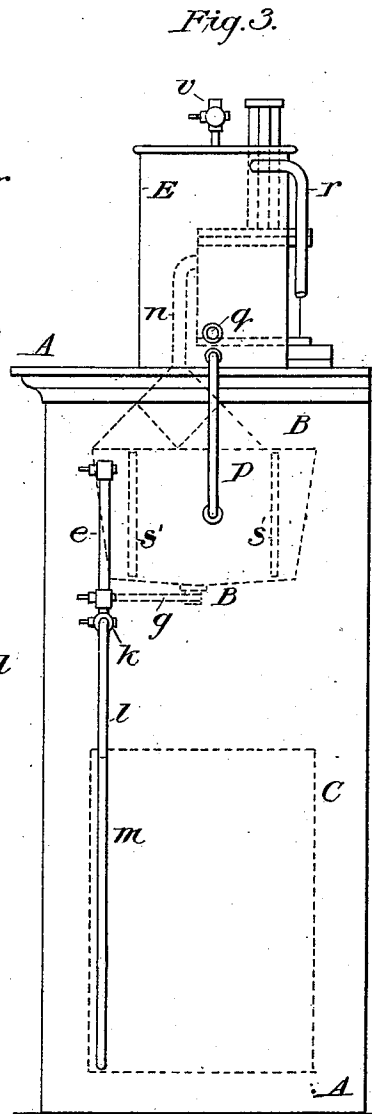


Fig. 3.

Witnesses:
Otto Handwerk,
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UNITED STATES PATENT OFFICE.

THEODORE SCHEFFLER, OF PATERSON, ASSIGNOR OF ONE-HALF TO
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METHOD OF COOLING REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 523,412, dated July 24, 1894.

Application filed September 19, 1893. Serial No. 485,918. (No specimens.)

To all whom it may concern:

Be it known that I, THEODORE SCHEFFLER, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented a new Method of Cooling Refrigerators, together with the Necessary Apparatus and Machinery, of which the following is a specification.

The object of my invention, is to cool a refrigerator in a certain time, by the continuous working of the apparatus and machine and to produce in the same time, a certain quantity of ice, which gives off its cold to the contents of the refrigerator, when the machine is not in operation. This object is attained by the apparatus and mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the apparatus; Fig. 2, a plan, and Fig. 3, an end view.

Similar letters refer to similar parts through the several views.

A A represent a usual refrigerator box with shelves *t* and *u*. It contains at the top a reservoir of sheet metal B B, which latter ends at the upper sheet, into a conical or pyramidal shape, at the apex of which a pipe *n* is attached, leading to the suction side of a suitable pump D. In the above named cone or pyramid, are perforated sheets *c* and *d* attached, to prevent the fluid *a* from rising into the pipe *n* when the pump is in operation.

The reservoir B B contains at the bottom, enough water *b* to form a quantity of ice to last a certain length of time while the pump is not in operation; on the top of the water rests a volatile fluid *a*, produced from petroleum, which does not mix with water.

A glass water gage *e* indicates the level of the water and the bottom of the volatile fluid; the pipe *f* leads from the fluid and the pipe *g* from the water to the gage, the cocks *h* and *i* are kept open during the working of the pump.

k is a threeway cock leading from the bottom of the gage to a pipe *l* and a pipe *m*, which latter communicates with the bottom of a water reservoir C.

A pipe *o* leads from the compression side of the pump to the condenser E, and the pipe *p* out of the condenser to the bottom of fluid *a*.

q is a feedwater pipe to condenser, *r* overflow water pipe from condenser, and *v* is a three way cock connecting pipe *o* at *x* to the atmosphere or at *y* to condenser.

The operation is as follows: At first the pump is started and the air exhausted out of B. B. and also out of condenser, having the communication open at *w* between B B and condenser E and having pipe *o* communicate at *v* to atmosphere through end *x*, where all the air is exhausted; afterward the water at *b* is admitted through the pipe *m* from reservoir C and pump run for a while to drive air out of the water, the cock *k* then being closed, then charge with the volatile fluid through pipe *l*, the cock *k* being in position to communicate with *e* and pipe *f*, the cock *h* open, *i* closed and *v* open to *y* for condenser. The apparatus is now ready for continuous operation, the temperature will be reduced gradually in the box F by the evaporation of the volatile fluid under a partial vacuum and the water will become colder and freeze after a certain time, when the working of the pump may be stopped, and the ice in B B will do the cooling. The machine will be running for instance in day time and be stopped over night, when the accumulated ice will come in use.

Pumps and condensers are used in ice machines and cooling apparatus, and I do not claim any special kind of either one, but have simply shown the combination of them, with my cooling apparatus, but

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

1. The method of cooling or freezing a liquid, consisting in placing it in contact with a volatile liquid insoluble therein, and subjecting the latter to evaporation.

2. The method of cooling or freezing a liquid, consisting in floating directly thereon a volatile liquid of lighter specific gravity and insoluble therein, and then reducing the pressure from above the latter so as to cause rapid evaporation thereof.

3. The method of cooling or freezing a liquid, consisting in floating directly thereon a lighter and volatile liquid insoluble therein, and then, while confining both liquids in a suitable chamber, reducing the pressure above the liquids.

THEODORE SCHEFFLER.

Witnesses:

EDWARD LESLIE,
BENJAMIN CARLEY.