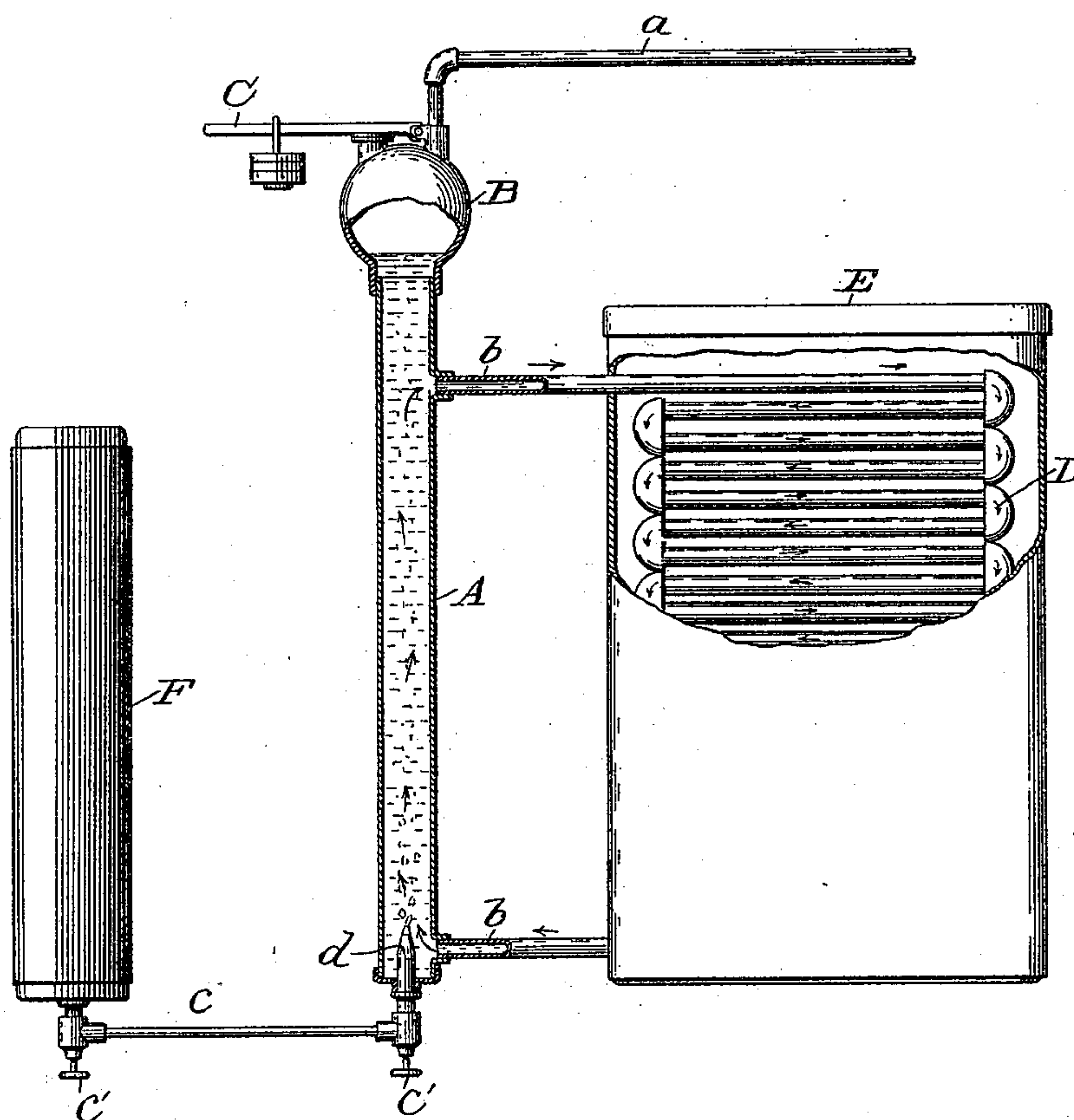


(No Model.)

A. KREUSLER.  
REFRIGERATING MACHINE.

No. 552,481.

Patented Dec. 31. 1895.



WITNESSES:

*W. B. Shepherd.*  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

ARNOLD KREUSLER, OF KREISCHERVILLE, NEW YORK.

## REFRIGERATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 552,481, dated December 31, 1895.

Application filed August 1, 1894. Serial No. 519,184. (No model.)

*To all whom it may concern:*

Be it known that I, ARNOLD KREUSLER, a resident of Kreischerville, Richmond county, State of New York, have invented certain new and useful Improvements in Refrigerating Apparatus, of which the following is a specification.

My invention relates to refrigerating apparatus, and has for its object to produce a simple, cheap, and effective device to cool brine or other refrigerating liquid and to cause circulation thereof through a refrigerating system; and such invention consists in the arrangement and combination of parts herein-  
after described and claimed.

The drawing forming part hereof shows one form of apparatus for carrying out my invention.

Other and analogous forms will readily suggest themselves to those who may desire to enjoy the fruits of my invention.

In the drawing, A is a suitable stand-pipe constituting the cooling-chamber. This cooling-chamber is surmounted by a dome B, in which is an adjustable regulating or safety valve C by which the pressure within the dome and cooling-chamber can be regulated. Leading from the cooling-chamber is a pipe *a*, the object of which will be presently explained. Communicating with the cooling-chamber at or near the top and bottom thereof are pipes *b*, which communicate with a suitable coil or other circulating system D, which coil or circulating system is located within or in suitable proximity to a refrigeration-chamber E.

F is a carbonic-acid reservoir from which leads a pipe *c*, which may be controlled by suitable cocks *c' c'*, which pipe communicates with an injector *d* at or near the bottom of the cooling-chamber A, and below the normal surface of the liquid contained therein and which serves to inject the carbonic acid into the cooling-chamber.

The operation of my apparatus is as follows:

The stand-pipe A and its adjunctive circulating system proper, for the purposes of the invention, constitute a single endless system, which is filled with brine or other suitable refrigerating liquid, the liquid in the stand-pipe standing at a higher level than the level of

liquid in the circulating system. Contained within the reservoir F is carbonic acid under pressure, preferably in liquid form, although it may be in gaseous form, if desired. This carbonic acid is led by the pipe *c* and injector *d* into the brine or other refrigerating liquid in the cooling-chamber or stand-pipe A, where it is liberated at a point preferably at or near the bottom. The carbonic acid immediately expands and the chill of the expanding gas serves to cool the liquid contained in the cooling-chamber. The bubbles expanding and rising through the liquid in the cooling-chamber cool the same in a very efficient manner and at the same time produce circulation from the bottom of the cooling-chamber upward, which induces circulation through the refrigerating circulatory system. From the dome of the cooling-chamber A the carbonic-acid gas is carried off by the pipe *a* and may be used for any commercial purpose or restored to be used over again. The valve C may be regulated to regulate the pressure within the cooling-chamber, which regulation may also be assisted by manipulating the cocks *c' c'*.

It will thus be seen that I have produced a simple, cheap, and efficient refrigerating apparatus, with few parts and little liability of getting out of order.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In an apparatus for refrigerating, the combination of a suitable stand-pipe A containing a non-congealable liquid, a circulatory system proper (D *b b*) communicating therewith below the normal surface of the liquid in said stand-pipe, a dome B surmounting and in communication with the stand-pipe, a regulating valve C located at or near the top of said dome, an inlet valve *d* for carbonic acid at or near the bottom of the stand-pipe, and a pipe *a* at or near the top of said dome for removing the carbonic acid therefrom, substantially as described.

ARNOLD KREUSLER.

Witnesses:

HARRY M. TURK,  
GEO. E. MORSE.