H. MOELLER.

COOLING DEVICE.

APPLICATION FILED AUG. 5, 1911.

**1,014,893.** Patented Jan. 16, 1912.

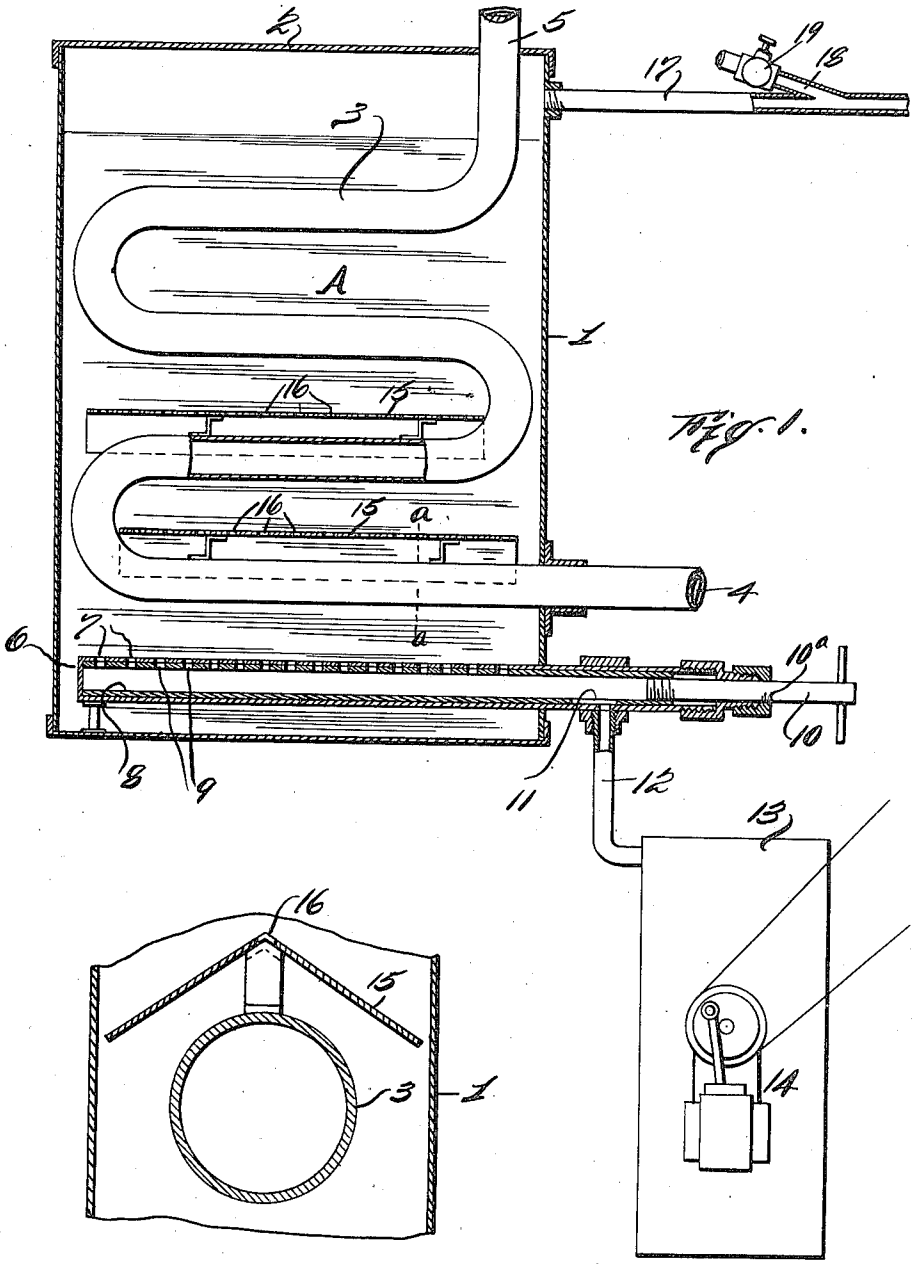


Fig. 1.




Fig. 2.

Witnesses:
E. A. Jarvis
Lillian Langram.

Inventor:
Henry Moeller,
by Munn & Co
attorney.

# UNITED STATES PATENT OFFICE.

HENRY MOELLER, OF NEW YORK, N. Y.

## COOLING DEVICE.

1,014,893. Specification of Letters Patent. Patented Jan. 16, 1912.

Application filed August 5, 1911. Serial No. 642,548.

*To all whom it may concern:*

Be it known that I, HENRY MOELLER, a subject of the Emperor of Germany, residing at New York city, Manhattan borough, county and State of New York, have invented certain new and useful Improvements in Cooling Devices, of which the following is a full, clear, and exact description.

This invention relates to an improvement in a process and apparatus for artificial cooling purposes, or refrigeration, the object being to provide a device of this character which is adapted to cool air, the said air being conducted by pipes to rooms or other places in which a low temperature is desired.

A further object of my invention is to provide a device of this character which will produce a very low temperature.

I will now proceed to describe my invention in detail, the novel features of which I will point out in the claims, reference being had to the accompanying drawing forming part hereof, wherein:

Figure 1 is a central vertical sectional view of my improved cooling device, partly in elevation, and Fig. 2 is a vertical transverse sectional detail view, the section being taken on a line *a*—*a* in Fig. 1.

Referring to drawing the numeral 1 indicates a tank or receptacle closed at the top as at 2. Within the tank or receptacle 1, I place a coil of pipe 3 adapted for the passage of the usual refrigerating medium, such as ammonia; the said coil I will hereafter designate as the ammonia coil. The inlet end for the ammonia is indicated by 4 and the outlet by 5. Adjacent the bottom of the tank 1 I place a distributing cylinder or pipe 6 provided with perforations or openings 7 for the passage of air. Within the cylinder or pipe 6 I slidably mount a tubular valve 8 having openings 9 placed to aline with the openings 7 in the cylinder 6. The function of the valve 8 is to control the flow of air or rather to control the amount of air which passes through the perforations 7 into the receptacle 1. To operate the valve 8 I provide a stem 10 graduated as at $10^a$. The graduations $10^a$ indicate the extent of movement of the valve 8 whereby the operator can tell to what extent the openings 7 have been throttled.

As can be seen in Fig. 1 the valve 8 is provided with an opening 11 in alinement with a duct 12 which conducts air, preferably under pressure, from a reservoir 13, a suitable air compressing device 14 being employed to store air in the reservoir 13.

To prevent the air which escapes through the openings 7 in the distributer 6, from passing too rapidly through the liquid A in the tank 1, I provide baffling hoods 15 having openings 16 in the top thereof, there being two shown, although more may be used if desirable. The air which passes through the liquid A finds an outlet through a pipe or duct 17, which may continue to a room or other place to be cooled. The duct 17 is provided with a pipe or duct 18, having a controlling valve 19, the function of which will hereinafter be explained.

The liquid A which I place in the receptacle 1 is preferably some anti-freezing mixture, such for instance as brine or salt water, the ammonia or freezing mixture being pumped or forced through the coil 3.

The object of my invention is to artificially cool a room or other similar place by means of cold air, the air being cooled or rendered cold by being caused to pass through the liquid A, the said liquid being rendered extremely cold by the freezing or cooling mixture which passes through the coil 3.

The function of the duct 18 is to provide a means whereby the cold air can be raised in temperature by sucking warmer air therein, the said warm air being taken from a warm room or from any other source. The valve 19 controls the influx of warm air into the cold air duct 17. The function of the baffling hoods 15 is to prevent the air, as it escapes from the openings 7, from passing too rapidly through the liquid and into the upper part of the receptacle 1.

When the air passes through the openings 7 in the distributer 6 it passes upwardly and contacts with the lower hood 15. The air will finally escape through the openings 16, and then pass upwardly to and through the upper hood 15 and finally into the upper part of the tank and then out through the duct 17. During the time that the air is finding an outlet through the hoods it is being cooled by the liquid A, which in turn is rendered very cold by the freezing or cooling mixture in the coil 3. My improved device makes it possible to render the air very cold, much colder than if the air passed through the fluid without a considerable

amount of resistance, which is offered by the hoods 15.

Having now described my invention what I claim and desire to secure by Letters Patent is:

1. A cooling device, consisting of a tank for retaining an anti-freezing liquid, a pipe within said tank adapted to contain a refrigerating medium, a perforated pipe within said tank adapted for the passage therethrough of air under pressure, and a tubular slidably mounted valve in said pipe provided with openings adapted to aline with the openings in said pipe.

2. A cooling device, comprising a tank, means adapted to introduce air under pressure to said tank, means within said tank for cooling the air, an outlet pipe for the cooled air from said tank, a pipe or duct connected to said outlet pipe at an angle thereto, whereby the flow of cool air through said outlet pipe will suck in warm air through said angularly disposed pipe, and a valve located in said angularly disposed pipe.

Signed at New York city, N. Y. this 2nd day of August, 1911.

HENRY MOELLER.

Witnesses:
EDWARD A. JARVIS,
LILLIAN LANGSAM.