May 20, 1941. J. M. PETERSEN 2,242,594

PORTABLE COOLER

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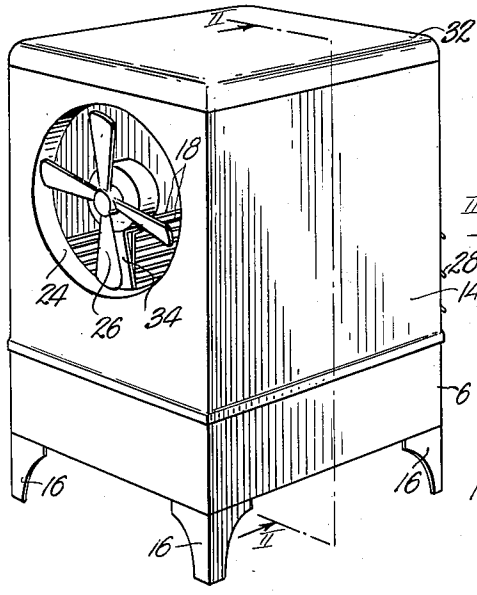


Fig. 1.

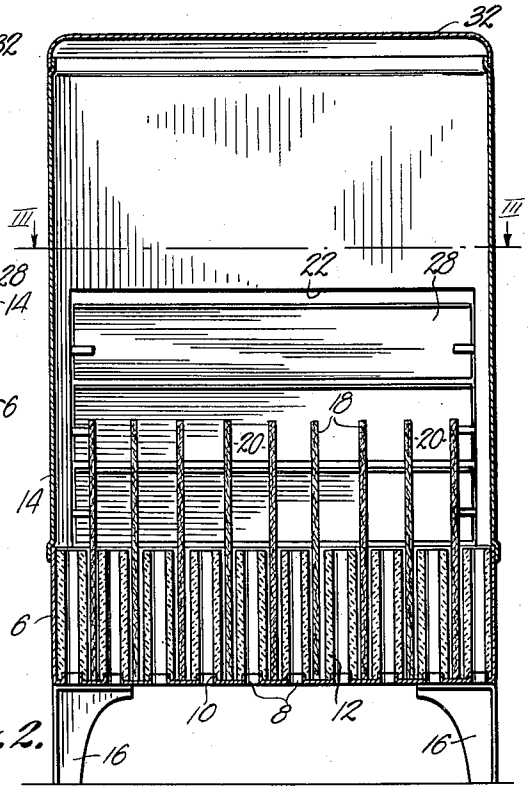


Fig. 2.

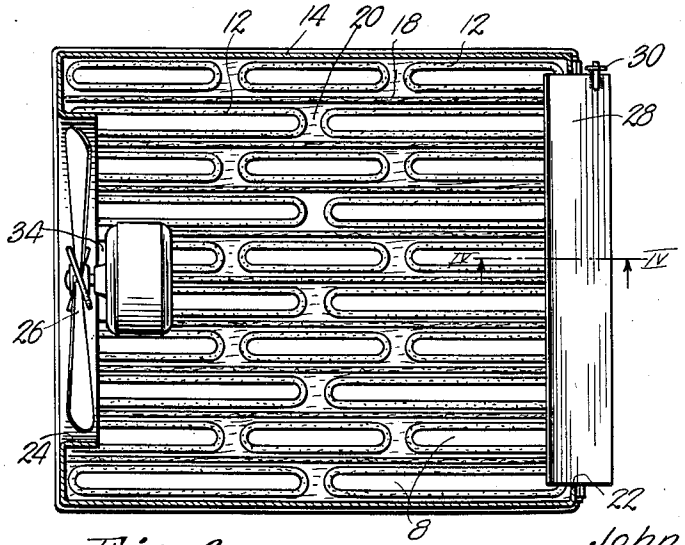


Fig. 3.

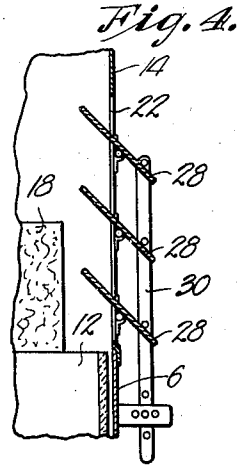


Fig. 4.

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PORTABLE COOLER

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3 Claims. (Cl. 261—104)

This invention relates to portable cooling and humidifying equipment and has for its primary object, the provision of a unique, durable and inexpensive means for conditioning the air in the room through the use of a fan equipped unit, the parts of which are arranged in such manner as to promote efficiency establishing a combination whereby the results desired are obtained with speed and economy.

A further object of this invention is to provide a plurality of tubes and wicks, the former arranged with respect to a fan so that air may be drawn over the surfaces thereof by currents passing across the upper ends and through passages created by the wicks.

This invention has for a further aim the provision of a portable cooler comprising essentially a reservoir for water, a plurality of specially disposed tubes and wicks, and an apertured hood through which currents of air are drawn for the purpose of establishing an upward draft through the tubes whereby the surface area of the wetted members of the cooler is increased and the capacity of the unit is exceptionally great when considering the size thereof.

Minor objects of the invention will appear during the course of the following specification, referring to the accompanying drawing wherein:

Figure 1 is a perspective view of a portable cooler made in accordance with the present invention.

Fig. 2 is a vertical sectional view through the same taken on line II—II of Fig. 1.

Fig. 3 is a horizontal sectional view through the unit taken on line III—III of Fig. 2; and

Fig. 4 is a fragmentary detailed sectional view through a portion of the portable cooler taken on line IV—IV of Fig. 3.

The preferred embodiment of the invention may assume the appearance of a unit such as illustrated herewith and wherein is provided a reservoir 6, for the holding of water.

The bottom of reservoir 6 has a plurality of openings 8 created therein, around each of which is an upturned, continuous flange 10 that extends into the specially formed tubes of ceramic material 12. These tubes are elliptical in transverse cross section and their major axes are substantially parallel to each other and extend in a line parallel to the path of travel of the air passing through an overlying hood 14.

Legs 16 support reservoir 6 above the floor so that air may freely flow upwardly through tubes 12 as it is so drawn by currents passing across the tops of wicks 18 from air intake port 22 to air outlet port 24, and if desired, a shallow pan, not here shown, may be hung below the bottom of reservoir 6 to collect any condensate that may drop from the inner surfaces of tubes 12 or from the sides of reservoir 6.

A series of wicks 18 extend upwardly from within reservoir 6 and from places between tubes 12 to form passages 20 therebetween above the upper ends of tubes 12. These wicks are arranged in planes parallel to the path of travel of air moving through hood 14 from intake port 22 to outlet port 24 thereof.

These ports 22 and 24 are formed through opposite sides of hood 14 and a fan 26 is positioned in outlet port 24 so as to force air outwardly from the hood and into the space being conditioned.

Intake port 22 has a number of shutters 28 controllable as a unit by link 30 through the medium of which shutters 28 may be set to allow the entrance of air in predetermined desired quantities.

Hood 14 is slipped over the upper edges of reservoir 6 and a cover 32 is removably mounted upon the upper end of hood 14 so that the entire unit may be quickly assembled and disassembled, and further so that hood 14 may be lifted to fill reservoir 6 with water.

Fan 26 may be mounted directly upon hood 14 through the medium of a bracket or similar element 34.

The material from which tubes 12 are cast is of the well-known porous clay or unglazed crockery, which is absorbent and which is wetted throughout its mass when water is in reservoir 6.

Wicks 18 are wide enough to be self-supporting when slipped into place between tubes 12 and the latter may serve as means for precluding accidental leaning of wicks 18.

When fan 26 is operating, the blades thereof force air outwardly through port 24 and as the desired amount of air passes through inlet port 22, a draft is created across the tops of elongated tubes 12 so that air is drawn upwardly therethrough. This manner of constructing a portable cooler presents exceptionally large areas to the air being treated without retarding the flow, and the hot, dry air is removed from the room near the floor thereof through tubes 12, which quickly impart moisture thereto.

In view of the possibilities of constructing portable coolers having physical characteristics different from those illustrated and described, it is desired to be limited only by the scope of the appended claims.

Having thus described the invention, what is

claimed as new and desired to be secured by Letters Patent is:

1. A portable cooler of the character described comprising a reservoir for water having a plurality of vertical openings in the bottom thereof; a hood on the reservoir provided with an outlet port; a fan for forcing air outwardly in a horizontal path from the hood through said port; tubes of absorbent material in communication with the holes adapted to be wetted by water in the reservoir; and wicks extending upwardly into the hood from between the tubes in the reservoir, said fan being arranged to move air across the tops of said tubes to draw air upwardly into the hood through the tubes and across the wicks before forcing the same through the outlet port.

2. A portable cooler of the character described comprising a reservoir for water having a plurality of vertical openings in the bottom thereof; a hood on the reservoir provided with an inlet port and an outlet port for air; a fan for forcing air outwardly in a horizontal path from the hood through the outlet port; shutters over the inlet port for controlling the movement of air therethrough; vertical tubes of absorbent material in communication with the holes adapted to be wetted by water in the reservoir; and wicks extending upwardly into the hood from between the tubes in the reservoir, said fan being arranged to move air across the tops of said tubes to draw air upwardly into the hood therethrough, said fan being above the tops of said tubes and the wicks whereby to move air across the reservoir between the wicks from the air inlet port before forcing the same outwardly through the outlet port.

3. A portable cooler of the character described comprising a reservoir for water having a plurality of vertical openings in the bottom thereof; a hood on the reservoir provided with an inlet port and an outlet port for air; a fan for forcing air outwardly in a horizontal path from the hood through the outlet port; shutters over the inlet port for controlling the movement of air therethrough; vertical tubes of absorbent material in communication with the holes adapted to be wetted by water in the reservoir; and wicks extending upwardly into the hood from between the tubes in the reservoir, said fan being arranged to move air across the tops of said tubes to draw air upwardly into the hood therethrough, said fan being above the tops of said tubes and the wicks whereby to move air across the reservoir between the wicks from the air inlet port before forcing the same outwardly through the outlet port, said wicks extending an appreciable distance above the upper ends of the tubes whereby to form passages extending from the inlet port to the outlet port of the hood across the tops of the tubes.

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