B. MACFADDEN.

PORTABLE AIR COOLER, MOISTENER, AND PURIFIER.

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1,394,924.

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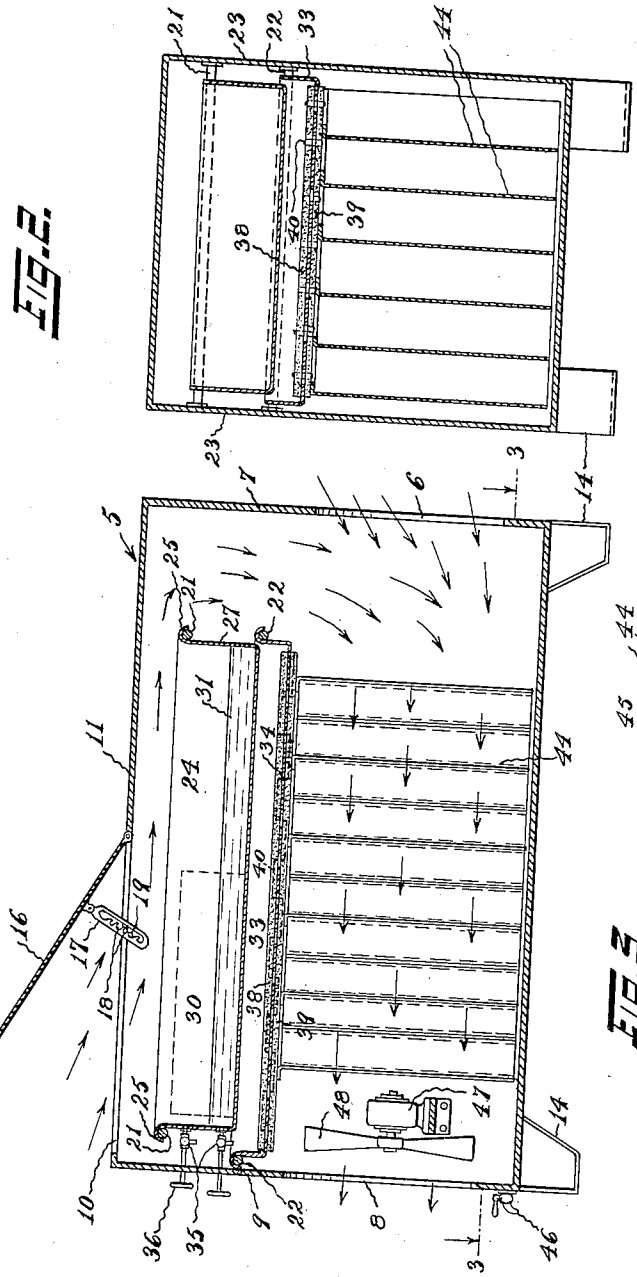


Fig. 1.

Fig. 2.

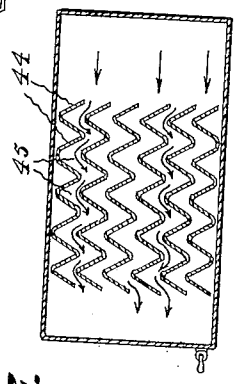


Fig. 3.

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UNITED STATES PATENT OFFICE.

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PORTABLE AIR COOLER, MOISTENER, AND PURIFIER.

1,394,924. Specification of Letters Patent. Patented Oct. 25, 1921.

Application filed December 2, 1919. Serial No. 341,998.

To all whom it may concern:

Be it known that I, BERNARR MACFADDEN, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Portable Air Coolers, Moisteners, and Purifiers, of which the following is a specification.

This invention relates to a portable combined cooling, humidifying and purifying apparatus.

One object of the invention is to provide an apparatus that may be used either for cooling and humidifying in hot weather or humidifying in cold weather, or clearing the air of dust or other impurities.

Other objects are to provide an easily portable apparatus adaptable for use under a variety of conditions and for a variety of purposes.

Still other objects will appear hereinafter

While I describe in the invention minute details of my apparatus, the invention is not limited to these, since the details of combination and structure may be greatly varied without departing from the scope of the invention as claimed.

In the accompanying drawings, showing by way of example, one of many possible embodiments of the invention,—

Figure 1 is a longitudinal sectional view partly in elevation;

Fig. 2 is a transverse sectional view; and

Fig. 3 is a horizontal sectional view.

My improved air moistener and cooler comprises an elongated cabinet 5 having an inlet opening 6 in its rear end wall 7, a discharge opening 8 in the front end wall 9, both openings being spaced from the floor of the cabinet, and a combined charging and inlet opening 10 at the front end of the top wall 11.

A leg 14 at each corner of the cabinet slightly raises it from its support and prevents over-heating when the cabinet is supported on a stove or heater for moistening the air in winter.

A lid 16 is provided for charging, opening, and may be held in any open position by an adjusting brace 17 provided with a plurality of notches 18 for engaging the fixed pin 19 for holding said lid open different distances.

An upper pair and a lower pair of transverse supporting rods 21 and 22 are carried by the upper part of side walls 23 of the cabinet; and an ice box 24 having hooked ends 25 engaing over the upper rods has its rear end 27 spaced from said top and rear end walls 7 and 11, so that a current of air passing in at the charging opening 10 and over a block of ice 30 and ice water 31 in said ice box may have room to pass down into the cabinet as indicated by the arrows. A distributing pan 33 is provided beneath the ice box and is supported on said lower rods 22 and provided with distributing holes 34 in its floor, and receives water from drip-cocks 35 draining different levels of the ice box and adapted to drip into said pan. These cocks are provided with handles 36 projecting from said front end wall 9 for convenient manipulation of the cocks for maintaining water from the melting ice at the desired level in the ice box.

A retarding felt pad 38 lies on the floor of the pan; and a supporting felt pad 39 lying against and beneath the floor of the pan and adapted to receive water from said distributing holes, is supported by stitches 40 (Fig. 2) passing through said holes and said pads. Hanging from said supporting pad are a plurality of longitudinally disposed zig-zag vertical curtains 44 supported by said supporting pad and extending to the floor of the cabinet and forming between themselves meandering paths 45 (Fig. 3) and adapted to absorb water from the bottom of the cabinet and from said supporting pad. A drain cock 46 at the lower part of the front of the cabinet is adapted for drawing off all the water from the bottom of the cabinet when desired.

A motor 47 mounted in the front end of the cabinet is provided with a fan 48 located just within said discharge opening 8 and adapted to draw air in through said inlet openings 6 and 10 over said ice box and the ice and ice water therein, and through said meandering paths 45.

The operation of the device is very simple. Ice is put in through the door 10 and the lid tilted wide open if the air is to be cooled greatly, so that air may pass over the ice and ice water. If less cooling is desired the lid is adjusted less wide open or is left closed. One of the cocks 35 and 36 is opened and the fan turned on. Water drips into the pan 33, thence onto the curtains, wetting the curtains. The air passes in at the openings 6 and 10, over the ice and along

the paths 45 against the wet curtains and is thus cooled and moistened and discharged through the opening 8 into the room.

If ice is not used, the ice box is filled with water, the lid 16 closed, and the lower cock 35 set to permit water to drip into the distributing pan as fast or nearly as fast as it can be evaporated from the curtains; and the contact of the air with the wet curtains will cool and moisten the air.

Another way to use the cabinet is merely to fill the bottom of the cabinet with water, whereupon the curtains will absorb a certain portion of the water from the floor of the cabinet and cool the air passing through the paths 45.

The apparatus may be used as an air moistener in heated or warmed rooms in the winter, in which case it is used without ice as above described, and is supported upon a heater or stove, the legs 14 holding the floor of the cabinet sufficiently spaced from the heater to prevent boiling or undue heating of the water.

Other methods of using the cabinet will readily suggest themselves.

I claim as my invention:

1. In combination, a cabinet, a discharge pan in the upper part of the cabinet and provided with distributing holes in its floor; a retarding felt pad lying on the floor of the pan; a supporting pad secured against the lower face of said floor; stitches passing through said holes and said pads and supporting the supporting pad; curtains supported by said pad; and means adapted to discharge air through said curtains and discharge opening.

2. In combination, a cabinet having an inlet opening in its rear end wall, and a discharge opening in the front wall; an ice box in the upper part of the cabinet; a distributing pan beneath said box and provided with distributing holes in its floor and adapted to receive water from said box; a retarding felt pad lying on the floor of the pan; a supporting pad secured against the lower face of the floor of the pan; stitches passing through said holes and said pads and supporting the supporting pad; curtains supported by said pad; and means adapted to draw air across said curtains and discharge it through said discharge opening.

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