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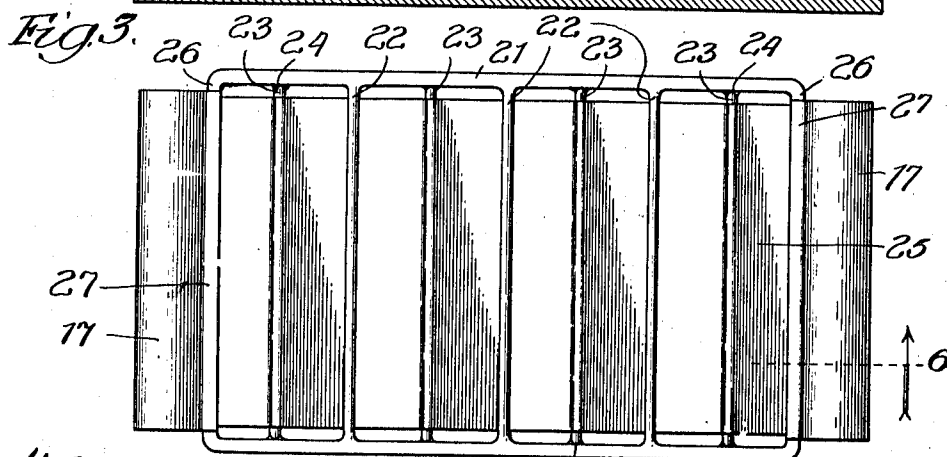


Fig. 4.

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HUMIDIFIER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES SUBERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Humidifiers, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding numerals of reference in the different figures indicate like parts.

The primary object of my invention is to provide a simple, cheap and efficient humidifier for moistening the atmosphere in cigar cases and in all places in which it is necessary to maintain constant and uniform humidity.

A further object is to so construct said device that an ample supply of free water may be stored in the reservoir without at any time submerging the absorbent evaporizing element therein to such an extent as to cause excessive saturation and thereby prevent its greatest evaporating or vaporating action. In other words, it is my purpose to provide means whereby a uniform relation may be established and maintained between the water supply and the absorbent element, so that a maximum vaporization may be insured. I accomplish said object by providing a liquid holding receptacle, placing therein an absorbent material such for example, as hardened unglazed clay, plaster-of-Paris, or other porous or fibrous substance and so constructing the same as to cause a portion thereof to maintain a constant predetermined relation to the water line within said receptacle, while maintaining a relatively large evaporating surface above said line in combination with means for projecting a blast of air against said evaporating surface, all of which is herein-after more particularly described and definitely indicated in the claims.

In the drawings, Figure 1, is a vertical longitudinal sectional view of a device embodying the features of my invention, a portion at the top being broken away. Fig. 2 is a like view of the receptacle, showing a modified construction, the motor and fan being removed, Fig. 3, is a plan view of the float and absorbent material attached thereto represented in Fig. 4, and Fig. 4 is an enlarged sectional view in detail taken upon the line 4, Fig. 3, viewed in the direction of the arrow there shown.

Referring to the drawings, 1 represents a flat horizontal base or frame portion having an upright support 2, rigidly attached thereto, to which is secured in any approved way, an electric motor having a vertical armature shaft 4, to which is attached in the usual manner, a fan generally designated by 5. The base 1, serves as a support for a water or other liquid holding receptacle 6, which is located directly beneath the fan. The fan is protected by means of a wire shield 8, secured to metal supports 10 attached to the upright 2, and extending forwardly around the fan which is centrally located directly above the receptacle 6.

I prefer to provide a partial cover 11 for the receptacle which may be slidably connected therewith by means of downwardly and inwardly turned end flanges 12, 12, Fig. 1, which are adapted to engage with outwardly flaring end flanges 13, 13, upon the walls of said receptacle. An indefinite number of openings 16, are formed in the walls near the top of the receptacle to permit an escape of air therefrom. Within said receptacle is placed a float which consists preferably of transverse air tight hollow cylinders or tubes 17, located near the ends of said receptacle and connected with each other by means of a horizontal plate or member 18, upon which is supported an absorbent evaporating element generally designated by 19, which is secured thereto by means of clips 20 or in any approved manner. Said element is preferably formed from a porous or absorbent substance, such for example, as unglazed tile, asbestos, plaster-of-Paris or other porous or fibrous material or compound adapted to absorb water by capillary attraction. The buoyancy of the float and the weight of the absorbent material thereon should be such as to cause the water-line to be in contact with the base of the absorbent material as shown. The latter is built up in ridges, arches or inclined projections 20, or otherwise formed in such a way as to cause the evaporating surface to greatly exceed the superficial area of the water surface in the vessel. I recommend the form indicated in Fig. 1 as a very satisfactory one, particularly because of the relatively large surface presented. In operating the device water is poured into the receptacle regardless of quantity, provided it is not sufficient to raise the float so as to cause the evaporating surface to

contact with the fan. The surface of the water being slightly above the level of the float, the water is absorbed by the evaporating element and carried to every part of its surface, but not in such quantities as to deposit free water upon the surface which would interfere with rapid vaporization but in such fine particles as to enable it to be readily taken up by air when brought into contact therewith. The fan 5 being set in motion, a blast of air is continuously forced downwardly into contact with the uniformly moistened surface from whence it escapes through the openings in the walls and other parts of the receptacle, laden with moisture gathered from said surface.

In Figs. 2 and 3, I have shown a modification of said invention in which a similar float is employed in conjunction with detachable means for supporting a fibrous absorbent material in the form of a cloth-like substance or texture. An oblong rectangular frame 21, is provided with a series of transverse bars 22, Fig. 3, alternately located between parallel bars 23, which are integral with or attached to the upper ends of upright supports 24. A strip of fibrous absorbent material 25 is secured to the end bars 26, see also Fig. 6, by means of clamping flanges 27, between which the end bars 26, encircled by the cloth, are pressed. Said cloth strip is then stretched over the bars 23, and beneath the bars 22 throughout the length of the frame. This construction enables the absorbent strip to be readily removed, cleaned and replaced or another substituted therefor. The float and frame should be of such a weight as to cause the water line to be even with or slightly above the top of the frame 21, so that that portion of the absorbent material beneath the lower cross-bars will be submerged. This water contact is sufficient to cause the entire surface of the strip 25 to maintain such a degree of moisture as to produce the desired evaporation when a blast of air is directed against it.

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

1. In a humidifier, the combination with a liquid holding receptacle, of absorbent material arranged to have a limited contact with liquid within said receptacle, means for maintaining said material in constant predetermined relation to said liquid and means for projecting a blast of air upon said absorbent material.

2. The combination in a humidifier of a

liquid holding receptacle, an absorbent material, a floating element for supporting said absorbent material to maintain a portion of it in constant contact with said liquid and means for forcing a blast of air against the surface of said absorbent material.

3. A humidifier in which is combined a water-holding receptacle open to the atmosphere, a float within said receptacle, an absorbent material supported by said float with a portion at least of its base in contact with the water surface, the portion above said water-line having a larger superficial area than that of the water surface within said receptacle and means for forcing a volume of air downwardly upon the surface of said absorbent material.

4. A humidifier in which is combined a water container, a float within said container for supporting an absorbent material in a substantially unvarying relation to the water-line, an absorbent material mounted upon said float with a part at least of its lower portion in contact with the water while the bulk of said material is above the water line, said absorbent material being arranged to present a relatively large evaporating surface with respect to the superficial water area and means for projecting a blast of air against said evaporating surface.

5. The combination in a humidifier of a water container open to the atmosphere, a float located therein for supporting an absorbent material, an absorbent material mounted upon said float in partial contact with water in which the float is placed, a rotary fan located above said absorbent material to project a blast of air thereon and a motor for actuating said fan.

6. The combination in a humidifier of a water container open to the atmosphere, buoyant means located therein for supporting an absorbent material, an open framework connected with said buoyant means, an absorbent material trained over said framework to enable portions thereof to contact with the water while others are extended indefinitely above it, a fan for projecting a blast of air against said absorbent surface and means for actuating the same.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses, this 29th day of April 1912.

CHARLES SUBERT.

Witnesses:

DAVID H. FLETCHER,
JENNIE L. FISKE.