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2,495,619

DEHUMIDIFIER

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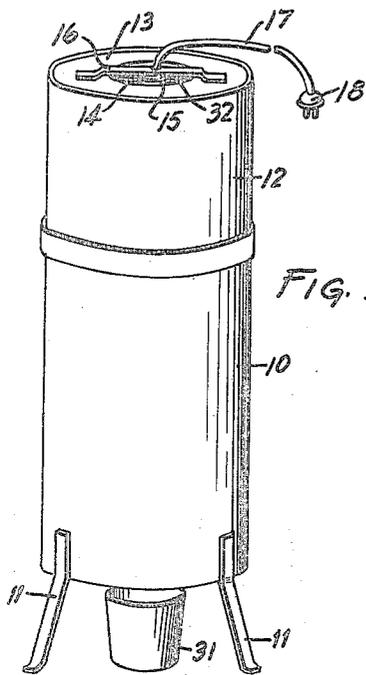


FIG. 1

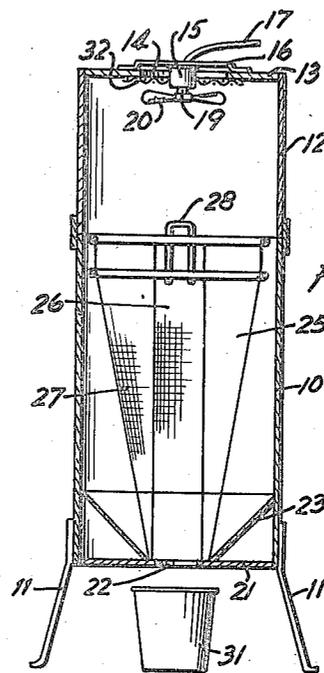


FIG. 2

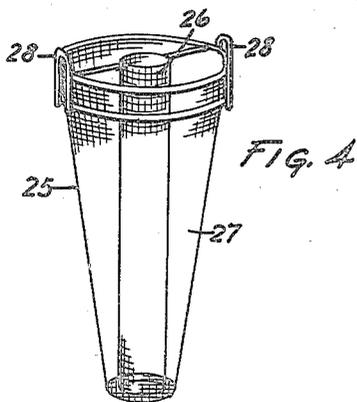


FIG. 4

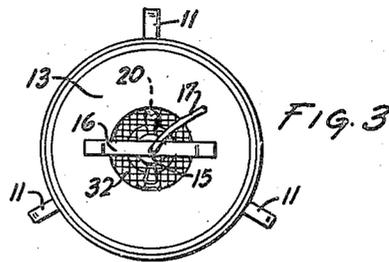


FIG. 3

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DEHUMIDIFIER

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2 Claims. (Cl. 183-4.4)

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This invention relates to dehumidifiers and more particularly to apparatus for removing moisture from the air in a confined space such as a room.

It is the principal object of the present invention to provide a dehumidifier which is adapted for the rapid removal of air-borne moisture.

It is a further object of the present invention to provide a dehumidifier which is portable in character so that the same may be employed in different locations as desired.

It is a further object of the present invention to provide a dehumidifier which will require a minimum of attention and which may be readily recharged as required by unskilled persons.

Other objects of the invention will be apparent from the specification and claims.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a view in perspective of a preferred form of dehumidifier in accordance with the present invention;

Figure 2 is a vertical central sectional view of the dehumidifier shown in Figure 1;

Figure 3 is a top plan view of the dehumidifier; and

Figure 4 is a view in perspective of a removable container employed in connection with the dehumidifier.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring more particularly to the drawings, in which a preferred embodiment of the invention is illustrated, an outer cylindrical casing 10 is provided, preferably of light weight material such as wood, plywood, sheet metal or the like, which is supported in elevated position with respect to the floor by suitable legs 11. The casing 10 preferably has a removable cylindrical cover or top section 12 mounted thereon the side walls thereof extending upwardly in alignment with the side walls of the casing 10. The cover section 12 is preferably closed by a top wall 13 which is provided with a central opening 14. An electric motor 15 is provided and is supported on a bracket 16 carried on the top wall 13. The electric motor 15 has wires 17 connected thereto leading to a pronged plug 18 which is adapted

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to be plugged in on ordinary house current of 110 volts. On the shaft 19 of the motor 15 a fan 20 is provided for drawing air downwardly through the opening 14 and a screen 32 is mounted in the opening 14 to prevent the entrance of undesired material and for preventing injury to or by the fan 20.

The lower part of the casing 10 is closed by a bottom wall 21 having a central opening 22 from which a frusto-conical section 23, preferably of sheet metal extends upwardly and functions as a funnel, as hereinafter explained.

Within the casing 10 a removable container 25 is provided, preferably made of wire or other foraminous material, such as screening. The container 25 preferably includes a central cylindrical portion 26 and an outer conical portion 27 connected to the cylindrical portion 26 at the bottom. The container 25 is preferably provided with suitable handles 28 for the removal of the same from the casing 10 as desired. The container 25 is adapted to be supplied with hygroscopic material such as calcium chloride, which has the property of absorbing moisture from the atmosphere and forming a solution in the absorbed moisture. A bucket or other suitable container 31 is provided beneath the opening 22 for receiving the dissolved material.

The mode of operation will it is thought be apparent from the foregoing but it may be noted that moisture laden air drawn in by the fan 20 passes and is directed downwardly through the interior of the cylindrical screen portion 26 and in contact with the conical screen portion 27 so as to be brought into intimate relationship with the hygroscopic material in the container. The air of reduced moisture content passes downwardly through the cylindrical screen portion 26 and is discharged through the central opening 22 at the bottom. The moisture taken up and absorbed by the hygroscopic material causes the same to slowly dissolve and the liquid thus resulting passes downwardly through the container 25 and is directed by the funnel portion 23 into the container 31, for collection.

With the dehumidifier of the present invention the moisture content of a room and particularly a basement room or the like may be quickly and easily reduced and by intermittent or continuous operation as required injury to wall coverings, game apparatus and the like in such a room is prevented. At the same time the room is made more comfortable for use.

I claim:

1. In a dehumidifier, a vertical enclosing cas-

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ing having a lower section and a removable upper section, said upper section having an air inlet opening in the top wall thereof, a motor operated fan carried by said upper section for circulating air downwardly through said casing, the lower section at the lower part thereof having an interior inwardly inclined wall with a central discharge opening, supporting means for said casing for spacing said inclined wall upwardly for the reception of a receptacle below said discharge opening, and a removable container for hygroscopic material in said lower section supported by said inclined wall, said container having the walls thereof of foraminous material and having a central vertical foraminous material lined air passageway in communication with said openings, the outer wall of the upper portion of said container being spaced inwardly from the inner wall of said lower casing and the lower portion of said container converging inwardly towards the discharge opening.

2. In a dehumidifier, a vertical cylindrical enclosing casing having a lower section and a removable upper closure section, said upper section having an air inlet opening in the top wall thereof, a motor operated fan mounted on the top wall of said upper section for circulating air downwardly through said casing, the lower section at the lower part thereof having an interior inwardly inclined wall with a central discharge opening, supporting means for said casing for spacing said inclined wall upwardly for the re-

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ception of a receptacle below said discharge opening, and a removable container for hygroscopic material in said lower section supported by said inclined wall, said container having the walls thereof of foraminous material and having a central vertical foraminous material lined air passageway in communication with said openings, the outer wall of the upper portion of said container being spaced inwardly from the inner wall of said lower casing and the lower portion of the outer wall of said container being frusto-conical and converging inwardly towards the bottom thereof.

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