

May 29, 1951

A. T. RACE, JR
DEHUMIDIFYING DEVICE

2,554,879

Filed July 12, 1949

Fig. 1.

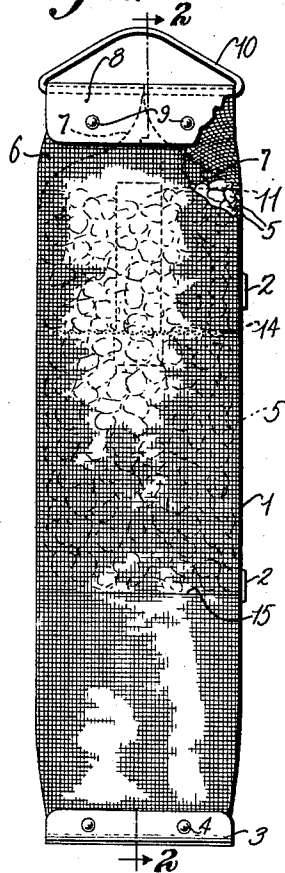


Fig. 2.

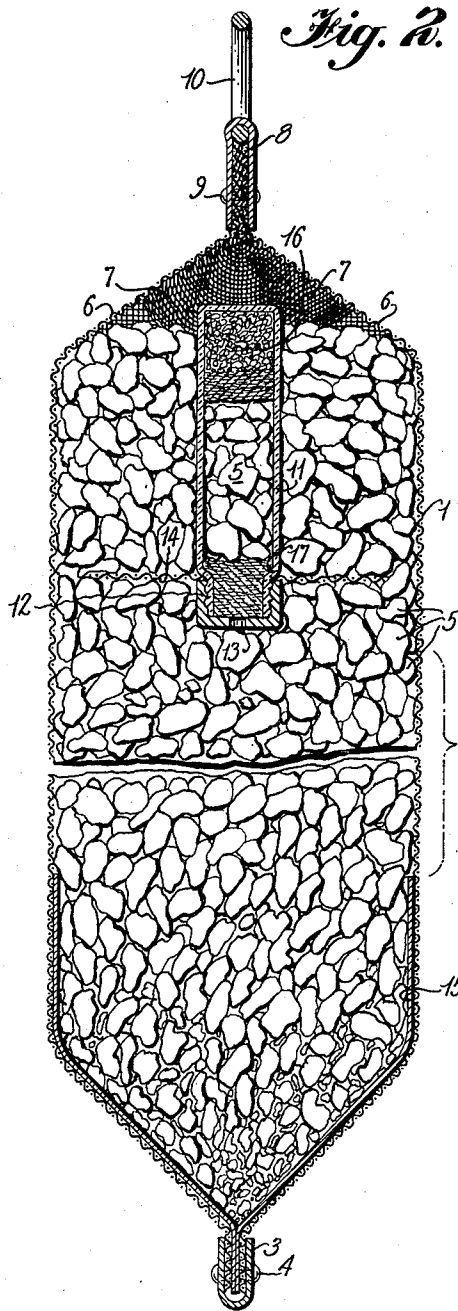
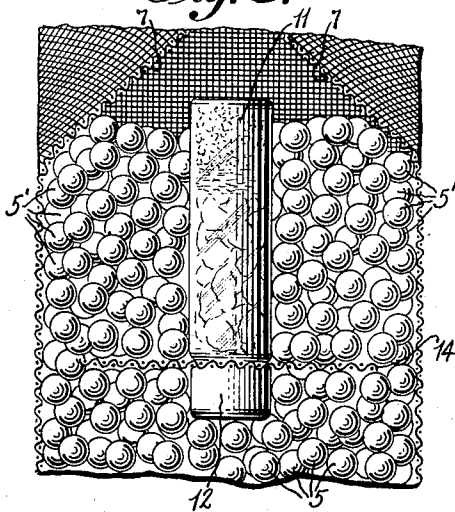


Fig. 3.



INVENTOR.
Austin T. Race, Jr.

BY

Mason, Fenwick & Lawrence

ATTORNEYS

UNITED STATES PATENT OFFICE

2,554,879

DEHUMIDIFYING DEVICE

Austin T. Race, Jr., Winter Haven, Fla., assignor
to Race & Race, Inc., Winter Haven, Fla., a
corporation of Florida

Application July 12, 1949, Serial No. 104,327

4 Claims. (Cl. 183—4.8)

1

This invention relates to dehumidifiers, and more particularly to small, portable dehumidifiers particularly intended for household use in connection with basement recreation rooms, closets and the like, where excessive humidity is particularly objectionable, resulting in mold and an unpleasant atmosphere.

An object of the invention is to provide a practical, commercial article which will be light in weight, contain no moving parts or mechanical apparatus, and which can be readily reconditioned by heating in an oven at periodic intervals.

A further object of the invention is to provide an improved dehumidifier of the type indicated, with an indicator positioned in such a manner and in such relationship to the other elements of the device as to assure its maintaining its proper position, thus assuring the maximum efficiency in the use of the device.

Further objects will more particularly appear in the course of the following detailed description.

The invention consists in the novel construction, arrangement and combinations of parts hereinafter more particularly described and claimed.

One sheet of drawings accompanies this specification as part thereof, in which like reference characters indicate like parts throughout.

In the drawings:

Figure 1 is a front elevation of the improved device, partly broken away to disclose its construction;

Figure 2 is a longitudinal transverse cross section taken on line 2—2 of Figure 1; and

Figure 3 is a fragmentary longitudinal cross section illustrating a modified form of water absorbent material.

In accordance with the present invention a container 1 is formed preferably of woven metal wire having a natural resilience and in the preferred form illustrated this tubular container is formed from a rectangular piece of such woven wire bent into tubular shape and thus secured by means of spaced staples 2 embracing the overlapped margins to form a tube.

The bottom of the tube may be closed in any convenient manner, herein illustrated as compressing opposed sides of the tubes and securing them in close engagement by a channel-shaped clip 3 secured in position as by rivets 4.

Preferably, the bottom portion of the tubular container thus formed is lined with a sheet of aluminum or other metallic foil 5 to prevent the sifting of powdered portions of the water absorbent material out of the container.

2

The container thus formed is filled substantially to its top with water absorbent material such as activated alumina in small particles, as indicated at 5, by reason of which the maximum surface area is exposed and a free circulation of air permitted through the container.

Optionally, the water absorbent material may be formed into uniform shaped pellets 5', as illustrated in Figure 3.

Adjacent the top of the container a transparent vial 11 is positioned inverted, this vial being loaded with a suitable indicator material such as cobalt chloride having the characteristic of changing its color depending upon the water content. In practice, a relatively small quantity of this material is charged into the bottom of the vial 11 and thus held by a packing of gauze, wick or other suitable material, a certain amount of the water absorbent material 5 being permissible, the idea being to permit access of moisture laden air to this indicator material. The vial is closed with a screw cap 12 having a vent 13, and a peripheral fin 14 preferably made of similar woven wire material as the container, is positioned on the vial 11 conveniently by engagement of the screw cap 12 against the fin and a shoulder 17 defining the neck portion of the vial.

In assembling the indicator vial 11 with the container 1, it is inverted, as illustrated in the drawing, and the fin 14 disposed transversely of the container 1 being securely held by the particles of water absorbent material positioned below, above and around said fin, whereby the position of the vial is assured with relationship to the container 1.

This central positioning of the vial 11 is further assured by the mode of closing the top or upper end of the container, which consists in compressing opposite sides 6—6 of the tubular container 1 and by tucking inwardly the intermediate portions 7—7. The overlapped edge portions of these side portions 6—6 and 7—7 are clamped together by a channel-shaped clamp 8 which embraces one side of the triangular handle 10 and is secured in position as by rivets 9.

By reason of the natural resiliency of the woven wire screen material, of which the container 1 is made, these in-turned sides 6—6 and folds 7—7 exert a constant permanent pressure against the adjacent particles of water absorbent material 5 directing said particles against the upper end of the vial 11, and thus assuring the permanent positioning of that portion of the vial containing the indicator material 16 with the transparent top of the vial exposed to observa-

3

tion through the screening material at the top of the container.

In use these devices will be hung in cupboards or small basement rooms to be protected and the indicator material will show at a glance on periodic inspection whether the water absorbent material 5 has reached its saturation point, at which time the devices can be removed and by baking in an oven for a relatively short time the moisture content will be expelled from the water absorbent material with a result in change in color of the indicator material to show dryness, and the device can be re-used repeatedly.

Water absorbent materials other than activated alumina and indicating materials other than cobalt chloride can, of course, be used, the only essential in connection with the latter being that they be of a character to change in color dependent upon the moisture absorbed.

Having thus described my invention, I claim:

1. Dehumidifier comprising a container, a water absorbent material in small particles substantially filling the container, and a transparent indicator vial having a vent in one end, said container formed of woven metal screen in tubular form with opposed portions of an end bent inwardly into contact, with the intermediate portions tucked inwardly and with the edges secured together, whereby an inward resilient pressure is directed against the particles of water absorbent material at that end, and against the indicator vial centrally positioned with respect to the container at that end and with the closed end of said vial exposed and the end having a vent positioned inwardly.

2. Dehumidifier comprising a transparent foraminous container for water absorbent material in small particles, a transparent indicator vial having a vent at one end, and means for anchoring said vial centrally of the mass of absorbent material with its closed end exposed within and at the end of the container and its vented end imbedded centrally of the mass of material, comprising a fin of foraminous material, said fin surrounding and extending in a plane perpendicular to the long axis of said vial,

4

whereby the vial is stabilized in position when it with said fin is embedded in the water absorbent material.

3. Dehumidifier comprising a tubular woven wire container filled with water absorbent material in small particles, a transparent vial containing material reflecting moisture content by color change, said vial having a vent in one end and a peripheral fin extending in a plane perpendicular to its long axis, said vial and fin embedded in the particles of water absorbent material at the top end of the container with the top closed portion of the vial exposed, and the bottom vented end imbedded in the absorbent material said container having its opposite sides at the top end compressed together and the intermediate portions turned inwardly to exert a compressive inward and downward pressure on the water absorbent particles surrounding the vial and a metallic foil liner interposed between the water absorbent particles and the container at the bottom of the latter.

4. De-humidifier comprising a foraminous container substantially filled with water absorbent material, an elongated transparent vial containing material reflecting moisture content by color change, said vial having a vent in one end only and means for positioning said vial imbedded in said water absorbent material with the vent substantially central of the mass of said material and its opposite closed end exposed for inspection from the exterior of the container.

AUSTIN T. RACE, Jr.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,341,893	Baker	Feb. 13, 1944
2,469,435	Hirsch	May 10, 1949

FOREIGN PATENTS

Number	Country	Date
345,672	Great Britain	Mar. 23, 1931