Jan. 8, 1952 H. W. McKENZIE 2,581,684

DESICCATOR

Filed June 9, 1947

Fig. 1.

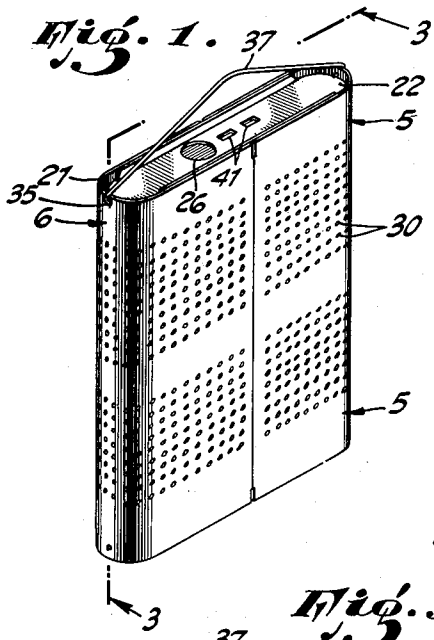


Fig. 2.

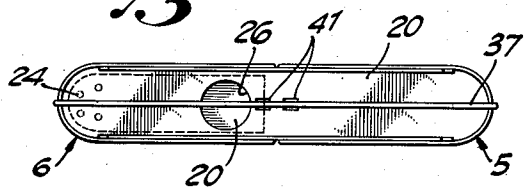


Fig. 3.

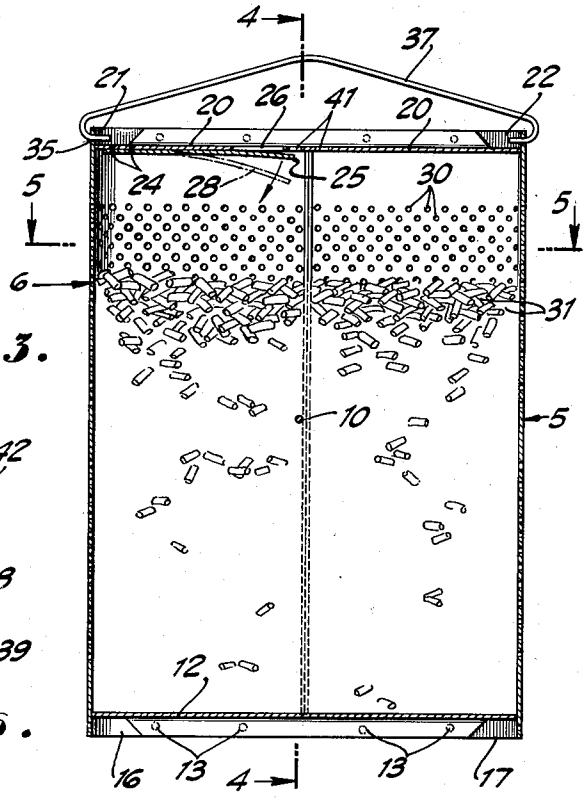


Fig. 4.

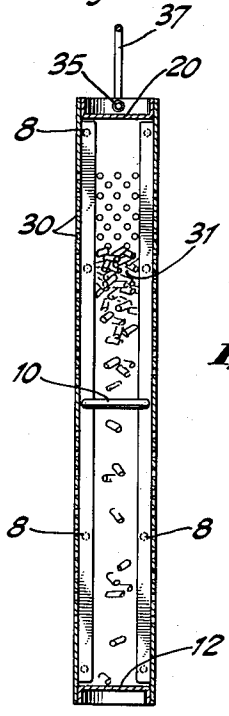


Fig. 6.

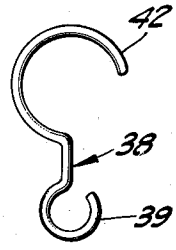
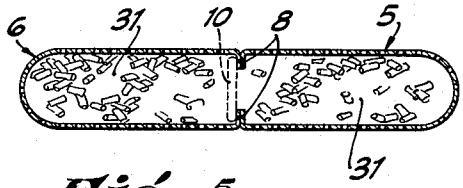


Fig. 5.



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Patented Jan. 8, 1952 2,581,684

UNITED STATES PATENT OFFICE

2,581,684

DESICCATOR

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Application June 9, 1947, Serial No. 753,533

1 Claim. (Cl. 299—24)

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This invention relates to a method of and means for adsorbing moisture from the air, and particularly to a container for efficiently utilizing and applying a desiccating material, desiccant, or adsorbent.

Desiccants have been used in various ways for adsorbing moisture or liquids from air or other gases, particularly in chemical processes. The present invention is directed to a particularly convenient and efficient method of and means for drying air in a closed space, such as rooms, clothes closets, trunks, chests, drawers, cabinets, vaults, or the like, to obtain and maintain a low humidity condition within the space. It is especially suitable for use in the spaces just mentioned when containing clothes, guns, photographic equipment, or any other items which are subject to deterioration by rust or mildew when the humidity is high. It may also be placed in food cabinets to maintain a low humidity for keeping certain foods, such as crackers and the like, in their original crisp condition.

The invention includes a container which is so constructed and proportioned as to obtain the maximum efficiency from the desiccant used therein. The container aids in prolonging the life of the desiccant in permitting the desiccant to adsorb 40% of its own weight in moisture under certain conditions and in permitting it to be renewed simply by placing it in a drying atmosphere, such as a hot oven. The container may be economically and quickly constructed and filled with the desiccant.

The principal object of the invention, therefore, is to facilitate the drying of air.

Another object of the invention is to provide an improved method of and means for increasing the efficiency of utilization of a desiccant.

A further object of the invention is to provide an improved container for a desiccant.

A still further object of the invention is to provide a desiccant container of dimensions such as to obtain optimum efficiency in the effectiveness of the desiccant and which may be easily filled and hung or supported in the area to be dried.

Although the novel features which are believed to be characteristic of this invention will be pointed out with particularity in the appended claim, the manner of its organization and the mode of its operation will be better understood by referring to the following description read in conjunction with the accompanying drawings, forming a part hereof, in which:

Fig. 1 is a perspective view of the invention;

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Fig. 2 is a plan view of the invention;

Fig. 3 is a cross-sectional, side view taken along the line 3—3 of Fig. 1;

Fig. 4 is a cross-sectional, end view taken along the line 4—4 of Fig. 3;

Fig. 5 is a cross-sectional, plan view taken along the line 5—5 of Fig. 3; and

Fig. 6 is an elevational view of a modification of the hook for the container of the invention.

Referring now to the drawings, in which the same numerals identify like elements, the container is made of two principal sections 5 and 6 formed in the shape of U's to provide the walls and side edges of the container. The edges of the sections 5 and 6 are attached, preferably, by spot welding, as shown at 8. The material of the sections 5 and 6 may be of any suitable material, such as wire mesh, a heat resistant plastic, iron, or aluminum with a high heat resistant aluminum coating sprayed, dipped, or baked thereon. A one-quarter inch rod 10 may be welded or otherwise attached at the center of the container to provide additional stiffness and prevent any expansion of the sides.

The bottom of the container is formed of a U-shaped channel 12 which may be welded to the respective sides of the sections 5 and 6, as shown at 13 in Fig. 3, while two curved end sections 16 and 17 close the end portions of the bottom. The top of the container is closed similarly to the bottom with a U-shaped member 20 having end sections 21 and 22.

The upper end closing member 20 has welded, on the underside thereof at 24, a strip of spring metal 25, the end of which rests under an opening 26. The container may thus be filled through the opening 26 simply by bending the strip 25 downwardly, as shown by the dotted lines 28, after which the strip 25 returns to its normal position to close the opening 26. Other means of closing the opening 26 may also be used, such as a pressed-on friction cap. A plurality of small holes 30 are punched in the sections 5 and 6 to provide ingress and egress of air to the desiccant shown at 31. This desiccant may be of any commercial type, but preferably, it is "Desiccite No. 25," which has been found to adsorb 40% of its own weight in moisture under certain conditions, and is capable of regeneration by drying. It is to be noted that the lower group of holes 30 do not extend to the bottom of the container which provides a tight container to prevent the loss of particles of the desiccant smaller than the holes.

In the center of the curved portions at the

top of the container, small holes, such as shown at 35, may be punched to accommodate a handle, such as shown at 37. One end of the handle may be readily removed from its hole, and the handle put over a clothes closet pole and then the end of the handle returned to its supporting hole. Another means of supporting the container is shown in Fig. 6, which is simply a hook 38 having a lower small curved portion 39 which may be inserted through a pair of slots 41 in the top section 20, while the upper curved section 42 may be placed over a clothes closet supporting pole or hook.

It has been found that when using the above-named commercial desiccant, which is made up of particles substantially three-sixteenths of an inch in diameter and three-sixteenths of an inch long, the container should have dimensions of substantially one and three-quarters of an inch thick, fourteen inches high, and ten inches wide (1¾'' x 14'' x 10''). These dimensions have been found to be optimum to obtain the maximum in efficient drying of the surrounding atmosphere as they permit all of the desiccant to function while keeping the size of the container within practical limits.

The container is pleasing in appearance and the rounded side edges make it convenient to handle. In a container of the size described, about seven pounds of the desiccant is used. The desiccant is effective for approximately thirty days in air of normal humidity when placed in a normal sized closet, chest, or similar sized closed space. At the end of this period, or sooner, if required, due to extremely high humidities or too frequent exposures of the space to the outside atmosphere, the entire container with the desiccant may be placed in the oven and dried; thus, bringing it back to its original

efficacy. For larger areas or spaces, the container may be increased in length and width to contain more desiccant, although the width should be held at appproximately one and three-quarters inches. It is preferable in such instances, however, to use two or more units of the size described above.

I claim:

In a desiccator, a vertically elongated container including a pair of complementary wall body forming sections, each of said sections having an inturned flange at each side edge, the flanges of the respective sections being united in abutting relation to form joints extending the full height of the wall body, said wall body having a multiplicity of apertures therethrough intermediate the top and bottom ends, a wall member fixed horizontally in the top and bottom respectively of said wall body, each of said wall members having vertical flanges on its longitudinal sides secured to the body, the top wall member being provided with a filling opening, and a cover member resiliently biased to cover said filling opening.

HERBERT W. McKENZIE.

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