

- [54] CONTAINER DISPENSER FOR PACKETS OF SOLID AIR TREATING AGENT
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- [22] Filed: May 30, 1973
- [21] Appl. No.: 365,089
- [52] U.S. Cl. 239/57, 239/60
- [51] Int. Cl. A61I 9/04
- [58] Field of Search 239/57, 58, 59, 60

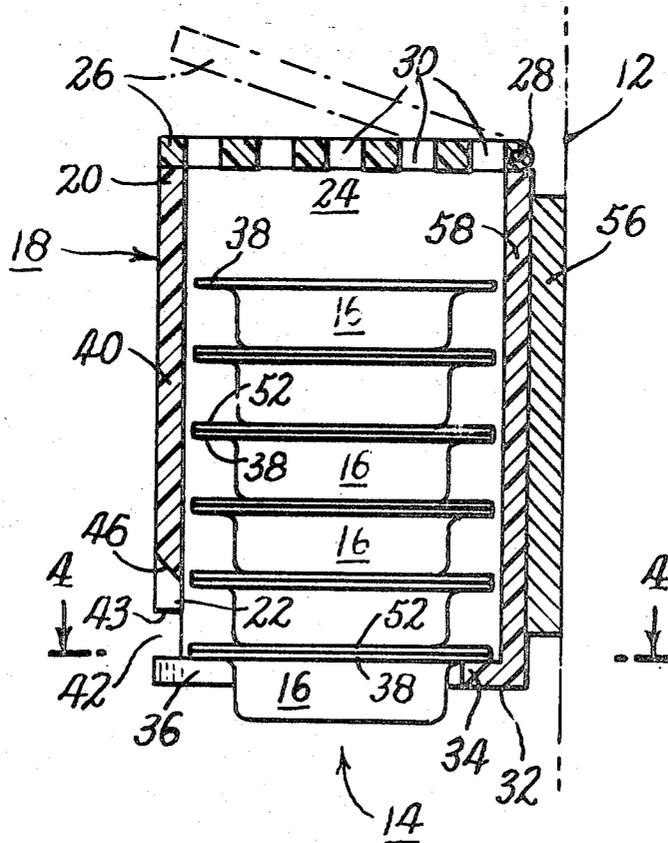
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[57] ABSTRACT

An air-treating device is disclosed in which a plurality of sealed packets containing a solid air-treating agent is supported in a hollow container having at least one opening through which individual packets are inserted or removed from the container. The individual sealed packets each have a removable wall portion or cover for exposing the air-treating agent contained therein, so that individual packets, stored in the container, can be selectively removed from the container and opened to expose the air-treating agent therein. The opened packets can then be replaced in the container, adjacent the opening therein, for support and storage in the container while the vapors from the solid air-treating agent in the opened packet escape from the container into the surrounding atmosphere.

16 Claims, 5 Drawing Figures

- [56] **References Cited**
- UNITED STATES PATENTS**
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CONTAINER DISPENSER FOR PACKETS OF SOLID AIR TREATING AGENT

The present invention relates to an air-treating device and, in particular, to a device for simultaneously storing and using individual packets of solid air-treating agent.

The sale and manufacture of air treating agents, and in particular room deodorizers and the like, has expanded substantially in recent years and a variety of air-treating products or agents recently have been developed for commercialization. Included among these are the solid air-treating agents, i.e. solid compositions from which volatile air-treating materials slowly vaporize when the solid is exposed to air. Certain of such solid air-treating agents, described in U.S. Pat. No. 2,929,055, issued to Lanzet, comprise a solid gel containing volatile air-treating materials.

Solid air-treating agents of this type have many advantages and have been found to be highly satisfactory in use. In particular, they do not discharge a liquid phase, as do the aerosol spray products which may stain garments or furniture and may be inhaled.

However, one problem with solid air-treating agents is the somewhat limited manner in which they have been stored and used. For the solid air-treating agent to be effective it must be exposed to the atmosphere; thus it cannot be enclosed within a container like that used with liquid or aerosol spray air-treating agents. Accordingly, special containers are required to store the solid air-treating agent while simultaneously exposing enough of it to permit it to release air-treating vapors as desired. For applications where it is desirable to move the solid air-treating agent from one room to another in the home, or to use a small amount of the air treating agent in a car, boat, or house trailer, no packaging system has as yet been proposed which will permit simultaneous storage and use of the agent.

Accordingly, it is an object of the present invention to provide an air-treating device which utilizes solid air-treating agents and which is convenient to use and to transport.

Yet another object of the present invention is to provide an air-treating device, including a solid air-treating agent, for use in automobiles, house trailers, boats and the like.

Yet another object of the present invention is to provide a container system for solid air-treating agents in which a supply of solid air-treating agent can be stored while a portion thereof is exposed for use.

In accordance with one aspect of the present invention, a portable air-treating device is provided in which a hollow container, having upper and lower end portions, is constructed so as to receive and support a stack of individually sealed packets of solid air-treating agent. The lowermost packet of the stack is supported on a support wall at the lower end of the container and the upper end of the container has a first opening therein through which the stack of packets is inserted into the container. In addition, the container includes a wall member which extends between the upper and lower ends of the container, and which has a free edge spaced from the lower support wall of the container, thereby to define a slot in the container adjacent the support wall through which the lowermost one of the packets in the stack can be removed from the container. As a result of this construction, individual pack-

ets of solid air-treating agent can be selectively removed from the container and opened to expose the air-treating agent therein to the atmosphere. This opened packet can then be returned to the container through the opening in the upper end thereof for support on top of the stack and for transport with the container while the vapors from the air-treating agent there in escape from the container into the surrounding atmosphere. This opening may, in one embodiment of the invention, be provided with a closable cover which will prevent inadvertent discharge of the packets of material from the container should the container be inverted.

The above, and other objects, features and advantages of this invention, will be apparent in the following detailed description of an illustrative embodiment thereof which is to be read in connection with the accompanying drawings, wherein:

FIG. 1 is a schematic perspective view of an air-treating device, constructed in accordance with the present invention, mounted on the dashboard of an automobile;

FIG. 2 is an enlarged plan view of the device illustrated in FIG. 1;

FIG. 3 is a side sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a sectional plan view taken along line 4—4 of FIG. 3; and

FIG. 5 is an enlarged perspective view of a packet constructed in accordance with the present invention and containing solid air-treating agent.

Referring now to the drawing in detail, and initially to FIG. 1 thereof, it will be seen that air treating device 10, constructed in accordance with the present invention, is mounted on dashboard 12 of an automobile for use in deodorizing or treating the air in the automobile. This device, as described more fully hereinafter, can be utilized in other types of vehicles or enclosures, such as for example, camping trailers, boats, or the like, and can be used as a deodorizer for individual rooms in a home.

Air treating device 10, in the illustrative embodiment of the present invention, is adapted to contain stack 14 (seen most clearly in FIG. 3) of individual packets 16 containing solid air treatment agent. By the construction of device 10, individual packets 16 can be selectively removed from stack 14 and opened to expose the solid air-treating agent contained therein.

Preferably, air-treating device 10 is constructed as generally rectangular or square container 18 formed of a plastic material having upper and lower ends 20, 22 respectively. Upper end 20 of container 18 forms opening 24 through which the individual packets 16 of solid air-treating agent can be inserted into the container. Cover 26 is pivotally mounted adjacent opening 24, as for example on pivot 28 to permit opening and closing opening 24 as desired. This cover may be provided with a releasable latching mechanism (not shown) of any convenient known construction so that it is held securely in its closed position during use of the device, thereby to prevent stack 14 of packets from being inadvertently discharged therefrom should container 18 become inverted. In addition, cover 26 has a plurality of apertures 30 formed therein, for reasons more fully described hereinafter.

Lower end 22 of container 18 includes generally U-shaped bottom wall 32, illustrated most clearly in FIG.

4, having bight portion 34 and a pair of legs 36 which define opening 37 therebetween at one side of the container. Legs 36 and bight 34 are adapted to cooperate with and engage flange 38 formed on the lowermost packet 16 in stack 14 (as described hereinafter) to support that packet and the stack of packets seated thereon. These packets are of identical construction and are placed within the container individually through opening 24 when cover 26 is raised.

Container 18 also includes front wall member 40 which extends from upper end 20 of container 18 towards its lower end 22 above opening 37 of U-shaped support wall member 32. However, wall 40 ends at a location above wall 32 so as to define slot 42 in container 18 between the lower edge 43 of the wall 40 and support wall 32. As a result of this slotted construction, lowermost packet 16 in stack 14 can be withdrawn from container 18 by grasping the forward edge of flange 38 of that packet and pulling the packet forward through the front opening 37 of wall 32 and slot 42. Moreover, lowermost packet 16 is the only packet withdrawn from the container and, when it is withdrawn, the next packet falls downwardly under the influence of gravity onto wall 32, with that packet's flange 38 supported on the bight and let portions of the wall. To facilitate removal of lowermost packet 16 from the stack within container 18, notch 46 can be provided in front wall 40 to permit insertion of a finger into the container and into engagement with flange 38 of the lowermost packet.

Packets 16, most clearly illustrated in FIG. 5, can be formed in any convenient manner, and preferably are formed of relatively thin plastic or metal to define chamber 46 having peripheral wall or flange 38 formed integrally therewith at its upper edge. Preferably, packets 16 have a complementary configuration to that of container 10 so that each of the packets fits closely therein, as illustrated in FIG. 3. Thus, since container 10 in the illustrative embodiment of the invention is shown as a generally square container, packets 16 in the illustrative embodiment are also formed as squares. Of course, it is to be understood that both container 10 and packets 16 can be formed in any desired shape, such as for example round or oval, so long as the principle of cooperation of the container and the packets as described herein is maintained.

Returning again to FIG. 5 of the drawing, it is seen that chamber 46 of packet 16 has open upper portion 48 adjacent flange 38 and contains supply 50 of solid air-treating agent therein. This air-treating agent may be of the type described in the above mentioned Lanzet patent. for example. Opening 48 is selectively covered by foil sheet 52, such as of metal or plastic, which may be adhered along edges 54 thereof to flange 38 by any convenient adhesive material. With sheet 52 covering opening 48, solid air treatment agent 50 in chamber 40 is isolated from the atmosphere and thus will not release vapors. In addition, chamber 46 is dimensioned to fit between legs 36 of wall 32 to permit flange 38 of packets 16 to be engaged and supported by wall 32, as seen in FIG. 3.

Accordingly, by providing a stack of individual packets 16 within container 18, a relatively large supply of air-treating agent can be stored without deterioration and without the escape of volatile ingredients therein to the atmosphere.

When it is desired to use the solid air-treating agent contained within the packets, lowermost packet 16 in stack 14 is removed from container 10 in the manner described above, and sheet 52 is removed from the container to expose the air-treating material. The packet is then returned to container 18 through opening 24 so that the opened packet, with the air-treating material now exposed, is now on the top of stack 14. In this position, vapors from the solid air-treating agent can escape through openings 30 in cover 26. These openings may take the form of a plurality of slots, as illustrated in FIG. 2 of the drawing, or they may be formed as circular or oval holes, or the like.

In one embodiment of the invention, container 18, as illustrated in FIG. 1 of the drawing, can be secured to the dashboard of an automobile or other vehicle. In this case the container can be provided with suitable attachment means, for example, magnet 56 secured to rear wall 58 of the container in any convenient manner, e.g. by an adhesive or by screws, bolts or the like. The magnet will hold the container on the dashboard or elsewhere in the vehicle in a location convenient for use. Of course, it is to be understood that other convenient mounting means such as an adhesive strip or the like could be provided on container 18 for securing air-treating device 10 of the present invention to a wall or other surface.

Accordingly, it is seen that a relatively simple and inexpensive container is provided for storing and transporting individual packets of a solid air-treating agent and for selectively exposing a portion of the stored air-treating agent to the atmosphere for use. By this construction only a portion of the air-treating agent is used at one time while the remainder is kept in a sealed condition for storage.

Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to that precise embodiment and that various changes and modifications may be effected therein by one skilled in the art without departing from the scope or spirit of this invention.

What is claimed is:

1. An air-treating device comprising a hollow container, a plurality of sealed packets supported within said container and respectively containing solid air-treating agent, said packets having a selectively removable wall portion for exposing said air-treating agent to the atmosphere, said container having at least one opening through which individual packets are inserted or removed from said container, whereby an individual packet having exposed solid air-treating agent therein is adapted to be supported in said container adjacent said opening to permit vapors from said solid air-treating agent to escape from said container into the surrounding atmosphere.

2. The air-treating device as defined in claim 1 wherein said container includes a movably mounted cover for selectively opening and closing said container, said cover having a plurality of apertures therein to permit vapors from said solid air-treating agent to escape from said container.

3. The air-treating device as defined in claim 2 wherein said container includes opposite end portions, said opening being located at one of said end portions, said container having a second opening therein adjacent the other of said end portions, and said container

having means adjacent said second opening for supporting a packet therein for selective removal from said container.

4. The air-treating device as defined in claim 3 wherein each of said packets includes a laterally-extending flange portion about substantially its entire periphery and said means at said second opening includes an inwardly-directed flange about a substantial portion of its periphery for engaging the flanges on one of said packets to support said packets in said opening.

5. The air-treating device as defined in claim 4 wherein said packets and said container are respectively dimensioned to permit said packets to fit within said container in a single stack, with one packet supported upon another and the lowermost packet supported in said opening by the cooperation of said flanges.

6. The air-treating device as defined in claim 5 wherein said second opening and its associated flange have a predetermined configuration selected to permit the lowermost packet in said container to be removed therefrom by sliding said packet laterally with respect to said stack.

7. The air-treating device as defined in claim 6 wherein said container and said packets are generally rectangular when viewed in plan.

8. The air treating device as defined in claim 3 including means for supporting said container on a wall or the like.

9. The air-treating device as defined in claim 8 wherein said last mentioned means comprises a magnet.

10. A device for use in treating air comprising a hollow container adapted to receive and support a stack of individual sealed packets having solid air-treating agent contained therein, said container including upper and lower ends and having a first opening at said upper end, support wall means for said stack of packets at said lower end, and a wall member extending from said upper end towards said support wall means and spaced therefrom to define a slot in said container adjacent said support wall means through which the lowermost of said packets, supported by said means in said stack, may be removed from the container, whereby said removed packet can be opened to expose said air-treating

agent to the atmosphere and then returned to said container through said first opening for support on the top of said stack while vapors from said exposed air-treating agent escape from the container into the surrounding atmosphere through said first opening.

11. The device as defined in claim 10 wherein said packets each have an upper end portion and a peripheral flange extending laterally outwardly thereof, and wherein said support wall means comprises a generally U-shaped wall member opening towards said slot, said U-shaped wall member including bight and leg portions adapted to engage the peripheral flange of the lowermost of the packets in said stack, thereby to support said packet in said container, the opened end of said U-shaped wall member being directed towards and below said slot to permit removal of said lowermost packet from said container through said slot.

12. The device as defined in claim 11 wherein said container includes a movably mounted cover adjacent said upper end portion for selectively opening and closing said first opening, said cover having a plurality of apertures therein to permit vapors from exposed solid air treatment agent in the uppermost packet of said stack to escape from said container into the atmosphere.

13. The device as defined in claim 12 including means for supporting said container on a wall or the like.

14. The device as defined in claim 13 wherein said last mentioned means comprises a magnet.

15. The device as defined in claim 12 including in combination, a plurality of sealed packets supported within said container in a stack, said packets having chamber means formed therein for containing said solid air treating agent and extending downwardly from said peripheral flange, said chamber means having a predetermined configuration to fit between the legs of said U-shaped wall member.

16. The device as defined in claim 15 wherein said chamber means has an opening at said upper end portion of the packet for exposing said air-treating agent therein and wherein a selectively removable cover sheet is secured to said packet to cover said opening.

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