

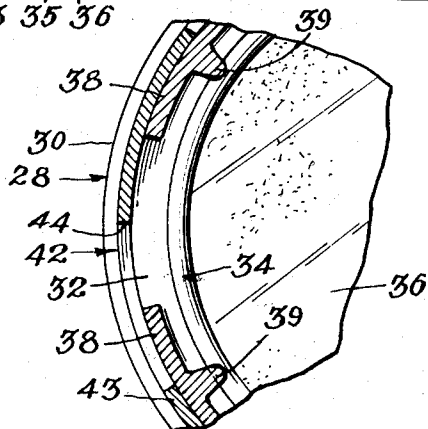
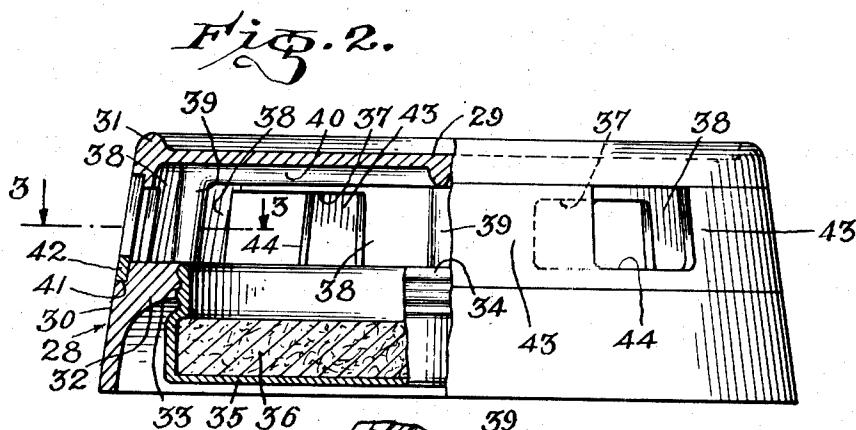
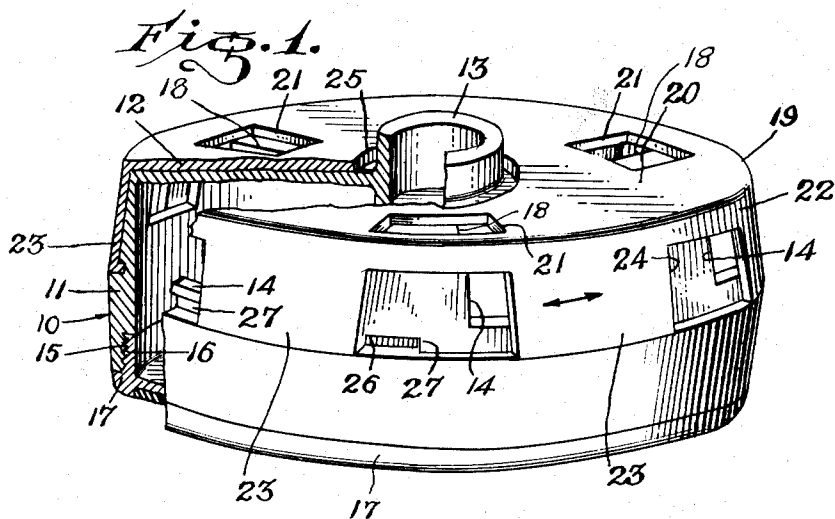
Oct. 27, 1953

G. W. MEEK

2,657,090

COMBINATION DIFFUSER DEVICE AND ARTICLE SUPPORTING BASE

Filed July 10, 1952



INVENTOR
George W. Meek.
 BY
Howard E. Thompson Jr.
 ATTORNEY

UNITED STATES PATENT OFFICE

2,657,090

COMBINATION DIFFUSER DEVICE AND
ARTICLE SUPPORTING BASEGeorge W. Meek, Pelham, N. Y., assignor to
Airkem, Inc., New York, N. Y., a corporation
of New York

Application July 10, 1952, Serial No. 298,140

14 Claims. (Cl. 299—24)

1 This invention relates to diffuser devices adapted for the introduction of volatilizable material into air. More particularly, the invention relates to a combination diffuser device and article supporting base having a fixed article supporting means and movable means for adjustably controlling the rate of evaporation of volatilizable material from within the device.

In my co-pending joint application, Wheeler, Von Bergen and Meek, Serial Number 151,211, filed May 22, 1950, since issued as United States Patent Number 2,603,532, dated July 15, 1952, there is disclosed and claimed a combination diffuser device and ash tray comprising a base part adapted to receive volatilizable material and a movable ash tray supporting element having circumferentially spaced members cooperating with other circumferentially spaced members on said base to provide aperture forming means circumferentially of the device, by which the rate of evaporation of volatilizable material can be controlled. While this device is practical for certain uses, it will be noted that rotary adjustment of the upper part of the device in controlling the size of the circumferential apertures therein can only be made with a corresponding rotary movement of the ash tray mounted thereon.

The present application, which may be considered as a continuation-in-part of said co-pending application, is concerned with an improved form of construction in which the aperture control means is independent of the article supporting means of the device and can be moved and regulated to control operation of the device without, in any way, disturbing the article supported thereon. Improved devices in accordance with the present invention have the further advantage of being adapted for sturdy reinforced construction, thus making possible the support of many types and kinds of articles, including heavy articles such as lamps, flowerpots and the like.

Regarded in certain of its broader aspects, my invention comprises a base part having a top wall, a side wall having a plurality of apertures therein and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, and means movable with respect to the top of said device and having a plurality of spaced members overlying the side thereof for selectively covering and exposing the apertures in said side wall. In preferred adaptations of my device, the protruding members of

2 said last named movable means are adapted to flex outwardly in providing a snap engagement with undercut portions of the side wall of the device in retaining said movable means against accidental displacement from the device.

The novel features of my invention will be readily understood from a consideration of the following description in connection with the accompanying drawing, in which certain adaptations of my invention are illustrated, in which the various parts thereof are identified by suitable reference characters, and in which:

Fig. 1 is a perspective view of one form of my device, with part of the structure broken away and in section and indicating the device adjusted to a partially open operative position.

Fig. 2 is a side elevation of a modified form of my device, with part of the structure broken away and in section and indicating the control means in a partially open operative position; and

Fig. 3 is a partial sectional view substantially on the line 3—3 of Fig. 2.

The diffuser device and article supporting unit, as shown in Fig. 1 of the drawing, comprises a base part 10 having side walls 11 and a top wall 12, the central portion of which is provided with a socket part 13, which may be utilized in supporting various types and kinds of articles thereon; thus, for example, the socket 13 may engage the base of a candle or the suitably fashioned base of various articles, such as bowls, vases, candelabra and other articles such as are used in combination centerpiece units. It will be understood, of course, that the supported article may engage the outer surfaces of the socket part 13 and, in this connection, it is within the scope of the invention to provide in place of a socket 13 a protruding lug for engagement with a socket part on the article to be supported.

The side wall 11 is provided with a plurality of apertures 14 for permitting air to enter the device and volatilizable material supported therein to escape therefrom. In this connection, it will be noted that the lower edge of the side wall 11 is provided with an internally threaded portion 15 for engagement with a protruding threaded portion 16 on a detachable bottom or closure member 17 of the device. Thus, when it is desired to arrange a flat can or other container of volatilizable material within the device, it is merely necessary to unscrew the bottom or closure member 17, place the container of volatilizable material thereon and reassemble the bottom member to the side wall 11.

For purpose of illustration, I have indicated the device as having six radially arranged apertures 14 in the side wall thereof. In the top wall of the device I have also shown three apertures 18, which are in alignment with alternate apertures 14 in the side wall. Overlying a portion of the top wall and side wall is a movable control member 19 having, in the top surface 20 thereof, three apertures 21 adapted to register with the apertures 18 in the base part and in the side wall 22 thereof a plurality of protruding tabs 23 forming cutout portions 24 adapted to register with the apertures 14 in the side wall of the base part.

Since there are six apertures 14, there will be six protruding parts 23 and cutout portions 24 to register therewith and it will be noted that the width of the protruding portions 23 and the space between the apertures 14 is somewhat greater than the width of the cutout portions 24 and apertures 14, thus, in one position of adjustment of the control member 19, the protruding members 23 will overlie and completely close the apertures 14; whereas, in other positions of adjustment thereof, the apertures 14 may be partially exposed, as indicated in the drawing, or by further adjustment fully exposed to permit maximum passage of air and volatilizable material therethrough.

By providing three apertures 18 and 21 in the top of the device, as compared with the six apertures 14 and cutout portions 24 in the side wall, it will be apparent that two types of operative adjustment of the device are possible. By rotating the movable member 19 in one direction from the closed position, both side apertures and top apertures can be opened to any predetermined or desired extent. On the other hand, if the movable member 19 is rotated in the opposite direction, the top apertures will remain closed and only the side apertures will be opened. The latter type of adjustment provides simple cross-circulation of air through the device; whereas, the type of adjustment first mentioned permits entrance of air through the side openings and discharge of a portion of the air and volatilizable material through the top openings. In other words, it will be evident that the device, as shown in Fig. 1, provided great flexibility in operation and a wide range of control in the rate and manner of introducing volatilizable material into air.

It will be noted that the movable part 19 has a central aperture 25 in the upper surface 20 thereof for receiving the socket part 13 and the aperture 25 is preferably of a size to provide a space between the movable member 19 and the socket part 13 to facilitate mounting of supported articles to engage external surfaces thereof, as previously described.

The protruding tabs 23 are free to flex outwardly to a moderate extent and, in this connection, diametrically opposed tabs are provided with inwardly protruding members 26 at the extremity thereof for engagement with undercut portions 27 in the side wall 11. The protruding members 26 thereby provide a snap engagement with the undercut portions 27 in retaining the movable member 19 against accidental displacement from the device. The undercut portion 27 may extend completely around the device but, by providing undercut portions 27 only at diametrically opposed intervals, it will be evident that the undercut portions 27 and inwardly protruding members 26 can form a means for limiting circumferential movement of the movable member 19, thereby facilitating adjustment of the device

into the various operative positions, above mentioned.

In Figs. 2 and 3 of the drawing, I have shown a modified form of device which is generally similar to that shown in Fig. 1, but differs in that substantially the entire top of the device is used as an article supporting means and the adjustable controls for the wide apertures are arranged wholly along the side walls of the device.

As shown in Figs. 2 and 3, the vapor diffuser and article supporting device comprises a base part 28 having a top wall 29 and side walls 30 and being open at the bottom portion thereof. The top wall 29 is provided with a peripheral rib 31 providing means for positioning and aligning an article to be supported on the base. The side wall 30 has an inwardly extending annular portion 32 centrally thereof having means, as indicated by the threads 33 for detachably engaging corresponding means, as indicated by the threads 34 of a container 35 for volatilizable material 36. While this means for attaching the container 35 has been indicated as a threaded means, it will be understood that any suitable interengaging means, such as bayonet grooves and the like, can be employed. In this connection, it will further be noted that the engaging means 34 on the container 35 also serves as means for retaining a cover part on the container during initial shipment and storage. The volatilizable material 36 can be any suitable material for introducing vapors to the air, but the device is particularly suited for use with containers of volatilizable material comprising a liquid medium substantially solidified by means of a gelling agent.

Above the inwardly extending annular portion 32, the side wall 30 is provided with a plurality of cutout portions or apertures 37 separated by connecting webs 38 which are integral parts of the side wall. The webs 38 are preferably provided with inwardly extending reinforcing parts 39 which are extended into reinforcing ribs 40 on the lower surface of the top wall, thereby providing a substantial stiffening of the top wall and permitting the support of relatively heavy articles, such as lamps, flowerpots and the like on the diffuser base.

The outer surface of the side wall 30 is provided with an annular recess 41, which recess has a slidable control ring 42 having a continuous lower edge portion and a plurality of upwardly extending tabs 43 forming cutout portions 44 corresponding with the apertures 37. It will be noted that the tabs 43 and webs 38 are slightly greater in width than the apertures 37 and cutout portions 44, thereby permitting a complete closure of the apertures 37 when the tabs 43 are moved into alignment therewith.

As indicated in the drawing, the side wall 30 is provided with a slight taper extending through the upper portion thereof and it will be noted that this construction provides means for readily mounting the ring 42 on the device. The tabs 43 have a slight spring action permitting them to flex over the upper edge of the device and snap into engagement with the cutout portion 41, as the ring 42 is forced downwardly over the device. In this way, the ring 42 is firmly retained against displacement from the device and is yet free to be rotated in providing adjustment of the size of the aperture openings and, if desired, it will be apparent that the ring can be removed by prying outwardly the tabs 43 to disengage the tabs with the cutout portion 41.

5

It will be understood, of course, that various features as disclosed in Figs. 1 and 2 of the drawing can be employed interchangeably in the two devices. Thus, for example, the base 28, as shown in Fig. 2, can be closed by means of a removable cover or closure part, such as the closure 17 shown in Fig. 1. Similarly the device, as shown in Fig. 1, can be provided with an inwardly protruding annular support, similar to the support 32, shown in Fig. 2, for mounting a container of volatilizable material in the device. It will further be noted that, in both modifications, the article supporting means at the upper surface of the device can be modified or fashioned in any desired manner to provide an interengaging support with particular types of articles to be mounted on the device.

These and other changes and modifications in the vapor diffuser and article supporting device herein disclosed will occur to those skilled in the art and, to the extent that such changes and modifications are embraced by the following claims, it is to be understood that they constitute part of my invention.

I claim:

1. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, and means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall.

2. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, and the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut portions of said side wall.

3. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, and the article engaging means comprising a recessed socket part protruding from said top wall.

4. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable

6

with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, and said article supporting means comprising a circumferential rim protruding upwardly from the surface of said top wall.

5. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut positions of said side wall, and said movable means having a circumferential band portion overlying and slidably engaging the top wall of said base part.

6. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut positions of said side wall, said movable means having a circumferential band portion overlying and slidably engaging the top wall of said base part, and said band portion having a plurality of spaced apertures therein adapted to register with correspondingly spaced apertures in the top wall of said device.

7. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut positions of said side wall, said movable means having a circumferential band portion overlying and slidably engaging the top wall of said base part, said band portion having a plurality of spaced apertures therein adapted to register with correspondingly spaced apertures in the top wall of said device, and the number of apertures in the top wall of said device being one-half the number of apertures in the side wall thereof whereby rotation of said movable means in one direction will control apertures in the side wall only and rotation thereof in the opposite direction will control apertures in both the side and top wall thereof.

8. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut portions of said side wall, and said movable means comprising an annular ring slidably engaging a recessed portion of said side wall extending circumferentially thereof.

9. A combination diffusing and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the extremities of said members being adapted to flex outwardly in providing a snap engagement with undercut portions of said side wall, said movable means comprising an annular ring slidably engaging a recessed portion of said side wall extending circumferentially thereof, said ring having a substantially frusto conical contour, and the lower continuous portion thereof having an inside diameter slightly greater than the external diameter of the upper portion thereof.

10. A combination diffuser and article supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, and the means for detachably supporting a container of volatilizable material comprising a bottom forming closure part detachably engaging the lower edge of said side wall.

11. A combination diffuser and articles supporting device comprising a base part having a top wall, a side wall having a plurality of apertures therein, and means accessible through the bottom of said base part for detachably supporting a container of volatilizable material therein, means on the top wall for engaging and positioning articles supported thereon, means movable with respect to the top of said device and having a plurality of spaced members overlying the side wall thereof for selectively covering and exposing the apertures in said side wall, the means for detachably supporting a container of volatilizable material comprising an inwardly extending shoulder on said side wall having means for engaging a container and supporting the same within said base part.

12. In combination with an article supporting

base of substantially hollow construction having article supporting means at the upper portion thereof, means for detachably mounting a volatilizable material therein and a plurality of apertures in side walls thereof for passage of air and volatilizable material therethrough, a control member mounted on said base for rotary movement independently of the article supporting means of said base said control member having a plurality of protruding tabs forming cut-out portions circumferentially thereof, and said protruding tabs and cut-out portions being adapted to overlie the apertures in said base for effecting selectively a closure and a controlled exposure of said apertures.

13. In combination with an article supporting base of substantially hollow construction having article supporting means at the upper portion thereof, means for detachably mounting a volatilizable material therein and a plurality of apertures in side walls thereof for passage of air and volatilizable material therethrough, a control member mounted on said base for rotary movement independently of the article supporting means of said base, said control member having a plurality of protruding tabs forming cut-out portions circumferentially thereof, said protruding and cut-out portions being adapted to overlie the apertures in said base for effecting selectively a closure and a controlled exposure of said apertures, said control members being fashioned of resilient material, and the extremities of said protruding tabs being adapted for snap engagement with undercut portions of said base in detachably mounting said control member on said base.

14. In combination with an article supporting base of substantially hollow construction having article supporting means at the upper portion thereof, means for detachably mounting a volatilizable material therein and a plurality of apertures in side walls thereof for passage of air and volatilizable material therethrough, a control member mounted on said base for rotary movement independently of the article supporting means of said base said control member having a plurality of protruding tabs forming cut-out portions circumferentially thereof, said protruding tabs and cut-out portions being adapted to overlie the apertures in said base for effecting selectively a closure and a controlled exposure of said apertures, said control members being fashioned of resilient material, the extremities of said protruding tabs being adapted for snap engagement with undercut portions of said base in detachably mounting said control member on said base, and said control member including a peripheral band portion overlying the upper surface of said base in spaced relation to the article supporting means thereof and said band portion having spaced apertures adapted to register with correspondingly spaced apertures in the upper surface of said base.

GEORGE W. MEEK.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,732,028	Reiner	Oct. 15, 1929
2,038,071	Wilhelm	Apr. 21, 1936
2,247,600	Brennan et al.	July 1, 1941
2,383,960	Dupuy	Sept. 4, 1945