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W. H. WHEELER
CONTAINER DEVICES

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Fig. 1.

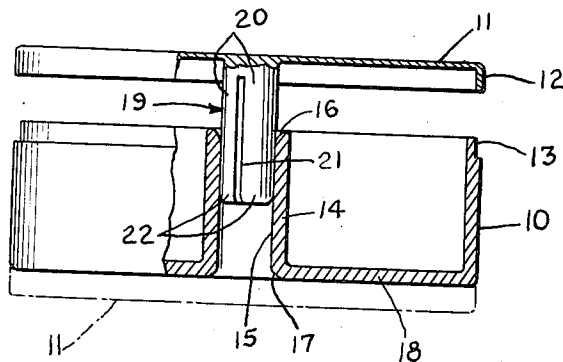


Fig. 2.

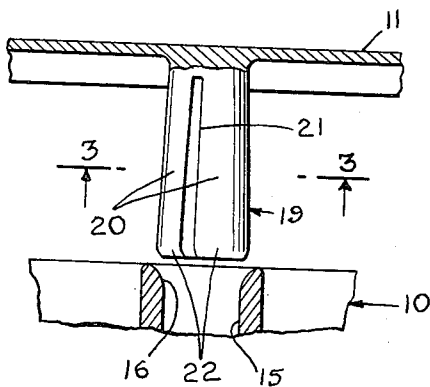


Fig. 3.

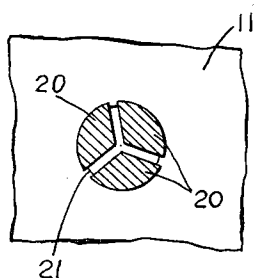


Fig. 4.

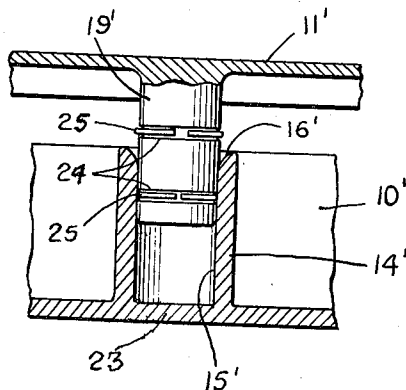
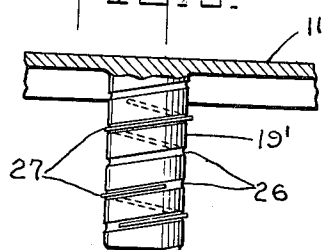


Fig. 5.



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CONTAINER DEVICES

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2 Claims. (Cl. 220—42)

This invention relates to container devices having adjustably displaceable closure means associated therewith. More particularly the invention relates to container devices of the character described adapted for use as storage and dispensing containers for volatile materials, wherein the adjustably displaceable closure means provides a control for the rate of emission of volatile materials from said container.

In the packaging of various materials of a volatile nature as for example materials for the freshening, deodorizing or similar treatment of air, it is frequently difficult to provide means for controlling in an effective way the rate of volatilization or evaporation of air treating agents.

An object of the present invention is to provide a simple and practical device which can be economically produced, in which the closure means for a container can be adjustably supported in different positions with respect to said container to provide complete closure, partial opening or complete opening of the container in controlling the emission or evaporation of volatilizable material therefrom.

Regarded in certain of its broader aspects my improved container device comprises a container part of relatively flat and circular contour, having at the axis thereof a hub portion providing a socket therein, a closure member for said container having a central stem portion insertable in said socket, and resilient means providing sliding frictional engagement between said socket and the stem of said closure means.

The novel features of my new container device will readily be apparent from a consideration of the following description taken together with the accompanying drawing showing certain adaptations thereof, wherein the various parts of the device are identified by suitable reference characters in each of the views and wherein:

Fig. 1 is an elevation view, partially in section, showing one form of my device with the closure means, and with the container and closure means in partially extended position;

Fig. 2 is an enlarged fragmentary view, similar to Fig. 1, showing the relationship of the parts when detached;

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

Fig. 4 is a fragmentary view, similar to Fig. 1, showing a modified form of construction; and

Fig. 5 is a fragmentary view of a closure part similar to that shown in Fig. 4 but indicating a further modification.

In Figs. 1 to 3 of the drawing I have shown one form of container in accordance with my invention as comprising a container part 10 and a closure or lid part 11 having a peripheral flange 12 adapted to closely engage a suitably recessed portion 13 at the upper periphery of the container 10. The engagement between flange 12 and recessed portion 13 may be a simple telescoping or sliding engagement or, if desired, the parts may be provided with conventional screw threads or other securing means to provide a positive locking engagement between the lid 11 and the container 10.

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The container 10 is provided centrally thereof with a hub 14 forming an aperture or socket 15 which may extend through the container 10 from top to bottom, as shown in Fig. 1, or may terminate in a bottom wall as shown in Fig. 4. The socket 15 is of cylindrical contour throughout the greater portion of its length, having outwardly flared surfaces 16 at the upper end thereof and similarly flared surfaces 17 at the lower end thereof where the hub 14 joins the bottom wall 18 of the container.

The cover or lid 11 is provided with a downwardly extending stem 19 centrally thereof and adapted for engagement with the socket 15 through the hub 14. The stem 19 is made up of a plurality of arcuate members 20 having an external contour closely conforming to the internal contour of the socket 15. The members 20 are normally flexed slightly outwardly, as indicated in Fig. 2 (the showing being somewhat exaggerated in this regard) to provide a spring tension in the members 20 which is sufficient to support the cap 11 in different positions of adjustment vertically with respect to the hub 14. In the drawing the spacing 21 between the members 20 has been somewhat exaggerated for the sake of clarity, and it will be apparent that this spacing need only be sufficient to provide clearance between the members 20 when they are arranged in the position as shown in Fig. 1 of the drawing.

The lower ends 22 of the resilient members 20 are preferably rounded slightly to ride freely over the surfaces 16 of the hub 14, as will be apparent from a consideration of Fig. 2 of the drawing. In this connection it will be noted that when the socket 15 extends through the container, the stem 19 can also be inserted through the bottom of the container 10 in the position shown in the dot and dash lines in Fig. 1 of the drawing, thus providing a convenient means for storing the lid 11 when it is desired to have the container completely open. The rounded surfaces 17 here again facilitate insertion of the stem 19 by cooperative engagement with the rounded ends 22 on the resilient members 21. It is within the scope of my invention to provide sufficient tension in the resilient members 20 so that when the stem 19 is partially inserted through the bottom of the container into the passage 15, the cover can provide an elevated stand for the fully opened container.

The operations of removing, mounting or vertically adjusting the cover 11 on the container 10 can be effected in a vertically sliding motion, or more advantageously in a combination of a vertically sliding and rotary motion. It will be apparent in this connection that the vertical adjustment of the cover 11 with respect to the container 10 provides a highly practical means for controlling circulation of air through the container and thus controlling the rate of evaporation of volatilizable material which may be arranged within the container.

In Fig. 4 of the drawing I have shown a fragmentary view of a modified form of construction comprising a container 10' having a hub 14' forming a socket 15' therein terminating in a bottom wall 23 which may be continuous with the bottom of the container 10'. The socket 15' is provided at the end thereof with rounded surfaces 16' facilitating the insertion of the stem 19' of a lid or cover 11'. In this modified form of construction the stem 19' is provided with one or more annular grooves 24 for receiving split rings 25 which act as spring elements providing resilient engagement between the stem 19' and inner walls of the socket 15'. Two of the grooves 24 and split rings 25 have been shown in the drawing merely to indicate the relative positions of the rings 25 when expanded and out of engagement with the socket 15' and when compressed by engagement with the socket 15'. Whether to use one, two or more of the rings 25 will depend upon a number of factors, such

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for example as the size of the container, the weight of the contents, the weight of the lid or cover 11' and the like. It is considered, however, that in many applications of this form of construction a single ring 25 will be sufficient.

In Fig. 5 of the drawing I have shown a further modification of the closure and stem construction as shown in Fig. 4 wherein the stem 19' of the closure or lid 11' is provided with a spirally arranged groove 26 for supporting one or more spirally curved springs 27. The springs 27, two being shown merely for purpose of illustration, are preferably of a length to extend about one and one-half times around the stem 19' and are compressible in a manner similar to the rings 25 shown in Fig. 4 when the stem 19' is inserted in the socket 15' of a container, thus providing resilient support for the closure 11' in different positions of vertical adjustment.

Container devices in accordance with my invention can be fashioned from any suitable materials, such as turned metal, molded plastics and the like. In this connection it will be noted that with the construction as shown in Figs. 4 and 5, the stem 19' can if desired comprise a hollow hub having a passage therethrough generally similar to the socket 15 extending through the hub 14. It will also be understood that with any form of stem construction the socket 15 or 15' can be either open and extending through the container as shown in Fig. 1, or provided with a bottom wall as shown in Fig. 4.

Various changes and modifications in the construction as herein disclosed may occur to those skilled in the art and to the extent that such changes and modifications are embraced by the appended claims it is to be understood that they constitute part of my invention.

I claim:

1. A container device comprising a container part of relatively flat and circular contour having at the axis thereof a hub portion providing a socket therein, said socket extending substantially the full depth of said container and having uniform cylindrical inner surfaces, a disc-shaped cover for said container having a central

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stem portion insertable in said socket and extending to substantially the depth thereof, interfitted peripheral means on said receptacle and cover for closure of said container in the lowermost position of said cover, said stem portion being of an essentially solid cylindrical form but having three radial grooves extending throughout substantially the full length of said stem, said grooves meeting at the center of said stem and extending through the free end thereof to divide said stem into three resilient members, said resilient members being normally flexed outwardly at the free end of said stem imparting thereto a diameter somewhat greater than the inner diameter of said socket, and said resilient members being contractable upon insertion in said socket to provide uniform frictional engagement with the inner walls of said socket providing adjustable support of said cover in different positions of elevation with respect to said container part within limits defined substantially by the length of said stem.

2. A container device as defined in claim 1 wherein said socket is in the form of a bore extending completely through said container part, and inner surfaces of said bore being flared outwardly at the ends thereof for co-operation with a peripheral beveled portion at the free end of said stem to facilitate contracting of said resilient members in the selective insertion of said stem into said bore from above and below said container part.

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