

[54] **LIQUID DISPENSER FOR REFUSE RECEPTACLE**

[76] Inventor: **Sergio Almanza**, 28 Quimera St.,
Munoz Rivera, Guayanabo, P.R.
00657

[22] Filed: **Oct. 16, 1972**

[21] Appl. No.: **297,820**

[52] U.S. Cl. **220/87, 222/187**

[51] Int. Cl. **B65d 25/28**

[58] Field of Search 222/187; 220/87; 312/31.1,
312/55, 384, 387; 239/53, 54, 55, 56, 57

[56] **References Cited**

UNITED STATES PATENTS

1,223,760	4/1917	Brown.....	220/87
1,886,630	11/1932	Bourdette	220/87
2,425,612	8/1947	Gamber	220/87
2,802,590	8/1957	Topper	220/87 X

Primary Examiner—Stanley H. Tollberg
Assistant Examiner—Larry H. Martin
Attorney, Agent, or Firm—LeBlanc & Shur

[57] **ABSTRACT**

The dispenser is adapted to be secured to or form an integral part of a cover for a refuse receptacle and includes a body having inner and outer walls spaced one from the other and defining a substantially annular chamber therebetween for receiving a chemical agent. The inner walls define a central opening and have a shorter vertical extent than the outer walls whereby the upper edges of the inner walls are spaced below the upper edges of the outer walls. In one form, the body is integral with the receptacle cover with the latter closing the upper end thereof. In another form, a separate cover is provided the body and has a flange which extends outwardly from the outer wall whereby the dispenser can be secured, for example by nuts and bolts, to the underside of the receptacle cover. An absorbent material is disposed within the dispenser and overlies the upper edges of the inner walls to extend across the central opening and into the annular chamber whereby the chemical agent in the annular chamber is absorbed thereby and distributed to the contents of the receptacle through the central opening.

2 Claims, 4 Drawing Figures

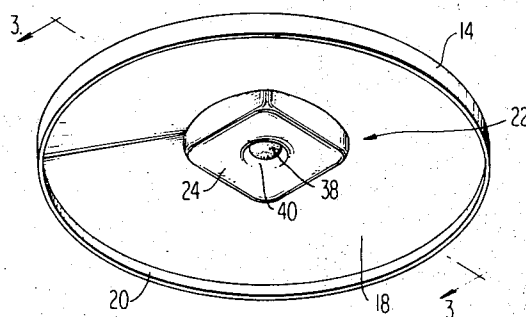


FIG. 1

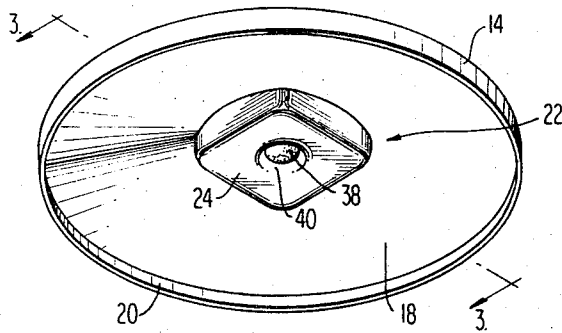


FIG. 2

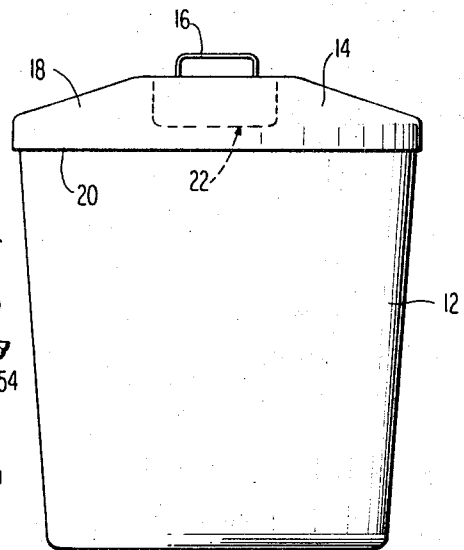


FIG.4

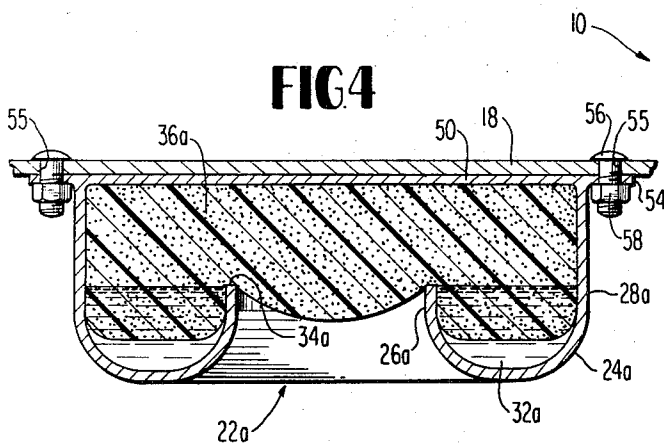
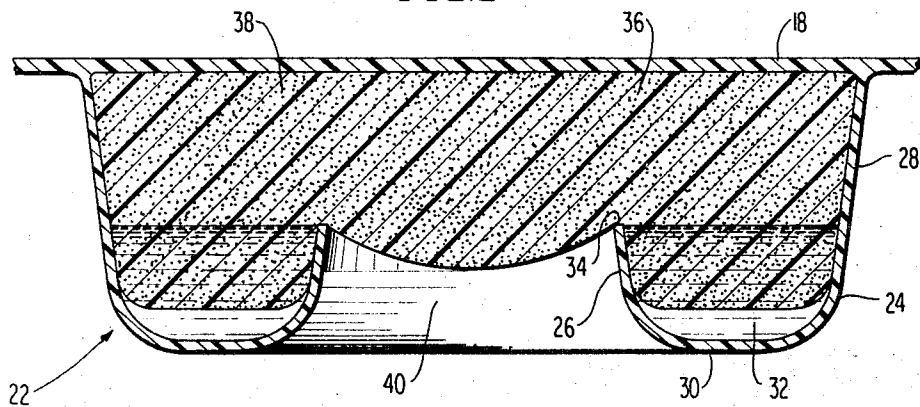


FIG.3



LIQUID DISPENSER FOR REFUSE RECEPTACLE

The present invention relates to a device for dispensing a chemical agent into a refuse receptacle and particularly relates to a novel and improved dispenser for dispensing a chemical agent such as a disinfectant, deodorizer, or insecticide or repellant or combinations thereof into a refuse receptacle and which dispenser is configured as part of or adapted for connection to the cover of a refuse receptacle.

A large number of devices for dispensing a chemical agent into a refuse receptacle for the purpose of disinfecting, deodorizing, and/or destroying or repelling insects have been proposed and constructed in the past. One such dispensing device is disclosed in U.S. Pat. No. 1,223,760 wherein a substantially annular container having a central opening is secured on the underside of the lid of a refuse receptacle. The container defines an annular reservoir for containing disinfectant. The fumes from the disinfectant flow downwardly from the lid into the receptacle through the central opening in the dispensing device. One disadvantage of this type of disinfectant dispenser for refuse receptacles is its inability to prevent the disinfectant from spilling or flowing from the dispenser upon movement of the receptacle or for example lifting the cover from the receptacle and canting the same. That is, the disinfectant will tend to drain through the central opening upon movement of the cover from its normal horizontal position. Further, this dispenser does not effectively distribute the disinfectant as it is not directly exposed to the contents of the receptacle.

Another dispenser for a like purpose is disclosed in U.S. Pat. No. 1,682,491. In that patent, sheet metal is bent to form a dome having upstanding peripheral sides. The dome and sides thereof are perforated and the space between the cover and the dome defines an annular chamber in which is placed an absorbent material and a disinfectant. This dispenser is secured to the underside of a garbage can cover. However, by perforating the sides and the dome of this dispenser, the disinfectant is readily drawn off requiring the container to be filled at frequent intervals. Other dispensers similar to the foregoing for like purposes are disclosed in U.S. Pat. Nos. 1,490,314; 999,912; 2,571,428; and 2,531,084. The devices disclosed in these patents, however, have similar disadvantages as the devices of the above specifically noted patents as well as other and various disadvantages.

The present invention provides a dispenser for distributing a chemical agent into a refuse receptacle which minimizes and/or eliminates the foregoing and other problems associated with prior dispensers for refuse receptacles and provides a novel and improved dispenser for distributing a chemical agent into refuse receptacles having various advantages in construction, mode of application and use as compared with such prior dispensers. As used herein, the term "chemical agent" means a disinfectant, a deodorizer or an insecticide or repellant or various combinations thereof. It will be appreciated that a prime consideration in the provision of a dispenser for refuse receptacles is the capability of the dispenser to distribute the chemical agent into the contents of the receptacle over a long period of time without refilling, ergo without being spilled upon movement of the receptacle and/or cover, while simultaneously occupying substantially none of the

space of the receptacle normally reserved for the refuse. Further criteria include the desirability of providing an inexpensive dispenser, a dispenser which can be readily adapted to existing refuse receptacles, and a dispenser which can be readily filled with the chemical agent when the dispenser's reservoir is substantially empty. To these and other ends, the present invention provides a dispenser for distributing a chemical agent into a refuse receptacle comprising a housing having inner and outer walls defining a substantially annular chamber therebetween. The inner walls define a central opening through the housing, the upper edges of the inner walls being spaced below the upper edges of the outer walls. In one form hereof, the housing is formed integrally with the receptacle cover with such cover forming the upper wall of the dispenser. Alternatively, a separate cover is provided to which the housing is suitably secured, the separate cover having flanges whereby the entire housing can be secured to the underside of an existing receptacle cover by screws, epoxy or the like. In either form, the upper edges of the inner walls are spaced below the cover for the annular chamber, i.e., either the refuse receptacle cover per se or the housing cover. An absorbent material is disposed within the housing and overlies the upper edges of the inner walls to extend across the central opening and into the annular chamber. Particularly, this absorbent material preferably comprises a sponge which is compressed within the housing whereby portions of the sponge extend downwardly into the annular reservoir between the inner and outer walls.

In use, the receptacle cover is removed from the receptacle and inverted whereby the chemical agent can be poured through the central opening onto the absorbent material. Upon placement of the cover on the receptacle, the chemical agent collects in the annular reservoir defined between the inner and outer walls and provides a long lasting supply of the chemical agent which travels through the absorbent material by a wicking or capillary action to the central opening whereupon the disinfectant is distributed to the contents of the receptacle. It will be appreciated that the absorbent material also prevents the chemical agent from spilling or freely flowing through the central opening when the cover is inclined from a horizontal position. Also, it precludes the inadvertent spillage of the chemical agent into the receptacle upon movement thereof with the cover attached. Furthermore, the absorbent material provides a steady rate of flow of the chemical agent into the refuse receptacle. By providing such measured quantity the dispenser need only be refilled with the chemical agent over extended periodic intervals of time.

Accordingly, it is a primary object of the present invention to provide a novel and improved dispenser for distributing a chemical agent such as a disinfectant, deodorizer, or an insecticide or repellant or combinations thereof into refuse receptacles.

It is another object of the present invention to provide a novel and improved dispenser for distributing such chemical agent into refuse receptacles which is carried by the receptacle cover in a manner whereby spillage of the chemical agent upon movement of the receptacle and/or the cover therefor is entirely eliminated.

It is still another object of the present invention to provide a novel and improved dispenser for distributing

such chemical agent into refuse receptacles wherein the rate of distribution of the disinfectant is controlled such that the dispenser reservoir need only be filled at infrequent periodic intervals.

It is a further object of the present invention to provide a novel and improved dispenser for distributing such chemical agent into refuse receptacles wherein the dispenser is readily applied to existing refuse receptacles and wherein the dispenser occupies none of the space usable for containing refuse.

It is a still further object of the present invention to provide a novel and improved dispenser for distributing such chemical agent into refuse receptacles which is readily and easily fabricated and inexpensively formed of readily available materials.

These and other objects and advantages of the present invention will become more apparent upon reference to following specification, appended claims and drawings wherein:

FIG. 1 is a perspective view of a refuse receptacle cover illustrating the dispenser hereof as applied to the underside of the cover;

FIG. 2 is a side elevational view of a refuse receptacle with its cover applied;

FIG. 3 is an enlarged vertical cross-sectional view of the dispenser hereof taken about on lines 3—3 in FIG. 1; and

FIG. 4 is a view similar to FIG. 3 on a reduced scale and illustrating a further embodiment of a dispenser hereof.

Referring now to the drawings, particularly to FIGS. 1 and 2, there is illustrated a refuse receptacle generally indicated 10 comprised of a bottom can 12 and a cover 14 therefor, the cover 14 having a handle 16. The cover includes an upper wall 18 terminating in a depending skirt 20 for closure about the upper margins of the can 12. The receptacle 10 and cover 14 may be formed of any suitable material, for example, sheet metal although in the illustrated embodiment, receptacle 10 and cover 14 are formed of a plastic material. The refuse receptacle 10 including its cover is in all respects of conventional construction except for the dispenser applied thereto which is generally indicated at 22.

Referring now to FIG. 3, dispenser 22 is illustrated as forming an integral part of the cover 14 and comprises a housing 24 having inner and outer walls 26 and 28, respectively. As illustrated in FIG. 1, the outer walls 28 form four discrete sides for housing 24 and are arranged in the form of a substantial square although the walls 28 are slightly arcuate from end to end. The inner walls 26 are annular and it will be appreciated that the inner and outer walls 26 and 28, respectively, together with the bottom wall 30 which joins the lower portions of inner and outer walls 26 and 28 form substantially annular chamber 32. The chamber 32 defines a reservoir for containing chemical agent. In the form of dispenser illustrated in FIG. 3, the upper edges of the outer walls 28 are integrally connected with the top wall 18 of cover 14. The upper edges 34 of inner walls 26, however, are spaced from wall 18 whereby a second chamber 36 in communication with annular chamber 32 is formed above the upper edges 34 of inner walls 26. Inner walls 26 also define a central aperture 40 opening through the bottom of housing 34 for reasons to be discussed.

Disposed in chamber 36 and partially within annular chamber 32 is an absorbent material 38 preferably an open cellular sponge. Sponge 38 is located within housing 24 substantially above the inner walls 34 although the sponge is also compressed to extend within the annular chamber 32. Particularly, the sponge is first formed to the general outline of the outer walls 28 and then inserted within housing 24 whereby margins of the sponge 38 expand to overlie and partially engage in annular chamber 32. Thus, sponge 38 fills chamber 36 and partially occupies annular chamber 32 leaving a small space at the bottom of annular chamber 32 for holding the chemical agent. It will be appreciated that sponge 38 extends across central opening 40 and substantially seals the chamber 32 from opening 40.

To use the dispenser hereof, the refuse cover 14 is removed from the can 12 and inverted. A chemical agent, for example a disinfectant, deodorizer or insecticide or repellant or various combinations thereof, is then poured onto the portion of the sponge 38 exposed through the central opening 40. The sponge, of course, can be pushed back away through the upper edges 34 of inner walls 26 to facilitate entry of the chemical agent into housing 24. When sponge 38 is sufficiently saturated, the cover 14 is again inverted and replaced on the can 12. It will be appreciated that the chemical agent thus collects in the annular chamber 32 whereby such chamber forms a reservoir for storing the chemical agent over a period of time. When the dispenser is horizontally disposed as illustrated, the sponge absorbs the chemical agent from the reservoir 32 by a wicking or capillary action, the chemical agent flows to the sponge portion located above opening 40 for distribution into the can 12. Thus the chemical agent is held in the dispenser for distribution within the receptacle over a predetermined time interval determined by the size of the reservoir and the rate of wicking action. Further, by locating the sponge above reservoir 32, the sponge serves as an absorbent keeping the liquid chemical agent from spilling from the dispenser through opening 40 upon movement of the can 12 and/or cover 14. Thus even if cover 14 is removed from the can and inclined from the horizontal, the sponge 38 serves to contain the liquid chemical agent within the dispenser.

Referring now to FIG. 4, there is illustrated a further embodiment of dispenser 22a hereof comprised of a housing 24a having inner and outer walls 26a and 28a defining an annular chamber 32a therebetween, and an upper wall 50 joined to the upper edges of outer wall 28a. The wall 50 is, however, spaced from the upper edges 34a of inner wall 26a whereby a chamber 36a is defined above substantially annular chamber 32a. This integral one-piece unit may be formed of plastic or fiberglass or any other suitable material and is particularly adapted for connection with existing receptacle covers 14. To adapt this dispenser for attachment to existing covers, the upper wall 50 has a peripheral flange 54 which has suitable openings 55 spaced thereabout for receiving screws 56 extending through the upper wall 18 of cover 14. Suitable nuts 58 are provided on the ends of screws 56 whereby dispenser 22a is releasably secured to the cover 14. It will be appreciated that other types of securement to a receptacle cover can be provided, for example, dispenser 22a can be glued with a suitable epoxy to the underside of cover 14. The dispenser 22a is, of course, used similarly as previously de-

scribed with respect to the dispenser 22 illustrated in FIGS. 1-3.

An illustrative example of a dispenser suitable for use with a conventional fifteen gallon refuse receptacle includes outer walls 24 spaced about 5½ inches apart with the inner walls having a diameter of about 2 inches. The depth of the dispenser from its top wall, either the cover of the refuse receptacle or the wall 50 illustrated in FIG. 4, is preferably about 1¾ inches with the upper edges 34 of the inner walls being spaced about 1 inch from the upper wall. It has been found that a sponge having the lateral dimensions of the outer walls 24 and a depth dimension about one-fourth inch short of the total depth of the dispenser provides for effective distribution of the chemical agent into the receptacle. Further, when the sponge 38 is within the chambers 36 and 32 as illustrated, it has been found that the chemical agent remains effective for about 14 to 15 days.

It will be appreciated from the foregoing that the objects of the present invention are fully accomplished in that there has been provided a dispenser for refuse receptacles specifically constructed to provide a predetermined rate of flow of chemical agent into the refuse receptacle. Also, the particular annular construction of the dispenser and the provision of an absorbent material disposed in the dispenser and across its central opening prevents the liquid from spilling or otherwise flowing out of the dispenser upon movement of the cover from its normal horizontal position. Also, the dispenser may be formed of inexpensive materials, i.e., plastic, fiberglass, sheet metal or the like, can be readily fabricated and is particularly adapted for use either as an integral part of new receptacle covers or as an attachment to existing covers.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. A dispenser for use with a refuse receptacle comprising: a housing including upstanding inner and outer walls defining a generally annular chamber therebetween for receiving a chemical agent, said inner wall defining a central generally circular opening through the under side of said housing, the upper edge of said inner wall being spaced below the upper edge of said outer wall, a receptacle cover, a portion of said cover and flush therewith forming an upper wall for said housing whereby said upper wall overlies said chamber and lies in spaced relation above the upper edge of said inner wall, said dispenser depending from the under-

side of said refuse receptacle cover and at a location substantially centrally of said cover, and an open cellular absorbent sponge disposed within said housing and overlying said chamber and said inner wall, said sponge occupying a space bounded by said upper wall and said outer wall and engaging the upper edge of said inner wall and extending across said central opening to fully close the same, said sponge being compressed within said housing by said inner wall such that portions of said sponge respectively extend into said chamber below the upper edge of said inner wall in contact with the chemical agent therein and also project through said central opening below the upper edge of said inner wall, at least portions of said sponge when compressed lying at an elevation below the upper edge of said inner wall and following the contour of the surface of one of said inner and outer walls, whereby the chemical agent in the annular chamber flows by a wicking action to the portion of said sponge above said central opening for distribution into the receptacle.

2. A dispenser for attachment to the underside of the cover of a refuse receptacle comprising: a housing including upstanding inner and outer walls defining a generally annular chamber therebetween for receiving a chemical agent, said inner wall defining a central generally circular opening through its underside of said housing, the upper side of said inner wall being spaced below the upper edge of said outer wall, means forming a cover for said housing, whereby said cover overlies said chamber and lies in spaced relation above the upper edge of said inner wall, means for securing said dispenser to the under side of the refuse receptacle cover at a location substantially centrally of the refuse receptacle cover, said securing means including a flange carried by said dispenser and extending laterally outwardly of said housing, and nuts and bolts for securing said flange to the receptacle cover, and an open cellular absorbent sponge disposed within said housing and overlying said chamber and said inner wall, said sponge occupying the space bounded by said cover means and said outer wall and engaging the upper edge of said inner wall and extending across said central opening to fully close the same, said sponge being compressed within said housing by said inner wall such that portions of said sponge respectively extend into said chamber below the upper edge of said inner wall in contact with the chemical agent therein and also project through said central opening below the upper edge of said inner wall, at least portions of said sponge when compressed lying at an elevation below the upper edge of said inner wall and following the contour of the surface of one of said inner and outer walls, whereby the chemical agent in the annular chamber flows by a wicking action to the portion of the absorbent material above said central opening for distribution into the receptacle.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,840,145

Dated October 8, 1974

Inventor(s) Sergio Almanza

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3, line 58, "chemical" should read --a chemical--.

Column 4, line 25, "when" should read --When--.

Column 6, line 26, Claim 2, "its" should read --the--.

Signed and sealed this 31st day of December 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents