Dec. 11, 1962 M. L. ALLISON 3,067,913

MAT DISPENSER OR THE LIKE

Filed April 20, 1960

Fig. 1.

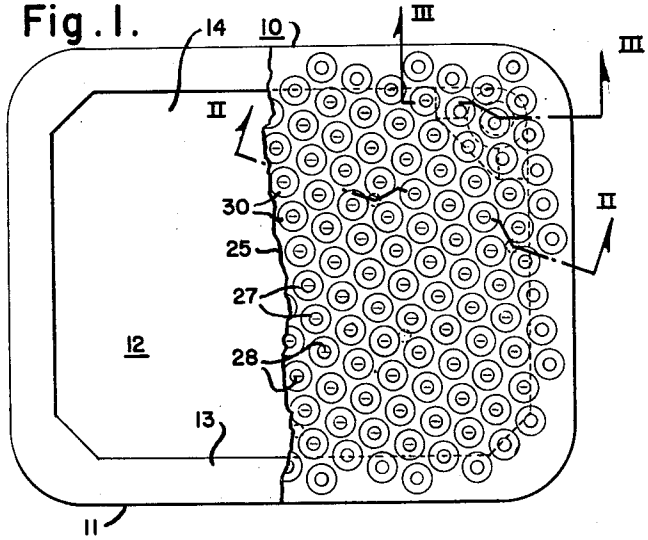


Fig. 4.

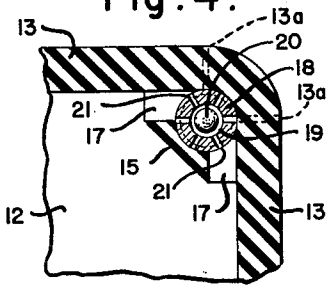


Fig. 2.

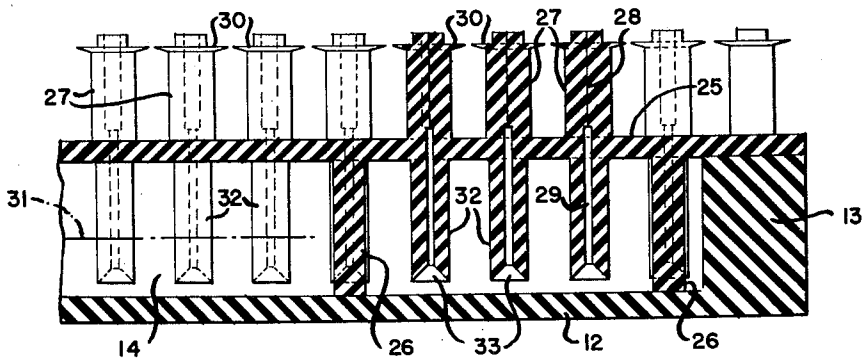
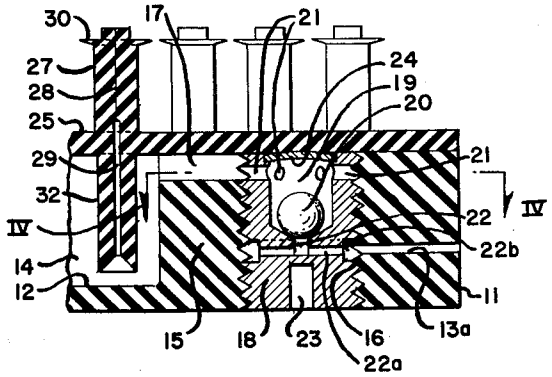


Fig. 3.



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3,067,913
MAT DISPENSER OR THE LIKE

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5 Claims. (Cl. 222—211)

This invention relates to a dispenser in the form of a mat for a germicide, or other treating material. More particularly, this invention pertains to such a dispenser in which the cover preferably is molded of elastomer or other flexible substance material and in which the material to be dispensed is wholly enclosed and selectively dispensed.

In prior applicators used in various fields for disinfecting, hygiene, or other purposes, many shortcomings have existed. Thus, the apparatus used often was complicated or costly to assemble and build. Further, the liquid used was commonly exposed to evaporation, or contamination, or both. In other cases, the material being dispensed was delivered in excessive quantity.

By means of my invention, the foregoing deficiencies have been overcome. Articles made pursuant to my teaching can be molded at relatively low cost in a mass production operation. They completely enclose the treating liquid or other substance to be dispensed and distribute the same when called upon to do so, in appropriate quantity without waste. Moreover, devices of my invention are enclosed to prevent contamination or entry of dirt, and, at the same time, return to their original shape after use. That is to say, they avoid spilling and at the same time dispense sparingly, keep out foreign matter and permit replacement air to enter. They may also readily be filled, or emptied and flushed clean.

Other objects, features and advantages of my invention will be apparent from the following decription and the accompanying drawings, which are illustrative of one embodiment only, in which

FIGURE 1 is a plan view of one embodiment of this invention, with a portion of the cover removed for purposes of description;

FIGURE 2 is a view in section taken along line II—II of FIGURE 1;

FIGURE 3 is a view taken along line III—III of FIGURE 1; and

FIGURE 4 is a view in section taken along line IV—IV of FIGURE 3.

Referring to the drawings, dispenser **10** comprises a base or tray **11** having a bottom **12** and upstanding continuous peripheral walls **13** around the edge of said bottom to provide a space **14** for a liquid such as a germicide, disinfectant, soap, or other substance to be dispensed. As shown, tray **11** may be molded of an elastomeric material such as rubber, which can be relatively hard, or the bottom may be made of fabric reinforced rubber with the walls vulcanized thereto. Preferably, the base and cover parts of the device **10** are separately molded for convenience and economy of some suitable elastomer or plastic.

A thickened corner portion **15** may be provided in tray **11** with a vertical, internally threaded bore **16** therein communicating at the top thereof with space **14** by means of angular channels **17**. A check valve comprising a plug **18** having external threads to engage the threads of bore **16** fits sufficiently closely to keep liquid from passing through the interface between the mating threads. The check valve also includes a chamber **19** having a ball valve **20** therein and radial passages **21**, the bottom of the chamber **19** communicating with the outside of the base by means of a drilled opening **22**, a cross passage **22***a* and an annular recess **22***b*. The annular recess in turn is at all times in communication with the outside air by means of passages **13***a* extending through adjoining walls **13** in horizontal alignment with recess **22***b*. A kerf **23** will accommodate the tip of a screwdriver so that the check valve may be inserted in place. A Welsh closure **24** closes the top of chamber **19**. If desired, a light spring may extend between the underside of closure **24** and the top of ball **20** to retain the ball in the closed position shown in FIGURE 3 in the event the dispenser **10** is tipped, but the strength of any such spring will be insufficient to keep ball **20** from rising to admit air to space **14** after liquid has been drawn therefrom by a use of the dispenser **10**. It will also be noted that the passages **13***a* are high enough above bottom **12** to avoid or inhibit any drawing in of water in the event that dispenser **10** is not standing in a dry place. The passages **13***a* may be made in any suitable way and, if desired, may have filter cartridges inserted therein in the event, for example, the dispenser **10** is located in a dusty or dirty place which otherwise might enable air entering space **14** to draw in dirt, dust, floor sweepings, or soil material.

The space **14** in base **11** is wholly enclosed by a molded cover **25** made of suitable elastic material joined to the top edge of walls **13** by a liquid-tight bond brought about by vulcanization, or the use of a suitable adhesive. For additional strength, vertical rivets may be put through the cover edges and walls **13** at least at the corners of dispenser **10**. Cover **25** normally is maintained in the position shown in FIGURE 2, ready for use, by a plurality of spaced resilient posts **26** extending between the underside of the cover and bottom **12**. Such posts, as shown, are an integral part of the cover, although they may, instead, be a molded integral part of bottom **12**. The upper part of cover **25** comprises a plurality of closely spaced vertically extending bosses **27** substantially covering the whole of the cover. The bosses **27** are of uniform height with the tops defining a horizontal surface plane on which the part of the body or object to be treated comes down to effect a dispensing operation.

Those bosses **27** which are not over the walls **13** are provided with central capillary openings in the form of self-closing slits **28** extending centrally therethrough and continued below by a central channel **29** which is always open. The tops of the bosses **27** may be provided with ring collars **30** because of the resilient nature of the moldable material used to make the cover **25**, but such collars **30** may be omitted if desired because of the molding process, material used, or other reason. Preferably, the bosses **27** have enough width for lateral stability to retain a generally upright condition during use, such use vertically compressing the bosses **27** engaged causing the passages **28** to discharge a suitable quantity of liquid from space **14**, the level of which liquid may be as shown at **31**. The channels **29** extend axially through tubular downward extensions **32** the lower ends of which terminate slightly above bottom **12** in the form of a hollow conical portion **33** forming a downward flare for the bottom of the respective channel **29**. The extensions **32** preferably are also molded as an integral portion of cover **25**.

Hence, when the device is used as by someone stepping on the bosses **27**, those bosses beneath and adjacent to his foot and, the tubular extensions **32** therebeneath will move downwardly generally as the posts **26** are compressed until the bottoms of the extensions **32** engage the bottom **12** of the dispenser. Thereby, liquid will be trapped in the cones **33** and the lower portions of channels **29** and forced up through the respective channels **29** in those extensions and the corresponding slits **28** opened by such pressure, causing the desired moistening of the compressed foot, or shoe as the case may be, generally without operating the other bosses not stepped on, or wasting treating material. When the user removes his foot, the cover **25** and extensions **32** return to normal position shown in FIGURE 2, and slits **28** will close so

that no dirt or other contaminant can enter the reservoir space **14**. In the course of such restoration to normal position of cover **25**, the ball **20** will rise sufficiently to allow air to pass through the passages **17** into the space **14** above the liquid to make up for the quantity lost. As and when the liquid in the tray is exhausted, plug **18** can be removed and fresh liquid poured through the bore **16** and passages **17** into space **14** to the desired extent after which the check valve plug **18** is replaced and dispenser **10** is set down with its right side up. The depth of liquid preferably will be kept below the bottom of passage **17**.

Although the embodiment illustrated has been described in its usage as a floor mat, it will be understood that such devices may be used on a shelf, table or counter for the disinfecting of hands, or of objects, while functioning in the manner described. Moreover, while the treating material has been referred to as a liquid, the device will also operate on fluent powders of sufficient fineness, or on gases released by substances placed in the reservoir space **14** when the dispenser is made sufficiently gas-tight, such gases being released when the bosses are depressed. Additionally, various changes may be made in details of the illustrated embodiment and various other embodiments provided without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. A mat dispenser or the like comprising, in combination, a molded tray having generally upstanding peripheral walls, a flexible molded dispenser cover for said tray having edges bonded to the top of said peripheral walls to define a reservoir space for a treating liquid within said tray below said cover, a plurality of resilient posts spaced from each other and extending between the underside of said cover and the bottom of said tray to urge said cover vertically into normal spatial relationship to the bottom of said tray, a plurality of closely spaced dispenser bosses on said cover extending up to a uniform height to define a horizontal surface plane, said bosses having a central self-closing vertical slit therein, a plurality of tubular extensions from and below said cover in vertical registry with said bosses respectively, said tubular extensions having an always open central channel in alignment with a slit in the boss thereabove, the bottom of each of said channel opening into a conical flare at the bottom of its respective tubular extension, the bottoms of said tubular extensions being in a common horizontal plane adjacent but above the bottom of said tray.

2. A dispenser as set forth in claim 1 for liquid germicide or other treating liquid, having integral spaced collars adjacent the top of each of said bosses respectively, a check valve positioned adjacent one of said peripheral walls to admit air into said tray above said liquid and to prevent spilling of such liquid, said check valve being removable from a recess so that said tray may be refilled through said recess.

3. A mat dispenser or the like comprising, in combination, a base having general upstanding peripheral walls, a cover to close said base and enclose a space for a fluid-like treating material, a plurality of resilient posts spaced from each other and extending between the underside of said cover and the bottom of said base to urge said cover into normal spatial relationship to the bottom of said base, a plurality of closely spaced dispenser bosses on said cover, said bosses having a central self-closing capillary passage therein, a plurality of tubular extensions from and below said cover in vertical registry with said bosses respectively, said tubular extensions having an always open central channel in alignment with said passage in the boss thereabove, the bottom of each of said channels opening into a wider portion at the bottom of its respective tubular extension, the bottoms of said tubular extensions being adjacent but above the bottom of said base, means to vent air into said base, and means to refill said base with treating material.

4. A mat dispenser or the like comprising, in combination, a tray-like base generally open inside to contain substantially all of a supply of liquid substance to be dispensed, a liquid-proof cover for said base bonded thereto, a plurality of closely spaced dispenser bosses distributed over said cover, said bosses having a small axial passage for said substance, and passageway means extending below said cover in alignment with said passages of said bosses respectively to convey said substance to and through said passages when said cover is depressed, said passageway means terminating adjacent but above the bottom of said base, said bosses and passageway means being elastomeric, and further means to return said cover to normal undepressed position.

5. A mat dispenser or the like comprising, in combination, a relatively flat hollow base having a flexible upper surface and a generally open interior adapted to contain substantially all of a supply of liquid to be dispensed, a plurality of upstanding flexible tubular members adjacent to one another covering said upper surface and extending into said open interior of said base, passageways extending through said members respectively adapted to yield and discharge said liquid when a group of said members is depressed toward said base by forcing said liquid upwardly through said passageways to engage whatever is depressing said group, means to return said group to normal undepressed position, and further means to vent air into said open interior when said group is returned to said normal undepressed position.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,067,913 December 11, 1962

Matthew Leroy Allison

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 43, for "FIG-" read -- FIGURE --; column 2, line 60, strike out the comma; line 64, for "portions" read -- portion --; line 68, for "compressed" read -- compressing --; column 4, line 15, for "channels" read -- channel --.

Signed and sealed this 6th day of August 1963.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents