May 21, 1968 W. A. SHERBONDY 3,384,438

LIQUID WAX APPLICATOR

Filed Oct. 20, 1965 2 Sheets-Sheet 1

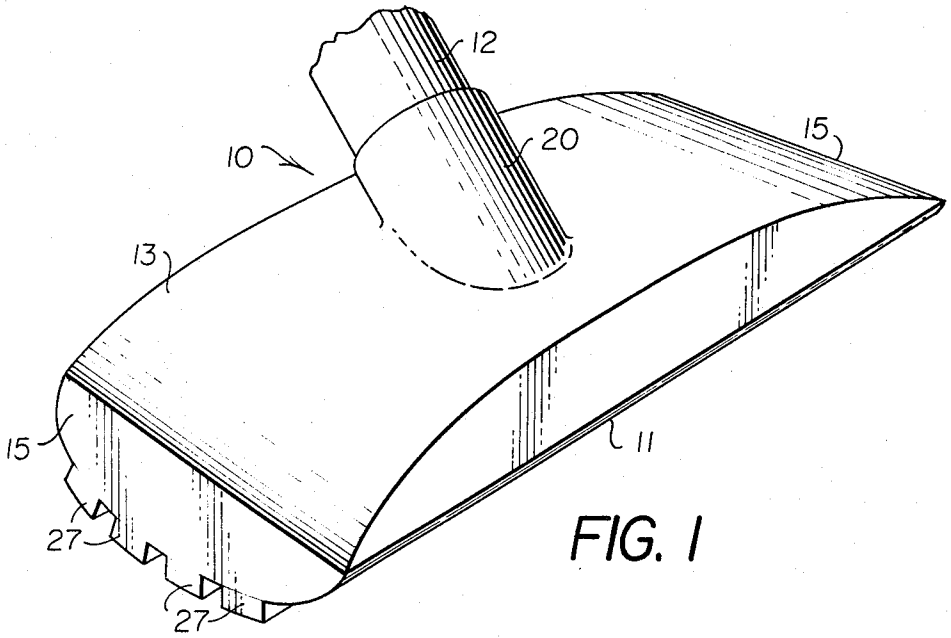


FIG. 1

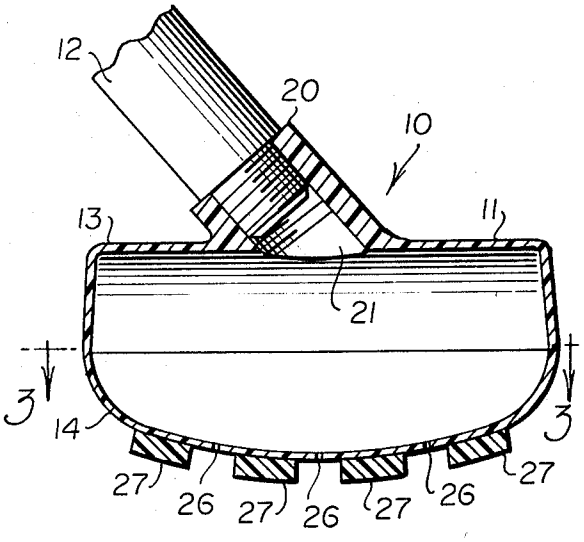


FIG. 2

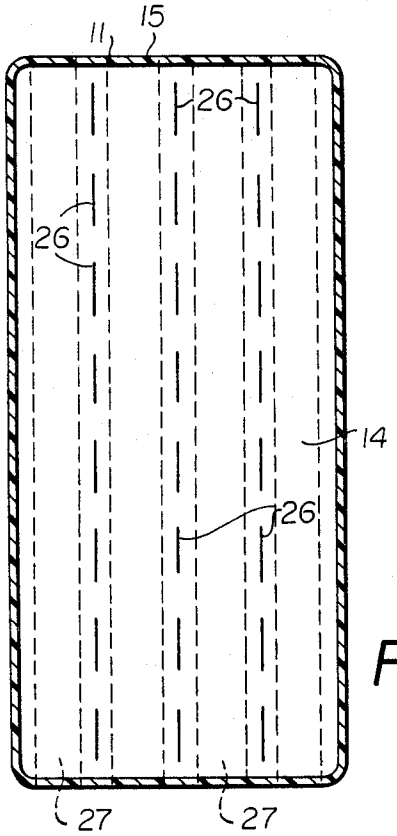


FIG. 3

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LIQUID WAX APPLICATOR

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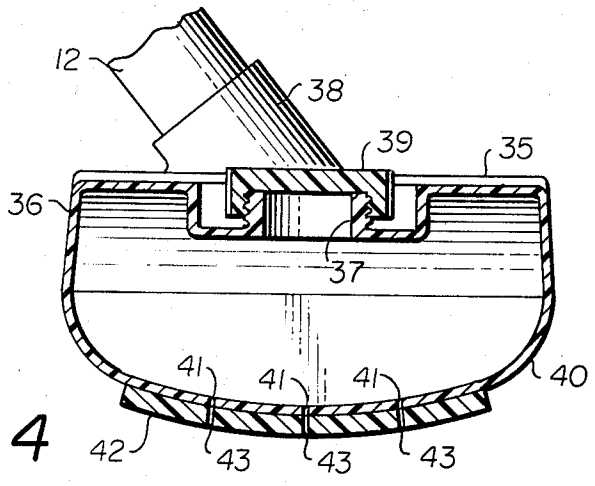


FIG. 4

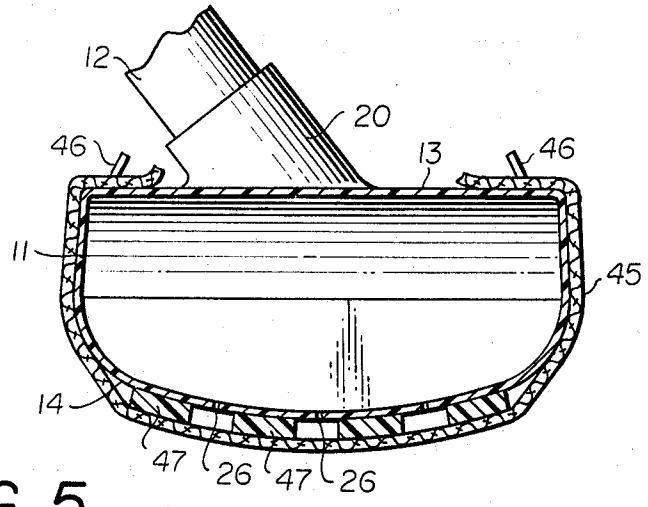


FIG. 5

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LIQUID WAX APPLICATOR

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10 Claims. (Cl. 401—139)

ABSTRACT OF THE DISCLOSURE

A liquid applicator device having a collapsible reservoir tank with slits in a flexible wall, the slits being openable by applying external pressure to the tank.

This invention relates generally to floor waxers, and more specifically to a new and improved valveless hand floor waxer having a collapsible reservoir tank.

An object of the invention is to provide a valveless hand floor waxer having a collapsible reservoir tank which is constructed to obtain even discharge flow and uniform application of the wax to the surface being covered.

Another object of the invention is to provide a valveless hand floor waxer having a collapsible reservoir tank which is adapted to serve as the original container in which the wax is sold.

A further object of the invention is to provide a valveless hand floor waxer as generally described in the previous paragraphs which has an integral handle socket and which may be provided with a filler opening that is defined by either the handle socket or by an optional filler spout.

A further object of the invention is to provide a valveless hand floor waxer including a collapsible reservoir tank which is constructed to controllably release a uniform flow of wax and which is provided with integral spreader structure for uniformly applying the wax.

Still another object of the invention is to provide a new and improved hand floor waxer having a valveless reservoir tank as generally described above and which is further characterized by a simplified, inexpensive construction.

The foregoing objects are attained by a new and improved construction comprising a combined reservoir and material dispensing tank having flexible, outwardly convex top and bottom walls. The handle is secured to the top wall of the tank. The bottom wall is provided with a plurality of self-closing fluid outlets in the form of thin, normally closed slits through which liquid wax can be controllably released onto the surface being covered. A separate applicator cloth attachment or the like is not required in the preferred embodiment. In use, the wax in the tank is dispensed directly onto the work surface by flexing the convex walls inwardly to open the normally closed slits. Spreaders for the wax are integrally united with the bottom wall between the rows of slits.

It has been found that the preferred construction of the reservoir tank of this invention achieves more even dispensing flow of the wax than could be obtained with prior art devices. Further, the tank construction is such that the flow can be easily controlled by foot or hand pressure applied to the tank by the user. Another important feature is that the spreaders cooperate in the new tank construction to obtain a more uniform coverage and application of the wax to the floor than has been possible in the past.

The invention contemplates that the reservoir tank may serve as the original container in which the wax is sold to the user. This feature provides for added convenience to the user, since it is possible merely to attach the operating handle to a new container reservoir tank and to discard the old one when the wax has been used up. Thus, the invention eliminates the inconvenience and necessity of refilling a wax reservoir.

It is also possible to refill the tank with wax, if this is desired. According to one embodiment, a filler opening is defined by the integral handle socket on the top wall of the tank. The handle serves as a plug for the opening and can be easily removed from the socket when it is necessary to introduce a new supply of wax. In another embodiment, the filler opening is defined by a separate, optional filler spout.

All of the above features are attained in a new waxer construction which can be inexpensively manufactured. As will be made more apparent, the collapsible, valveless reservoir tank, which may include the filler opening and the optional filler spout, can be simply molded as a one-piece plastic unit.

Still other objects and advantages of the invention will become apparent from the following detailed description when taken in conjunction with the accompanying drawings.

In the drawings:

FIGURE 1 is a perspective view of the preferred construction contemplated by the invention;

FIGURE 2 is a vertical cross-sectional view of the construction shown in FIG. 1;

FIGURE 3 is a cross-sectional view taken on the line 3—3 of FIG. 2;

FIGURE 4 is a vertical cross-sectional view of another embodiment of the invention; and,

FIGURE 5 is a vertical cross-sectional view of still another embodiment of the invention.

Referring now to the drawings, and to FIGS. 1, 2 and 3 in particular, the floor waxer constructed according to the preferred embodiment of the invention is indicated generally by reference numeral **10**. As shown, the waxer **10** includes a reservoir tank **11** and a connected handle **12**.

The tank **11** is an elongated vessel having flexible, outwardly convex top and bottom wall portions **13**, **14**, respectively. As shown, the upper or top wall portion **13** is cambered and curves downwardly toward the ends **15** of the tank to blend with the bottom wall portion **14**. Thus, the tank tapers from a zone of maximum cross-sectional height midway between its ends **15** to zones of minimum cross-sectional height at the end portions.

The tank **11** is made of a suitable synthetic plastic, such as polyethylene or the like. Preferably, the material is translucent so that the user can see the amount of wax remaining in the tank when the waxer has been used. The illustrated formation of the tank is such that it can be economically molded as a one-piece plastic unit by a simple blow molding operation.

A tubular handle socket **20** is formed integrally with the top wall portion **13** of the tank **11** between the ends **15**. In the embodiment of the invention illustrated in FIGS. 1, 2 and 3, the handle socket **20** defines an opening **21** into the tank so that it can be filled with liquid wax or the like. The socket **20** is formed with internal threads and an end of the handle **12** is threaded into the socket.

The flexible bottom wall portion **14** of the tank **11** is formed with a plurality of normally closed slits **26** which serve as self-sealing fluid outlets. The longitudinal slits **26** are arranged in spaced rows which extend between the end portions **15**. As shown most clearly in FIG. 3, three such rows are provided, although a greater or lesser number may be formed depending on the size of the tank, the craracteristics of the liquid, and the specific use for which the device is intended.

The liquid dispensed from the tank **11** through the slits **26** is applied by spreaders **27**. These spreaders **27** are preferably in the form of parallel strips which extend

along the opposite sides of each row of slits. The spreaders **27** are formed of a porous material, such as polyurethane foam, sponge rubber, or the like, and are suitably secured to the bottom wall **14**, as by pressure sensitive adhesive. In addition to applying the liquid wax, the spreaders serve to space the bottom wall portion **14** from the work surface so that a uniform flow of liquid is obtained from the slits when they are open.

The manner of using the waxer **10** is both simple and effective. Pressure is applied to the tank **11** to flex the walls **13**, **14** inwardly. The operating pressure may be exerted through the handle **12** or by pressing a foot on the top wall **13**. The inward flexing of the walls causes the normally closed slits **26** to open and the wax to be expelled through the slits. The quantity of wax discharged in this manner can be controlled easily and effectively by simply varying the pressure which is exerted on the tank and the amount of flexing of its walls. Because of the formation of the tank **11** wherein its internal cross-sectional height tapers from a maximum near the center to a minimum near the ends, there is obtained an improved, even flow and distribution of the wax over the work surface. The spreaders **27** enhance the uniform surface coverage and even flow of the wax through the slits by maintaining the slitted portion of the bottom wall spaced from the work surface.

As generally described above, the construction of the tank **11** is such that it is particularly adapted to serve as the original container in which the wax is sold. This feature is made possible by the self-closing action of the slits **26** which prevents wax in the tank **11** from being discharged when not in use. The weight of the liquid in the container tends to bow the bottom wall portion **14** outwardly and thus force the slits into firmly closed positions. When the wax in the container **11** has been used up, the container can be discarded and the handle **20** reconnected to a new one. However, if it is desired to re-use the tank, the handle can be easily threaded out of the socket **20** to permit wax to be introduced through the filler opening **21**.

In the modified construction illustrated in FIG. 4, the top wall portion **35** of the tank **36** is formed with an integral filler spout **37** which is separate from the handle socket **38**. The filler spout **37** is suitably threaded and a suitable member **39** is provided for closing the spout.

The bottom wall portion **40** of the tank **36** is formed with normally closed slits **41**. Spreader members may be united with the bottom wall portion **40** in the same manner as discussed above in conjunction with the embodiment of FIGS. 1, 2 and 3. Alternatively, a substantially continuous spreader member **42** of sponge rubber, plastic foam, or the like may be adhered over the outer surface of the bottom wall **40**. As shown in FIG. 4, the continuous spreader member **42** is provided with slits **43** which are continuations of the tank slits **41**. The slits **41** and **43** may be formed in the same operation after the member **42** has been secured to the bottom wall of the molded tank **36**.

The modified construction shown in FIG. 5 is substantially the same as that shown above in connection with FIGS. 1, 2 and 3 except that it is provided with an additional applicator cloth **45** which is formed of any suitable material such as cotton, chenille, or the like. The applicator cloth **45** is wrapped around the bottom wall portion of the tank and is secured by protuberances **46**, the cloth preferably being provided with cooperating eyelets. The protuberances **46** may be integrally molded with the top wall portion **13** of the container. As will be seen from FIG. 5, the spreaders or runners **47** space the cloth **45** from the slits so that the liquid in the container is prevented from wicking through the slits and wetting the cloth when the waxer is not in use.

Many other modifications of the invention will be apparent to those skilled in the art in the light of the foregoing detailed disclosure. Therefore, it is to be understood that, within the scope of the appended claims, the invention can be practiced otherwise than as specifically shown and described.

What is claimed is:

1. A liquid applicator device comprising a tank having a flexible wall, spreader means prortuding from said wall, said spreader means being formed of a porous liquid applicator material, and said wall including slits opening through said spreader means, said slits being openable to dispense liquid from said tank when said wall is flexed.

2. The applicator device as claimed in claim **1** wherein said tank is a one-piece molded plastic unit including an integral handle socket, said socket forming an opening into said tank so it can be filled with liquid.

3. The applicator device as claimed in claim **1** wherein said tank is a molded plastic member including a filler opening, and means normally closing said opening.

4. The applicator device as claimed in claim **3** wherein said closing means comprises a handle, said handle having an end threaded into said opening.

5. A valveless hand floor waver comprising a collapsible reservoir tank, said tank having flexible outwardly convex top and bottom wall portions with opposite ends, said top wall portion being cambered so that the internal height of said tank tapers from a maximum midway between its ends to a minimum at the ends, said bottom wall portion including a plurality of normally closed slits, said slits being openable by applying external pressure to said tank to flex said wall portions inwardly, and means for securing a handle to project from said top wall portion.

6. The waxer as claimed in claim **5** including a plurality of parallel spreaders projecting from said bottom wall portion and extending between the ends of said tank.

7. The waxer as claimed in claim **5** including a substantially continuous spreader secured to said bottom wall portion, said spreader including openings disposed over said slits.

8. A valveless hand floor waxer comprising a collapsible reservoir tank, said tank having flexible, outwardly convex top and bottom wall portions with opposite ends, said top wall portion being cambered so that the internal height of said tank tapers from a maximum midway between its ends to a minimum at the ends, said bottom wall portion including parallel rows of spaced, longitudinally extending slits, said slits being openable to dispense wax from said tank by applying external pressure to flex said wall portions inwardly, means secured to said bottom wall portion to apply wax dispensed through said slits, said means being formed of a porous material, and a handle socket formed integrally with said top wall portion for securing a handle thereto.

9. The waxer as claimed in claim **8** wherein said tank and handle socket are a molded one-piece plastic unit.

10. The waxer as claimed in claim **9** including a filler spout formed integrally with said top wall portion and spaced from said handle socket.

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