May 14, 1946. G. W. FOUKE 2,400,084

LIQUID DISPENSING DEVICE

Filed July 24, 1941

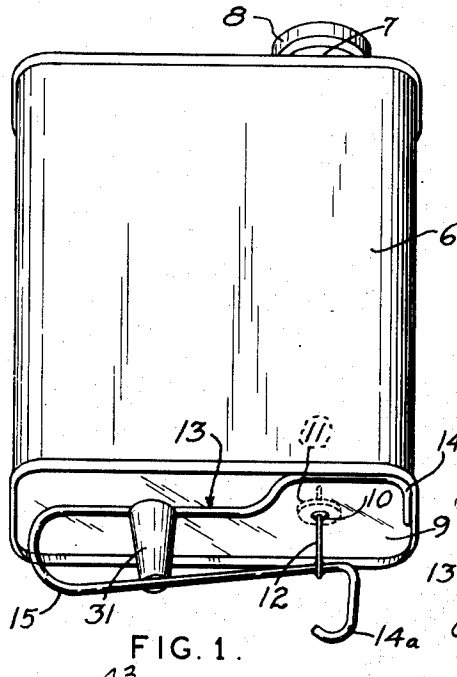

FIG. 1.

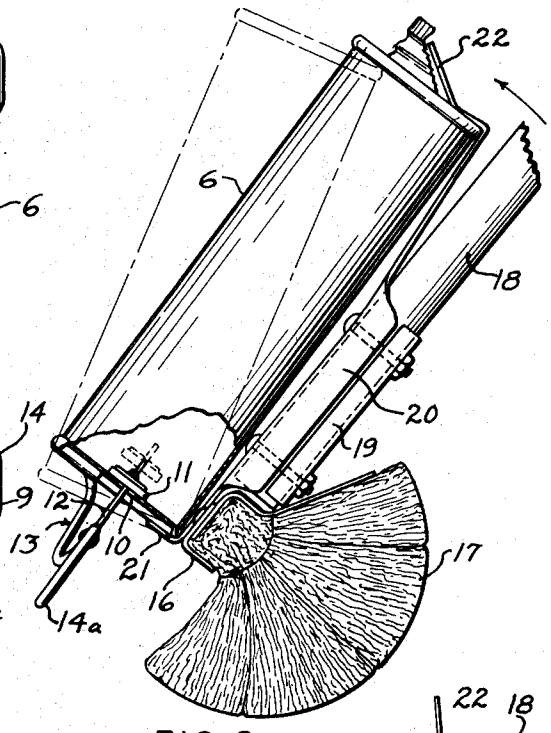

FIG. 2.

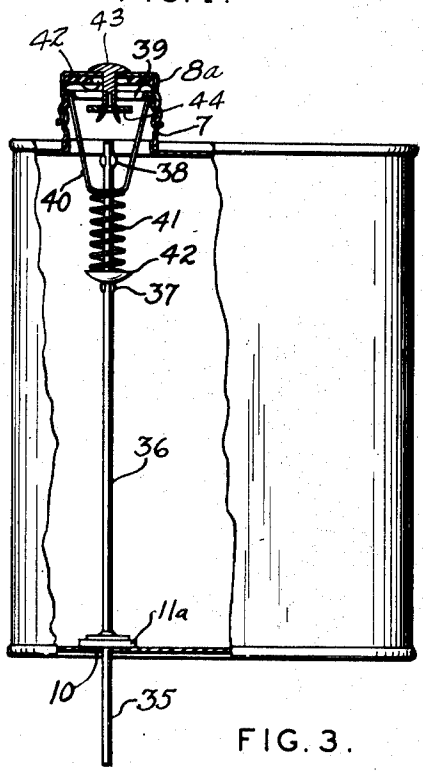

FIG. 3.

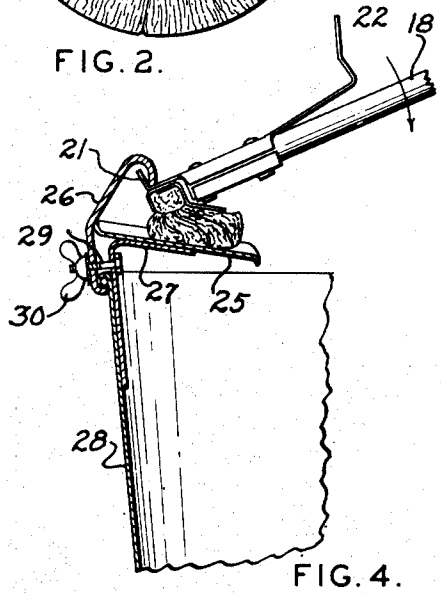

FIG. 4.

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LIQUID-DISPENSING DEVICE

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3 Claims. (Cl. 222—518)

This invention relates to devices for dispensing liquids and consists particularly in a novel device for applying liquid wax to a floor.

Waxing devices including receptacles and dispensing valves of various types have been suggested but these have been rather complicated and expensive and, usually, have involved the use of a complete, specially formed unit including the receptacle, valve, and spreading parts. Moreover, as far as I am aware, it has not been suggested previously that the wax spreading device may be constructed to serve efficiently as ordinary floor or wall cleaning mop.

It is an object of the invention to provide a simplified wax feeding device in which the can in which the wax is ordinarily purchased may be utilized, with slight changes, as the receptacle.

A further object is to provide a novel dispensing valve which may be readily applied to an ordinary wax can.

Still another object is to provide a dispensing valve device of the above type with means whereby the valve may be readily blocked in its closed position for storage when the receptacle is removed from the spreader.

These objects and other more detailed objects hereafter appearing are attained by the devices illustrated in the accompanying drawing in which:

Fig. 1 is a perspective view of a wax can or receptacle having one form of dispensing valve applied thereto.

Fig. 2 shows the receptacle of Fig. 1 applied to a mop for use of the mop as a wax spreading instrumentality.

Fig. 3 is a view, partly broken away and sectioned, showing another form of dispensing valve device.

Fig. 4 is a sectional view showing the spreader device shown in Fig. 2 applied to a suitable form of wringer for expelling water from the absorbent head after use thereof as a mop.

The receptacle in Fig. 1 includes a sheet metal can 6, conveniently of the type in which wax is sold commercially in retail stores and of one pint or one quart capacity. Projecting from the upper wall thereof is a neck or collar 7 which is formed with threads, as shown in Fig. 3, for receiving closure cap 8. The bottom wall 9 is provided with a hole 10 which may be termed the dispensing hole. A small disk valve 11 normally seats against the inner surface of wall 9 for closing hole 10 and has a stem 12 projecting outwardly through the hole. A spring wire 13 is secured at one end 14, as by soldering, to the floor of the can and near its outer end is secured to the outer extremity of stem 12. Beyond the stem, the spring wire is bent outwardly as at 14a for a purpose to be described hereafter. The intermediate portion of the spring wire is looped as at 15 and this loop is normally under tension for holding valve 11 against its seat around opening 10.

The spreader device in Fig. 2 includes a head member formed of a rigid backing part 16 and a pad 17 of resilient absorbent material suitable for use in mopping floors or walls with water. Whereas I have indicated that this pad is formed of fibrous material, a sponge rubber may be conveniently used for this purpose and this material will be satisfactory for spreading liquid wax which has a water base. Elongated handle 18 projects from the head member and is secured thereto by clamping parts 19 and 20. Part 20 is formed at its lower extremity, adjacent the head member, with a laterally projecting finger 21 and at its upper extremity with a resilient finger 22, both fingers projecting laterally from handle 18.

When the spreader member is used as a mop, lower hook 21 permits squeezing or wringing the absorbent head member in cooperation with a squeezing device as shown in Fig. 4. This latter device includes a squeezing plate 25 and a hooked clip 26. A strip 27 extends downwardly from plate 25 and forms a clamp with the lower portion of hook 26 for receiving therebetween the upper edge of an ordinary bucket 28. The clamping parts are secured together by a bolt 29 and wing nut 30.

If it is desired to wring liquid from the mop head, hook 21 is inserted beneath cooperating hook 26 on the wringer device and handle 18 swung downwardly, as indicated by the arrow (Fig. 4). Resilient finger clip 22 will be relatively small and will not interfere with the use of the mop, but, if desired, this finger may be separately formed so as to be independently detachable. A wringing device, as shown, is shown and claimed in my Patent #2,220,401.

When the device is to be used for applying and spreading liquid wax, the dispensing can is inserted between clip fingers 21 and 22, as shown in Fig. 2, with spring projection 14a extending oppositely to handle 18. This spring projection forms, in effect, an extension of the valve stem in position so that when handle 18 is swung upwardly, as indicated by the arrow in Fig. 2, projection 14 will engage the floor or other surface being conditioned to unseat valve 11 to per-

mit a quantity of wax to drop onto the surface adjacent spreading pad 17. When handle 18 is again lowered, valve 11 will automatically close so that the operator may control the application of the wax.

In case the supply of wax is not exhausted when the waxing operation is finished, a cork or other block, as shown at 31 in Fig. 1, may be inserted in loop 15 of the spring wire so as to prevent accidental flexing of the wire and effectively maintain the valve 11 in its closed position until further use of the waxing device.

Fig. 3 shows a modified form of dispensing valve and can in which a straight stem 35 projects outwardly from valve 11*a* for engagement with the surface being conditioned to unseat the valve. A second stem 36, or an extension of stem 35, extends between the valve and neck 7 around the filling opening and has a pair of longitudinally spaced up-set portions 37 and 38. U-shaped resilient strip member 40 is lodged between opposite sides of collar 7 and beneath shoulder 39 at the upper edge thereof. The cross bar portion of the U-shaped member is apertured for slidably receiving stem 36 between up-set portions 37 and 38 thereof. A spring 41 is compressed between the U-shaped member and seating disk 42, as shown. Spring 41 normally urges stem 36 downwardly to maintain valve 11*a* resiliently seated to close dispensing hole 10. This valve device forms a unit which may be readily applied to an ordinary waxing can, after a hole has been drilled in the bottom wall thereof directly opposite the filling opening, merely by compressing the resilient legs of U-shaped member 40, whereupon these legs lodge and are held by their own tension beneath shoulder 39 which is ordinarily formed on the threaded neck 7 of the can. In this manner, it is merely necessary to purchase the valve device, it being a simple matter for the housewife to assemble the same with a can.

The cap 8*a* of Fig. 3 has a relief vent 42 provided with a splash resisting device formed of a rivet 43 having its split shank spread to secure a washer 44 thereon. It has been found that when the waxing device is in use, surging within the sealed can causes the wax to be emitted in spurts through the dispensing opening. The special cap relieves this condition as, in case of surging, the body of air above the liquid lifts rivet 43 and the excess pressure is relieved through the vent. The liquid is prevented from splashing through the vent by baffle washer 44 which, when lifted, can engage the under surface of the cap.

By the use of the device described, the waxing operation is obviously simplified since a person need not stop or kneel either to apply or to spread the wax. Furthermore, a liquid wax having a water base may be readily cleaned from the mop and will not deteriorate the same so that it may be, thereafter, used with soap and water during cleaning operation. The devices may be modified in various respects as will occur to those skilled in the art and the exclusive use of all such modifications as come within the scope of the appended claims is contemplated.

I claim:

1. A dispensing receptacle having a filling opening with a shouldered collar and a dispensing opening spaced therefrom, a valve for said latter opening, a stem element projecting inwardly from said valve toward said filling opening, a U-shaped member resiliently lodged in said collar against the shouldered part thereof, said member slidably receiving said stem element, a spring tensioned between said member and stem element and urging said valve closed, and a second stem element projecting from said valve outwardly for engagement with the surface being conditioned to unseat said valve.

2. In a liquid dispensing device, a receptacle having first and second openings, and a dispensing valve device having a portion projecting through and forming a sealing fit with one of said openings, another portion braced against the receptacle wall adjacent the other opening, and spring means normally maintaining said first portion in sealing engagement with said first opening and stressable by the application of pressure to said projecting valve portion to permit dispensing of liquid through said first opening.

3. A dispensing device as specified in claim 2 further including a removable closure for said second opening.

GEORGE W. FOUKE.