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3,356,442

FOUNTAIN BRUSH AND ROLLER ASSEMBLY

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2 Sheets-Sheet 1

FIG. 1.

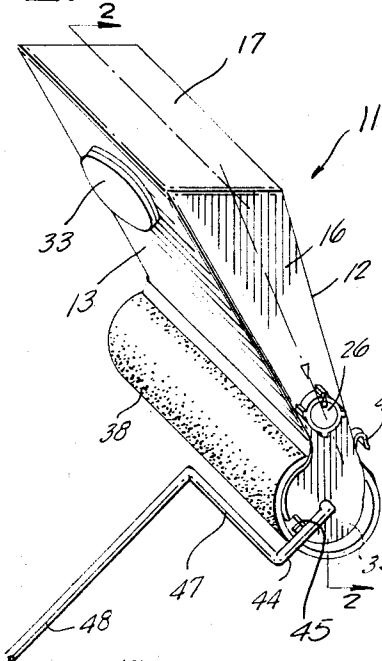


FIG. 2.

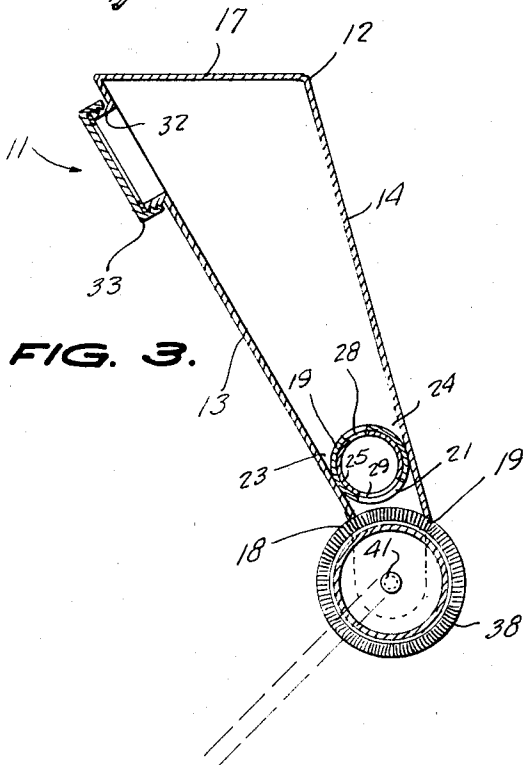
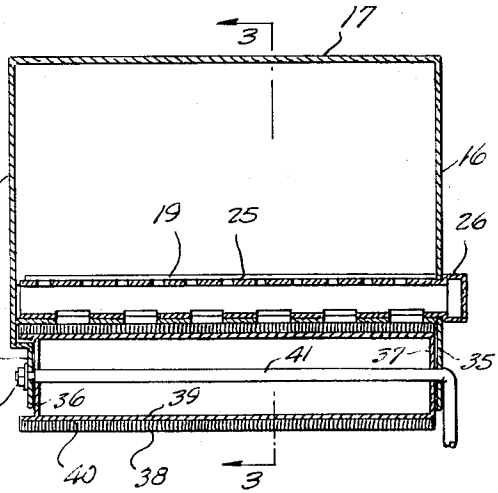
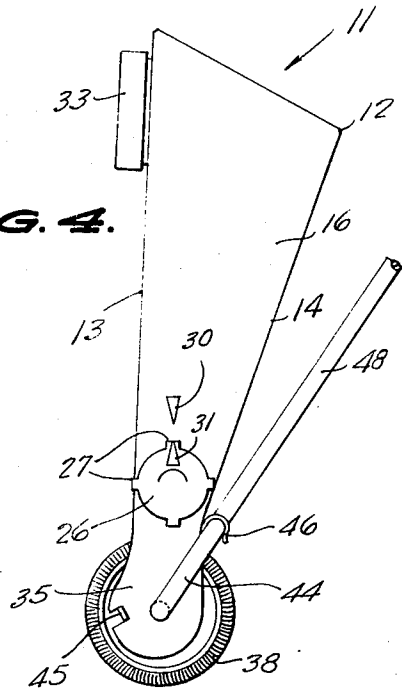


FIG. 4.



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FIG. 5.

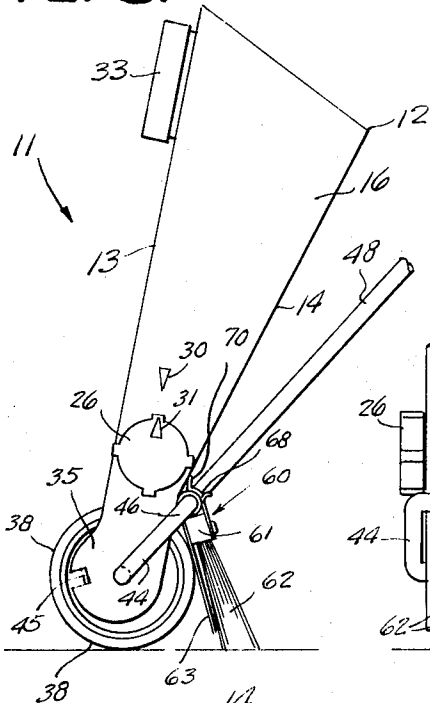


FIG. 6.

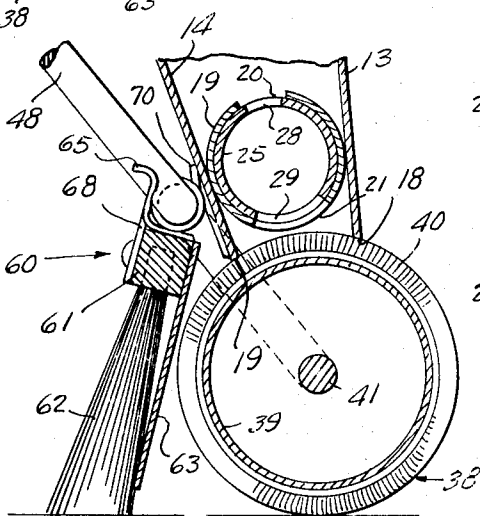
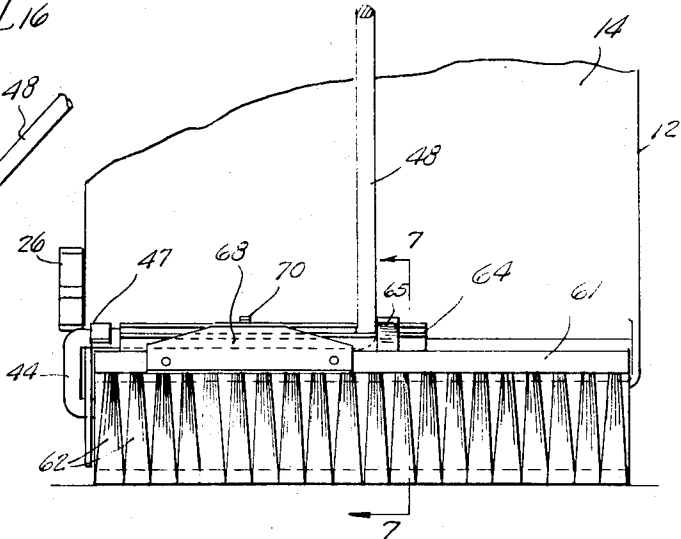


FIG. 7.

FIG. 8.

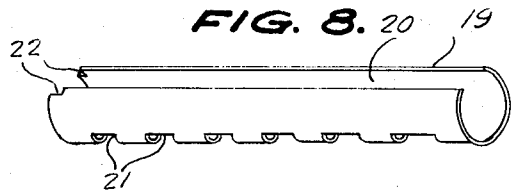
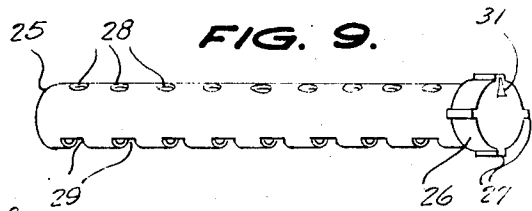


FIG. 9.



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FOUNTAIN BRUSH AND ROLLER ASSEMBLY

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3 Claims. (Cl. 401—15)

ABSTRACT OF THE DISCLOSURE

A liquid applicator consisting of a vertical tank provided in its lower portion with a horizontal apertured valve shell and a rotatable apertured valve core in the shell, the valve core having an external operating knob for adjusting the degree of registry of the valve shell and core apertures. A liquid-distributing roller is journaled on an axle in the bottom of the tank, the roller engaging the lower edges of the front and rear walls of the tank. The axle extends through the end walls of the tank and has an extension with an arm portion thereof extending parallel to the roller and terminating in a perpendicularly-extending handle rod. A depending brush assembly is secured to the arm portion and includes a guard plate extending downwardly between the bristles of the brush assembly and the roller.

This invention relates to liquid applicators, and more particularly to devices for applying liquid, such as floor wax, paint, shampoo or cleansing liquid, or the like.

A main object of the invention is to provide a novel and improved liquid-applying roller assembly of the fountain type which includes liquid flow-control means for regulating the rate of flow of liquid therefrom, which is especially adapted for applying liquid such as paint, floor wax, or the like, to surfaces without requiring dipping, which may be employed for applying liquid to high or low areas with equal efficiency, and which provides uniform distribution of the liquid as it is applied to a surface.

A further object of the invention is to provide an improved liquid applicator of the roller type which includes a liquid reservoir for feeding liquid to the roller element of the assembly, the assembly being simple in construction, being easy to operate, being light in weight, and being durable in use.

A still further object of the invention is to provide an improved combination fountain roller and brush assembly which may be employed for cleansing a surface and simultaneously applying a liquid thereto, for example, for cleansing and shampooing rugs or similar items, the apparatus involving relatively few parts, being compact in size, being smooth in operation, and being provided with means for efficiently and accurately regulating the flow of liquid therefrom.

Further objects and advantages of the present invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

FIGURE 1 is a perspective view of an improved liquid applicator constructed in accordance with the present invention, shown with the liquid reservoir thereof adjusted to an elevated position with respect to the handle rod thereof, whereby the apparatus is arranged for applying liquid, such as paint, or the like, to a relatively high surface.

FIGURE 2 is a cross-sectional view taken substantially on the line 2—2 of FIGURE 1.

FIGURE 3 is a transverse vertical cross-sectional view taken substantially on the line 3—3 of FIGURE 2.

FIGURE 4 is a side elevational view, to a somewhat enlarged scale, of the apparatus of FIGURE 1 adjusted for applying liquid to a low surface or to a floor surface.

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FIGURE 5 is a side elevational view of the apparatus, similar to FIGURE 4, but showing a brush assembly attached to the apparatus.

FIGURE 6 is a fragmentary rear elevational view of the apparatus of FIGURE 5.

FIGURE 7 is an enlarged vertical cross-sectional view taken substantially on the line 7—7 of FIGURE 6.

FIGURE 8 is a perspective view of the shell member secured inside the liquid reservoir of the apparatus of FIGURES 1 to 7 and forming part of the liquid flow rate-regulating means therein.

FIGURE 9 is a perspective view of the hollow apertured valve core member employed as part of the flow-regulating means in conjunction with the shell member of FIGURE 8.

Referring to the drawings, **11** generally designates an improved fountain roller assembly constructed in accordance with the present invention. The assembly **11** comprises a reservoir **12** which is normally arranged in a substantially vertical position, the reservoir having a front wall **13**, a rear wall **14**, and transverse sidewalls **15** and **16**, as well as a horizontal top wall **17**. The front and rear walls **13** and **14** are provided with the spaced parallel bottom edges **18** and **19**, said front and rear walls being downwardly-convergent, as shown in FIGURES 3 and 4. A generally cylindrical, upwardly-facing channel or shell member **19** (as shown in FIGURE 8) is secured horizontally between the front and rear walls **13** and **14** above and adjacent the bottom edges **18** and **19** thereof, said shell member having the longitudinally-open top portion **20** and being formed with longitudinally-aligned circumferential slots or apertures **21** in its bottom portion. The shell member **19** is notched-out at the end upper corner thereof, as shown at **22**, to provide drainage means for liquid which would otherwise tend to accumulate in the downwardly-convergent spaces **23**, **24** located at opposite sides of the open top portion **20** of the shell member.

Designated at **25** is a generally cylindrical apertured hollow valve core member which is snugly-fitted in the fixed shell member **19**, being rotatably and sealingly-mounted therein as shown in FIGURE 2, the core **25** being provided at one end thereof with the enlarged head portion **26** which is located externally-adjacent to the sidewall **16**, the core member **25** being engaged through an aperture provided in the lower portion of said sidewall, the head member **26** being integrally-formed with ribs **27** so that the head member may be employed as an adjusting knob to rotate the core **25** in the shell member **19** for adjusting the rate of flow of liquid from the reservoir in a manner presently to be described.

The hollow core **25** is provided in its top wall portion with longitudinally-aligned apertures **28** exposed through the open top portion **20** of shell member **19** and is further provided with longitudinally-aligned circumferential slots or apertures **29** registrable with the slots **21** of shell member **19**. As shown in FIGURE 3, the apertures **28** are arranged substantially diametrically-opposite the apertures **29**, and the apertures **29** are substantially of the same order of angular size and longitudinal width as the apertures **21** and are located so as to be fully registrable therewith when the hollow core **25** is adjusted to the position thereof shown in FIGURE 3. The same is true with respect to the apertures **28** of core member **25**, said apertures **28** being fully registrable with the open top space **20** of shell member **19**. By rotating the core **25** by means of its external head portion **26**, the core may be adjusted to provide lesser degrees of registration with respect to the apertured parts of the shell member **19** so as to provide reduced regulated liquid flow from the reservoir. Thus, the sidewall **16** is provided with an index marker **30** located above the head portion **26** and the head portion is pro-

vided with a cooperating index marker 31 which, when positioned directly opposite the marker 30, as shown in FIGURE 4, it indicates maximum liquid flow rate from the reservoir. By adjusting the head member 26 away from the position of FIGURE 4, as above-described, reduced flow rates may be obtained.

Front wall 13 is provided at its upper portion with a flanged filler opening 32 and with a cover cap 33 threadably-engaged on the filler opening and removable for admitting a supply of liquid into the reservoir.

Sidewalls 15 and 16 are provided in their lower ends with substantially circular tabs or lugs 34 and 35 which are rotatably-engageable against the end portions 36 and 37 of a conventional liquid-application roller 38 received between said lugs 34 and 35, the roller having the rigid inner shell 39 and the outer lining 40 of relatively soft liquid-absorbing material. The roller 38 is provided with a supporting axle 41 which extends centrally through the circular tabs 34 and 35 and axially through the roller frame 39, the axle being provided with a fastening nut 43 externally-adjacent the tab 34. The roller 38 is thus rotatably-secured to the bottom of the reservoir 12 with the bottom edges 18 and 19 of the front and rear walls 13 and 14 in engagement with the peripheral lining element 40 of the roller, as shown in FIGURE 3, the roller being located immediately below the valve assembly defined by shell 19 and core 25.

Axle 41 is integrally-formed with a radial extension 44 externally-adjacent the tab 35, the extension 44 being engageable with an outwardly-projecting lug 45 formed integrally in the tab 35 and cooperating with the extension to limit the reservoir to the upstanding position thereof relative to extension 44 shown in FIGURE 1. Opposite the lug 45, the lower corner portion of the wall 14 is formed with a resilient downwardly-facing hook-shape lug 46 which is cooperable with an arm element 47 merging with extension 44 in the manner illustrated in FIGURE 4, to support the reservoir 12 in the position thereof shown in FIGURE 4.

The radial extension 44 merges with the arm element 47 which extends parallel to and adjacent to the roller 38, said arm element merging with a handle rod 48 which extends substantially perpendicular to the roller 38. The handle rod 48 may be employed to hold the assembly in the position thereof shown in FIGURE 1, with the lug 45 in engagement with the extension 44, whereby the device may be employed to distribute paint or other liquid to an elevated surface, since the reservoir 12 is thus supported in an upright position and the liquid contained therein gravitates downwardly through the valve assembly defined by shell 19 and core 25 and is deposited on the liquid-absorbing lining 40 of the roller 38. By means of the handle rod 48, the assembly can be rolled over the surface to be moistened, whereby the liquid is distributed from the roller lining 40 to the surface. Alternatively, with the apparatus arranged in the manner shown in FIGURE 4, namely, with lug 46 clampingly-engaging the arm element 47, the apparatus may be employed to distribute liquid onto a horizontal surface or to a low surface, since the reservoir 12 is again supported in an upright position and the liquid is allowed to gravitate downwardly therefrom onto the roller 38.

As will be readily apparent, the apparatus, above-described, may be employed to apply various types of liquids to different surfaces, for example, to apply paint to walls or floors, or to apply other liquids, such as to apply liquid wax to floors. The apparatus may also be employed for shampooing rugs or similar applications wherein a brushing as well as a liquid-applying action is required. For this purpose, a brush assembly, designated generally at 60, in FIGURES 5, 6 and 7, is mounted on the apparatus immediately behind the roller 38.

The brush assembly 60 comprises a top bar 61 of any suitable material in which are secured a plurality of bristle tufts 62. Secured to the inner side of the top bar 61, as

viewed in FIGURE 7, is a rigid depending plate member 63, substantially coextensive in length with the top bar 61, and depending for substantially the major portion of the length of the bristle tufts 62, the guard plate 63 serving to shield the bristle tufts from the liquid carried by the moist outer lining 40 of the roller, whereby to prevent saturation of the bristle tufts by said liquid. The guard plate 63 thus serves as a means for maintaining the bristle tufts 62 in a substantially dry and relatively stiff condition, so that they cannot be softened by excessive exposure to the liquid carried by the roller 38.

Secured on the top surface of the bar member 61 is an upwardly-facing rigid channel member 64 which extends from one end of the bar member 61 for a substantial distance along the bar member, the channel member being shaped to receive the arm element 47, as shown in FIGURE 6. Thus, the channel member 64 is of sufficient length to receive substantially the entire length of the arm element 47, the top bar 61 being provided with an upstanding lug 65 engageable with the handle rod 48 to limit endwise movement of the channel member relative to the arm element 47. A resilient spring plate 68 is secured to the outer side of the top bar 61, said spring plate 68 overlying the open top portion of the channel member 64 so that it serves as a means to clampingly-secure the top bar 61 to the arm element 47. The top portion of the spring plate 68 is yieldable outwardly sufficiently to allow the channel member 64 to be disengaged from the arm element 47 when it is desired to detach the brush assembly 60 from the main portion of the apparatus.

In shampooing a rug, the shampoo liquid gravitates downwardly onto the roller 38 and is deposited thereby onto the surface of the rug as the apparatus is rolled along the rug, the bristles 62 engaging the rug behind the roller and working the liquid into the rug to provide the desired shampooing action. Suitable means are provided for preventing the brush assembly 60 from swinging rearwardly away from the roller 38 as the roller is moved forwardly, for example, an upstanding lug 70 may be provided on the top edge of the inner wall of channel member 64, the lug 70 being engageable with wall 14 opposite the spring plate 68 to limit rearward swinging movement of the brush assembly 60, namely, clockwise movement of the brush assembly, as viewed in FIGURE 7, as the apparatus is pushed forwardly.

The reservoir 12 is prevented from falling forwardly by the clamping engagement of resilient hook member 46 with arm element 47.

While certain specific embodiments of an improved fountain roller assembly have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A fountain roller assembly comprising a substantially vertically-elongated reservoir having downwardly-convergent front and rear walls and transverse sidewalls, said front and rear walls having spaced parallel lower edges, a generally cylindrical multiply-apertured shell member secured horizontally between said front and rear walls above and adjacent said lower edges, a hollow cylindrical multiply-apertured valve core member rotatably and sealingly-mounted in said shell member, said valve core member having an external end means for adjusting the rotated position of the valve core member in the shell member, the apertures in the core member being registrable with the apertures in the shell member, a roller rotatably-connected to said sidewalls below and engaging said lower edges and extending parallel to said lower edges, said roller being provided with a supporting axle, a radial extension on one end of said axle, opposite stop lugs on the sidewall adjacent said radial extension engageable therewith to limit rotation of the reservoir

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relative to the extension, an outwardly-extending handle rod integrally-connected to said extension and extending substantially perpendicular to said axle, said end means comprising an enlarged hollow head portion formed on the valve core member and located above and adjacent said stop lugs, an arm element integrally-connecting the outer end of said radial extension to the inner end of said handle rod, said arm elements extending parallel and adjacent to said roller, and a depending brush assembly connected to said arm element and extending adjacent and parallel to said roller, said brush assembly comprising a top bar, means to clampingly-secure the top bar to said arm element, a plurality of bristle tufts secured to and depending from said top bar, and a guard plate secured to said top bar and extending downwardly between said bristle tufts and said roller.

2. The fountain roller assembly of claim 1, and wherein the means to clampingly-secure the top bar to the arm element comprises an upwardly-facing longitudinal channel member on the top bar receiving the arm element and a spring plate secured to said top bar and overlying

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said channel member and the arm element disposed therein.

3. The fountain roller assembly of claim 2, and an upstanding stop lug on the intermediate portion of the top bar engageable with the junction of the handle rod and arm element to limit endwise movement of the brush assembly.

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