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SHAMPOO ATTACHMENT FOR FLOOR POLISHER

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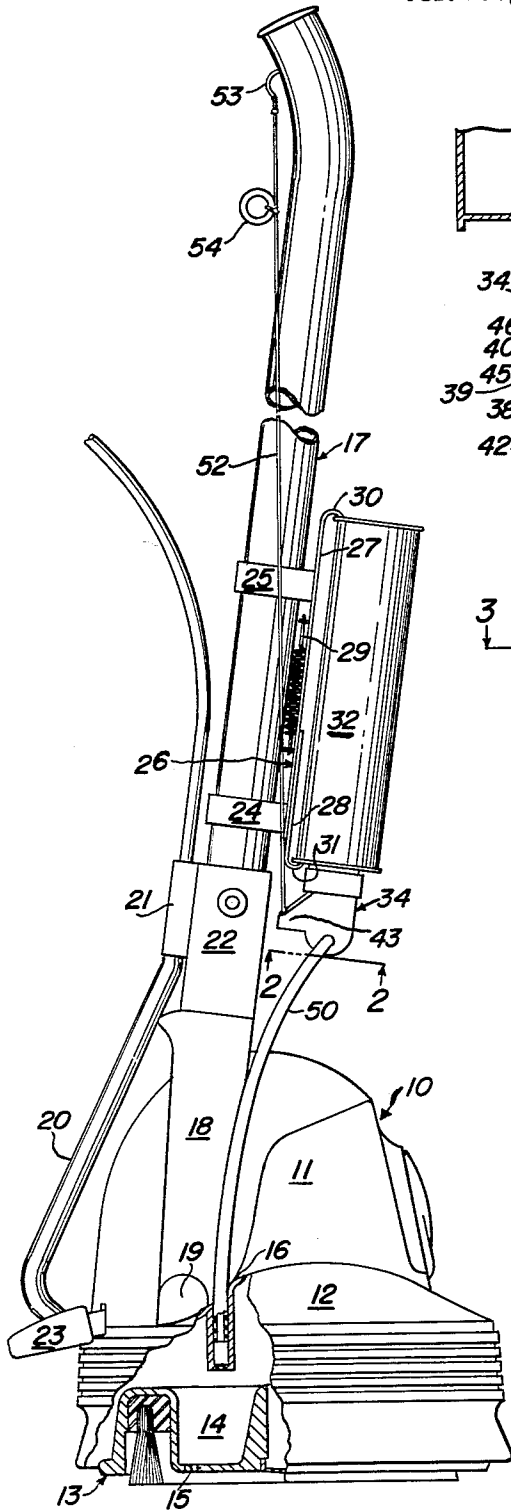


Fig. 1

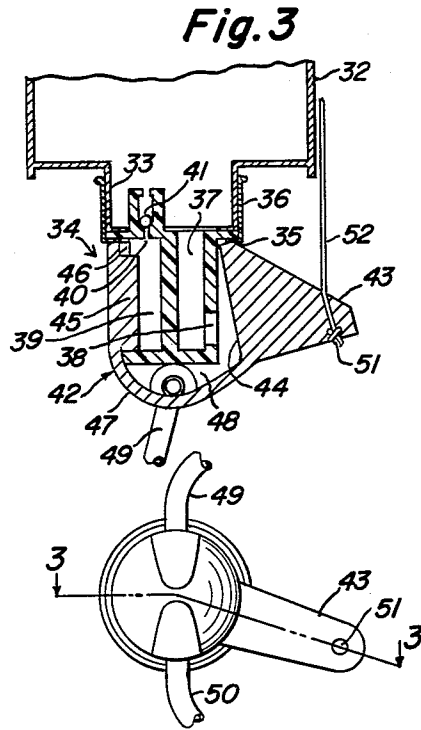


Fig. 2

Fig. 3

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## SHAMPOO ATTACHMENT FOR FLOOR POLISHER

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The present invention relates to an attachment for a floor polisher and more particularly to an attachment for dispensing a liquid detergent on top of the rotating shampoo brushes of a converted two brush floor polisher.

Specifically, according to the present invention, a clamp is attached to the handle of the appliance for detachably supporting an ordinary commercially bought can of detergent to the handle of the appliance in an upside down position by the housewife, the contents of the can dispensed, the empty can removed and a new can attached for further rug shampooing operations.

The usual cap for the can is removed and a special cap applied before the can is attached to the appliance handle in an upside down position. The special cap includes a novel dispensing valve, according to the present invention, which may be opened to dispense the detergent by merely pulling on a string at the top of the handle of the appliance.

The novel dispensing valve includes a comparatively rigid body of any suitable plastic material having means for attaching it to the pouring spout of an ordinary commercially purchased can of liquid detergent, with the rigid body extending downwardly from the spout of the can when the can is inverted, which is its normal position of use.

The rigid body is formed with an elongated cavity or bore which communicates with the interior of the can and with a side opening extending laterally through its wall. A second cavity or bore parallel to the first is provided communicating with the interior of the can by means of an opening normally closed by a check valve. A small vent is provided leading from atmosphere to the second bore to admit air into the second bore and thus to the interior of the can as liquid is dispensed through the first bore.

The side opening in the rigid member is normally closed by an elastic sleeve-like member which may be distorted to open the side opening. The sleeve has a comparatively thick sideward extension at the side opening, to the outer end of which the lower end of the actuating cord is attached so that upward movement of the cord will uncover the side opening.

The elastic sleeve includes a bottom chamber which communicates with the side opening when the sleeve is flexed as above described. A pair of openings extend laterally from the bottom chamber to receive the upper ends of a pair of small diameter tubes, the lower ends of which extend through openings in the upper wall of the polisher casing immediately above each of the two shampoo brushes which are rotatably mounted within the casing.

Thus by merely pulling upwardly on the upper end of the string at the upper end of the handle, liquid detergent may be delivered on top of the two shampoo brushes rotatably mounted within the casing of the appliance.

Other objects and advantages of the invention will become apparent as the description proceeds when taken in connection with the accompanying drawings in which:

FIG. 1 is a side view of the shampoo appliance of the present invention showing the relationship of the parts when the handle is in its vertical storage position;

FIG. 2 is an enlarged cross-sectional view taken on line 2-2 of FIG. 1; and

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FIG. 3 is a cross-sectional view taken on line 3-3 of FIG. 2.

Referring to FIG. 1 the numeral 10 represents the outer casing of a floor polisher of known construction, including a hood 11 and a cover shell 12, which together house the motor, the two rotatable brushes and the gearing between them.

According to the present invention, the two brushes are of a special shampoo type known per se and are rotatably mounted within the shell 12 by means well known in the art. One of these well known brushes is shown at 13 of FIG. 1 and includes an annular recess 14 to receive a shampoo solution which is dispensed onto the floor through an annular row of openings 15 in a manner known per se. Openings 16 are formed in the upper wall of cover shell 12 immediately above the recesses 14 of the two brushes 13.

A handle 17, including a bail 18, is pivoted to the appliance body at 19 on opposite sides of the hood 11 so that the legs of the bail 18 straddle the hood 11.

The motor of the appliance receives electric energy from any suitable outlet by means of an electric cord 20 which is attached to the handle 17 immediately above the bail 18 by means of an attaching sleeve 21 secured to the handle socket 22. The energization of the motor is controlled by an on-off switch actuated by a foot lever 23 positioned at the rear of the hood 11.

A pair of clamping bands 24 and 25 surround the handle 17 above the handle socket 22 and each carries one arm of a can clamp generally indicated at 26.

The clamp 26 includes an upper clamp arm 27 and lower clamp arm 28 slidably mounted relative to each other and held retracted by a clamp spring 29. The clamp arms 27 and 28 are provided with hooks 30 and 31 which engage over the beads of a detergent can 32.

In order to attach the detergent can 32 to the handle 17 it is only necessary to engage the bottom bead of can 32 beneath the hook 30, push upwardly and engage the other bead behind the hook 31.

The spring 29 will then draw the clamp arms 27 and 28 together to hold the can 32 in an upside down position as shown.

The can 32 is an ordinary commercially available can containing a liquid detergent and having the usual pouring spout 33. When used with the present invention the usual closure for the spout 33 is removed and a special dispenser valve 34 is applied.

The dispenser valve 34 includes a body 35 made of any suitable rigid plastic material provided with a female connecting member 36 for attachment to the pouring spout 33. The member 36 may have a threaded connection with spout 33 or any other type of connection depending upon the type of connection between the usual closure cap and spout 33 of the can 32.

The member 35 is provided with a cavity or bore 37 which communicates with the interior of the can 32 as shown by FIG. 3 and with a side opening 38 extending through the wall of the body 35.

A second cavity or bore 39 is formed in body 35 which communicates with the interior of can 32 through a vent opening 40 normally closed by a ball valve 41.

The body 35 of dispenser valve 34 is surrounded by a soft plastic sleeve 42, a portion of which forms the valve opening and closing arrangement as will presently appear.

The sleeve 42 includes a comparatively rigid extension 43 having an inner surface 44 which normally closes the side opening 38 in the body 35 leading from the dispensing bore 37. Upward movement of the extension 43 will distort the sleeve 42 and pull the wall 44 away from the body 35 and thus open valve opening 38 as will appear in more detail hereinafter.

The soft sleeve 42 also includes a protuberance 45 which extends partially into the bore or cavity 39, but stops short of the top wall of the cavity 39 to provide a vent opening 46, communicating with atmosphere to vent the interior of can 32 to atmosphere during dispensing operations.

The bottom wall 47 of sleeve 42 is positioned below the bottom of body 35 so as to form a cavity 48 which receives the liquid detergent flowing through the valve opening 38 when the extension 43 is moved upwardly.

A pair of small diameter tubes 49 and 50 extend laterally from the interior of cavity 48 and connect with the openings 16 in the cover shell 12 above the recesses 14 formed in the two brushes 13.

The outer end of extension 43 is provided with an opening 51 in which the lower end of a pull string 52 is anchored. The upper end of pull string 52 is attached to the upper end of handle 17 by fastener 53. A ring 54 is attached to string 52 for manual manipulation thereof.

#### Operation

When it is desired to use the appliance of the present invention for shampooing a carpet or rug a commercially purchased can of the particular detergent desired is obtained, being designated herein by the reference numeral 32.

The usual cap or closure for the can 32 is removed and the dispenser valve 34 applied by attaching the female member 36 to the pouring spout 33 of the can 32, taking care that the extension 43 faces a flat side of the can 32 if it is of the rectangular type.

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The bottom bead is then inserted beneath the hook 30 and an upward push applied to separate the clamp arms 27 and 28 against the bias of spring 29 and the other bead of can 32 inserted behind hook 31. When upward pressure on can 32 is released the spring 29 will draw the clamp arms 27 and 28 together and the hooks 30 and 31 will support the can 32 in the manner shown in FIG. 1.

The upper end of handle 17 is then grasped and the appliance moved to the place to be cleaned and the handle 17 moved backwardly about pivots 19. The foot pedal 23 may then be depressed to energize the motor of the appliance to start the brushes 13 rotating.

The ring 54 may then be grasped and an upward pull applied to pull string 52 to raise the extension 43 upwardly and remove surface 44 away from the side opening 38 to permit liquid detergent to flow from the can 32 through bore 37, opening 38, cavity 48, tubes 49 and 50 and openings 16 onto the rotating shampoo brushes 13.

During that period the appliance is being moved back and forth to shampoo the rug or carpet as the ring 54 is periodically moved upwardly and released to intermittently dispense detergent.

The resiliency of the sleeve 42 is sufficient to return the extension 43 to its normal valve closing position. If desired, a spring may be added to aid it in reclosing the valve opening 38. For example, a spring could be applied to the lower end of cord 52 biasing it downwardly to positively close the opening 38.

When the extension 43 is moved upwardly the opening 38 is opened and fluid flows from the interior of can 32 through bore 37, opening 38, cavity 48 and tubes 49 and 50 to the brushes. As the liquid level in can 32 falls, air is admitted through vent openings 46 and 40 past ball valve 41. When there is no flow through bore 37, flow is prevented through bore 39 by the closure of ball valve 41.

From the foregoing it can be seen that the present in-

vention provides a simple, inexpensive and reliable dispensing valve which is easily applied to the pouring spout of a commercially obtainable detergent containing can which is easily attached to and detached from the handle of a shampoo polisher appliance.

It can also be seen that the present invention provides a simple attachment for a shampoo appliance whereby a commercially available can of detergent may be easily applied and removed from the handle of the appliance for dispensing the detergent to the top of the rotary shampoo brushes of the appliance.

While I have shown and described but a single embodiment of my invention it is to be understood that that embodiment is to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the particular structure shown and described but wish to include all equivalent variations thereof except as limited by the scope of the claims.

I claim:

1. A dispenser comprising, a rigid body, means for attaching said body to the pouring spout of a detergent can, a closed end bore formed in said body for communication with the interior of said can, an opening formed in the side wall of said body leading from said bore to the exterior of said body, a flexible sleeve surrounding said body and having a wall normally closing said opening, liquid outlet means formed in said sleeve, and means for deforming said sleeve to remove said wall away from said opening to provide free communication between said opening and said outlet means.

2. A dispenser according to claim 1 in which said sleeve is provided with a thickened extension where said wall closes said opening and movement of said extension distorts said sleeve to move said wall away from said opening.

3. A dispenser according to claim 1 in which said outlet means comprises a pair of small diameter tubes extending from the bottom of said sleeve and communicating with its interior.

4. A dispenser comprising, a substantially cylindrical body of rigid plastic material provided with means for attaching one of its ends to the pouring spout of a liquid detergent can, a pair of longitudinally extending bores formed in said body, said bores being closed at one end and open at the other end for communication with the interior of said can, one of said bores being open to the exterior of said body and having a check valve normally closing its open end, an opening formed in the wall of said body between the other of said bores and the exterior of said body, a closed end elastic sleeve-like member closely embracing said body and provided with an extension on its inner wall entering the opening into said one of said bores to hold said sleeve-like member in place and providing a vent opening to said one of said bores, the closed end of said elastic sleeve forming a cavity below said body for receiving detergent, a pair of small diameter tubes extending laterally from said cavity for draining liquid therefrom, a comparatively rigid extension of said elastic sleeve at said opening and means for moving said extension for distorting said sleeve for moving it away from said opening for draining liquid from said can to said cavity.

#### References Cited in the file of this patent

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