April 22, 1958 G. A. ANDERSON 2,831,488

APPARATUS FOR CLEANING PAINT ROLLERS

Filed March 3, 1955

2 Sheets-Sheet 1

FIG. 1.

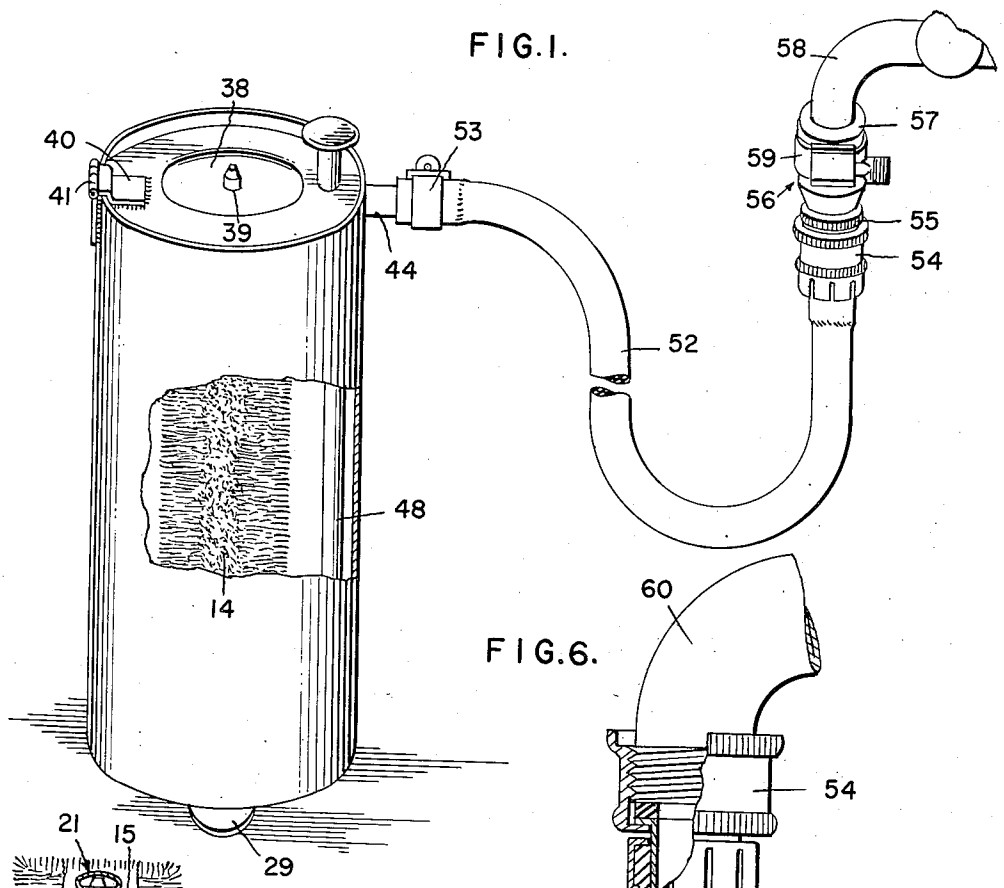


FIG. 6.

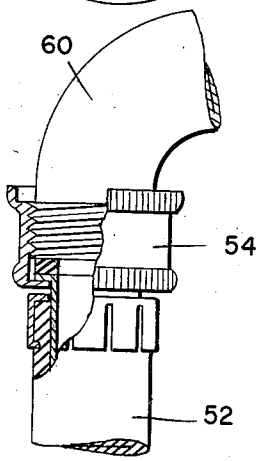
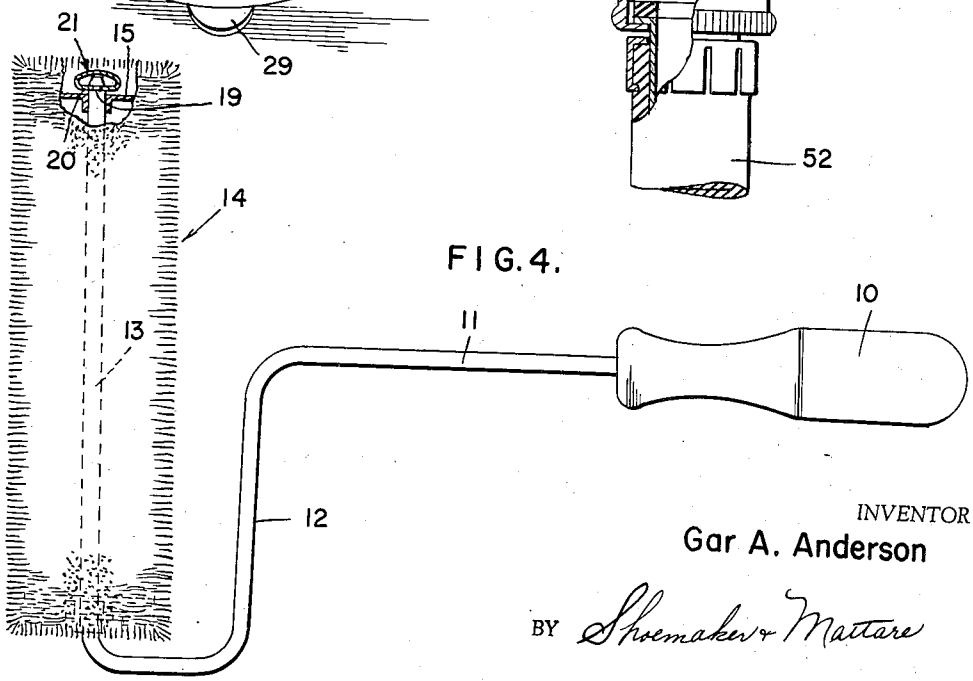


FIG. 4.



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2 Sheets-Sheet 2

FIG.2.

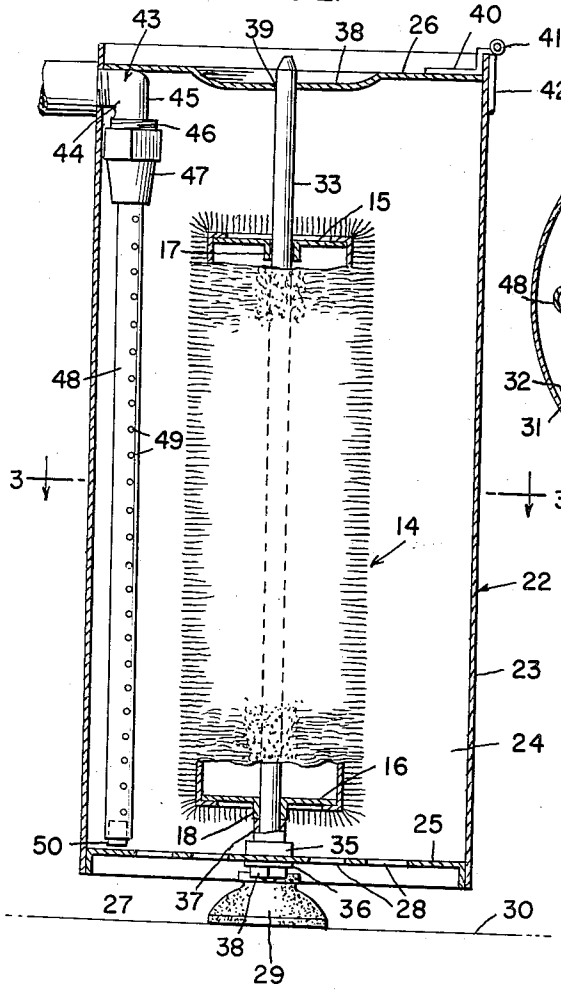


FIG.3.

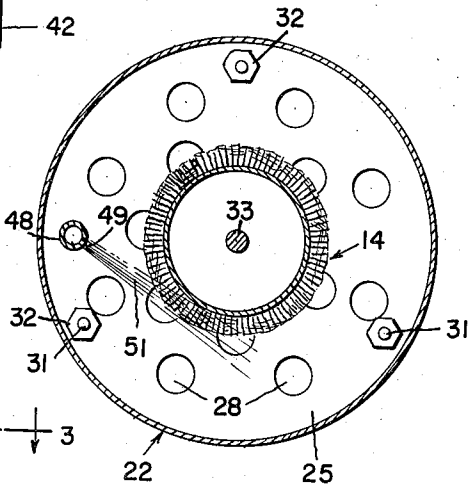


FIG.5.

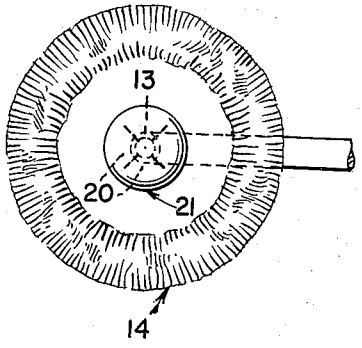


FIG.8.

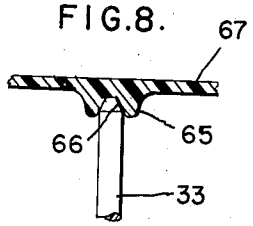
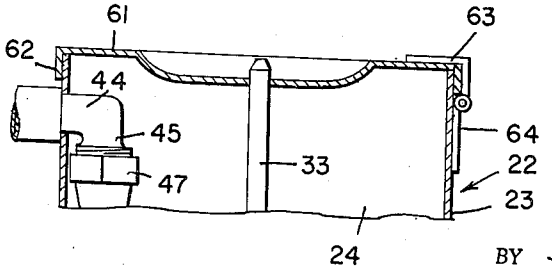


FIG.7.



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APPARATUS FOR CLEANING PAINT ROLLERS

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1 Claim. (Cl. 134—138)

This invention relates to apparatus for performing a cleaning operation on the cylindrical roller of a paint applicator and relates more particularly to means enabling the operation to be performed easily and with rapidity while at the same time with dispatched thoroughness.

With the developement of rubber base and similar paints which are water soluble at least while in the wet or liquid state, there has been increasing interest in and use of applicators for such paints. These applicators, although they may take many forms, usually embody a cylindrical roller covered with a fibrous mat or the like which is dipped into the paint and engaged with the surface to be painted in a back and forth rolling action to thus transfer the paint from the fibrous covering of the roller to the surface. This method of painting has especially gained favor and become standard practice with professional painters. Of course, upon the completion of the work, the applicator roller must be cleaned if it is to be used again and it is quite frequently necessary to clean a roller several times in the course of a day since several different colors may be applied. The rollers are usually cleaned in a bucket or sink and considerable difficulty is encountered in effecting a thorough cleaning action so as to remove all the paint from the fibers, particularly the innermost portions thereof.

It is, therefore, an object of this invention to provide a readily portable unit particularly adapted for the purpose of cleaning the roller of a paint applicator.

Another object of this invention is to provide a cleaner in accordance with the preceding object wherein water is impinged upon the roller in such a manner not only to rotate the same but to penetrate to the full depth of the fibers thereon to effect a thorough cleaning action and wherein the cleaner is easily and rapidly connected to conventional forms of water outlet spigots.

Another object of this invention resides in the provision of a housnig or chamber for rotatably mounting a paint applicator roller therein and means within the housing for simultanenously cleaning and rotating the roller and wherein the intire length of the roller fibers are thoroughly cleaned.

A further object of this invention is to provide a casing having a perforate bottom and a hinged top and a spindle or rod disposed therein for rotatably receiving a paint applicator roller, there being means mounted within the casing for directing water tangentially upon the roller so as to rotate and thoroughly cleanse the same.

Still another object of this invention lies in the paint applicator cleanser in accordance with the preceding object wherein the means for directing water embodies an elongate tube having a series of longitudinally spaced and axially aligned openings therein and wherein the tube is disposed in offset parallel relation to the spindle and is permitted of adjusted rotary movement to precisely direct the water upon the roller in a desired manner.

With the above and other objects in view, the invention consists in the construction and novel combination

and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claim hereto appended, it being understood that various changes in the form, proportions, and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a perspective view of the unit shown connected to a conventional faucet spigot and with parts of the unit broken away to show the relation of certain parts;

Fig. 2 is an enlarged vertical section taken through the cleaner and illustrating a paint applicator roller in place therein;

Fig. 3 is a horizontal section taken along the plane of section line 3—3 in Fig. 2 and illustrating the substantially tangential water discharge against the roller;

Fig. 4 is a plan view of an assembled paint applicator with a portion thereof broken away to show the removable button which normally holds the roller in place;

Fig. 5 is a an enlarged end view of the applicator further illustrating the removable button member;

Fig. 6 is an enlarged elevation with parts broken away showing one manner of coupling the connecting hose to a water outlet spigot;

Fig. 7 is a sectional view showing a modified form of cover construction for the housing or casing; and

Fig. 8 is a sectional view showing a still further modfied form of cover construction.

Reference is had now more particularly to Figs. 4 and 5 wherein a conventional paint applicator is shown. The applicator as shown includes a handle **10** which has rigidly secured thereto and projecting therefrom the stem **11** which includes a laterally offset portion **12** and a journal portion **13** which is spaced from and extends perpendicularly of the axis of the handle, in the manner shown. The journal **13** rotatably receives a cylindrical roller **14** which may be of any conventional form. Such rollers are usually constructed from a rigid framework which is covered with a fibrous mat or the like which is sufficiently absorbent as to hold a supply of paint for application upon the work surface. The framework for the roller includes opposite end wall members **15** and **16** (see also Fig. 2) which have respectively inturned and outwardly directed hub portions **17** and **18** which form bearings by means of which the roller is journaled on the member **13**. The free end of the member **13** is provided with an annular groove **19** within which prongs **20** of a button member **21** project, it being appreciated that the prongs **20** are resilient so that they may be sprung apart to allow the button to be removed from the free end of the member **13**, the roller **14** thus being removable.

The details of the above described assembly form no part of this invention but rollers generally of the type described above are intended to be treated by the hereinafter described cleaning mechanism.

The cleaning unit consists essentially of a casing or housing indicated generally by the reference character **22** and which will be seen to comprise an upstanding tubular side wall **23** forming the chamber **24** having at its opposite ends the bottom wall **25** and the top wall **26**. The bottom wall **25** has a peripheral depending flange **27** which fits into the lower end of the side wall **23** and is secured thereto in any suitable manner. The bottom wall is provided with a plurality of openings **28** therein to permit water to drain rapidly from the interior of the chamber **24**. Three or more suction cup feet **29** are secured to and depend from the bottom wall **25** so as to space the same a substantial distance from a supporting surface **30** to allow free and ready drainage of water through the bottom wall. Each suction cup **29** has an

upstanding stud 31 associated therewith which projects through the bottom wall 25 and to which is applied a nut 32 for rigidly securing each suction cup to the bottom surface of the wall 25. It is, of course, to be understood that any suitable means may be provided for securing the suction cups to the bottom wall, it being necessary in any event that the suction cups space the bottom wall and the lower edge of the side wall 23 a sufficient distance above the supporting surface 30 to permit the rapid draining of the water from the interior of the chamber. The side wall, as shown, is cylindrical in shape but it is to be understood that other shapes may be utilized to advantage, the construction shown being merely in the interest of good appearance.

As shown, a spindle or rod 33 is provided with a threaded lower end portion which projects through the bottom wall 25 and which has applied thereto on opposite sides of such wall the nut members 34 and 35 as well as the lock washer 36 so as to rigidly attach the spindle or rod to the casing. The rod or spindle 33 is preferably disposed substantially centrally within the casing and extends axially thereof to allow good drainage all the way around the roller 14 which is journaled thereon, as will be more clearly apparent presently.

The roller 14 is received on the spindle 33 in the same manner as it is on the applicator portion 13 and is entirely free to rotate on the spindle, but in the vertical position. Preferably, a sleeve-like bearing or bushing 37 is disposed between the securing nut 35 and the roller so as to enhance the free rotation of the roller on the spindle 33 and act as a thrust bearing between the nut 35 and the roller 14.

Thus it will be seen that the spindle is rigidly attached at its lower end to the casing structure and is free thereof at its upper end. However, to stabilize the spindle and rigidify the same while the unit is in action, it will be noted that the cover 26 is provided with a downwardly dished central portion 38 having an aperture 39 therein which receives therethrough the upper end of the spindle 33 to fix such upper end and stabilize the spindle.

As shown in Fig. 2, the cover 26 has attached thereto a hinge leaf 40 joined by means of a pintle 41 to the hinge leaf 42 which is secured on the outer side of the casing 22. The hinge leaf 42 is affixed adjacent the upper edge of the side wall 23 and permits the cover when closed to swing to the position shown in Fig. 2, it being noted that the outer periphery or circumferential edge of the cover 26 fits snugly within the upper end of the side wall 23 so as to be held in fixed position relative thereto when closed. This action taken in conjunction with the aperture 39 receiving the upper end of the spindle firmly locates and stabilizes the latter during operation of the device.

To act as a stop for the cover member 26 when in the closed position, the water inlet member 43 is affixed to the casing 22 in such a position that its upper surface presents a rest for the lid or cover 26 (see particularly Fig. 2). The water inlet 32 is preferably of L-shape and the leg 44 thereof is rigidly affixed as by soldering or the like to the casing 22 and the other leg 45 thereof extends vertically downwardly within the chamber 24. The lower free end of the leg 45 is threaded as indicated by the reference character 46 and receives thereon a coupling nut 47. An elongate tube 48 is fixed axially within the casing 22 but adjacent the side wall 23 thereof by means of the coupling nut 47, the manner of connecting the tube 48 and the leg 45 being entirely conventional and well known in the pipe coupling art. It is important, however, to consider that the tube 48 is formed separately from the water inlet 43 since to adjust the tube 48 it is merely necessary to release the coupling nut 47 and rotate the tube to a desired position and then retighten the coupling nut to effect the desired adjustment. The tube is provided in longitudinally spaced and longitudinally aligned relation therealong with a series of openings or apertures 49 which are adapted to discharge water within the casing 22 and substantially tangentially of the roller 14 as rotatably secured therewithin. The lower end of the tube is closed and for this purpose it may be provided with a plug member 50 in the manner shown.

It will, of course, be apparent that the operation of the device is such as to discharge water through the tube openings 49 to impinge substantially tangentially upon the roller 14 which has been placed within the casing for cleaning. The tangential impingement of water upon the roller and the fibrous exterior mat thereof cleanses the mat very thoroughly and rapidly since the water will penetrate to the entire depth of the mat and will cause a rotating action of the roller due to the tangential impingement which will assure an even cleansing action over the entire surface of the mat.

The bushing 37 has an important function to elevate the lower end of the roller a substantial distance above the bottom wall 25 so as to assure that the lower end of the roller will at no time be immersed within a pool of water at the lower end of the casing, obviating drag upon the roller and also assuring that the lower end of the roller mat will receive as much cleansing agitation as will other parts thereof by impingement of the water stream thereon.

Fig. 3 illustrates the manner in which the water jets 51 impinge upon the roller 14 to simultaneously rotate and cleanse the same.

For connecting the unit to a supply of water a length of rubber, plastic or similar hose 52 is utilized, one end of the hose being forced over the horizontal leg 44 of the water inlet member and a suitable hose clamp member 53 is associated therewith if desired. The opposite end of the hose is provided with a coupling nut 54 and in the instance of connection as shown in Fig. 1, this coupling nut receives a threaded connector 55 which forms part of a conventional spigot connector 56. The spigot connector has a resilient female portion 57 which is adapted to be slipped over the spigot 58 and a suitable hose clamp 59 may be associated therewith to rigidly affix the rubberized part to such spigot. If a threaded type of spigot such as indicated by the reference character 60 in Fig. 6 is available, the coupling nut 54 may be directly secured thereto without the use of the connector 56.

Referring now more particularly to Fig. 7, a modified form of cover member 61 is shown. This cover member incorporates a depending peripheral flange portion 62 which fits over the upper edge of the side wall 23 to firmly affix the cover member to the casing and assure proper alignment and location of the upper end of the spindle 33, the construction being similar in all other respects, except for the exact shape of the hinge leaf 63 secured to the cover and the location of the hinge leaf 64 on the casing by means of which the cover is pivotally secured to the casing so as to be swung open to permit access to the interior of the chamber 24.

Likewise a further modification of the cover assembly is shown in Fig. 8. Here, the cover may be fitted into the interior of the upper end of the side wall 23 as shown in Fig. 2 or may be provided with a peripheral depending flange such as is illustrated in Fig. 7, but in either case it is preferably formed with a boss 65 on its under surface which is provided with a tapered recess 66 to locate the upper end of the spindle 33. The boss 65 is preferably of plastic material and may be formed either integrally with the cover 67 as shown in Fig. 8 or may be formed separately therefrom and secured within the cover aperture.

The invention is particularly useful in conjunction with rubber base and similar types of paint which may be removed from the brush or applicator by means of water. Such paints have increased the use of paint applicators of the type described generally above, particularly they have increased the use of such applicators by professional painters. Hence, it can be appreciated that the herein-

described invention is a very useful tool for professional painters, it being frequently necessary during the course of a working day for a painter to clean out his applicator roller several times. This may be due either to his completion of a job or he may want to continue using the roller but with a different color of paint. In actual use, the cleaning device has been found to clean an applicator roller in much less time than can be done by the usual methods now employed, which usually consist merely of removing the roller and immersing it in a bucket or sink full of water and swishing it around to remove the paint. Also, the constant impingement of the jet of water upon the surface of the roller as accomplished in the herein-described device, agitates the fibrous surface of the roller to a sufficient extent to very thoroughly penetrate and cleanse the same. Thus, the invention not only lessens the cleansing time but also effects a more thorough cleaning action.

Of course, some applicator rollers are of different diameter from others and as described above, this can be accommodated for by merely rotating the tube 48 to its proper position after once loosening the coupling nut 47.

It will be appreciated that the use of paint rollers has also become very popular with individuals such as home owners and such people increasingly utilize these rollers to redecorate the interior of their homes. Consequently, the paint roller cleaner will find widespread use with individuals such as home owners.

One important advantage inherent in the cleaner, which will be particularly useful for housewives, is the fact that it does not result in a messy sink or utensil for cleaning the paint roller and it requires a minimum of handling of the roller before the same is cleaned.

I claim:

A cleaner for paint applicator rollers comprising, a casing having a continuous, vertical side wall, a bottom wall, and a top wall, said bottom wall having a plurality of openings therein providing unrestricted drainage therefrom, support means secured to the undersurface of said bottom wall for supporting the same in elevated position above a supporting surface and to permit the unrestricted drainage therefrom so as to prevent the accumulation of any body of liquid within the casing, means rotatively mounting an applicator roller within the casing in concentric relation thereto, a water inlet member secured to said side wall and having a portion projecting into the interior of the casing, said water inlet member having a horizontal leg secured to said casing and having a vertical portion extending within the casing in close adjacency to the inner surface of the side wall thereof, a vertical tube aligned with and removably secured to said vertical portion of the inlet member, said vertical tube being provided with a series of longitudinally spaced openings therein for directing water in tangential impingement upon the roller, said means for rotatively mounting an applicator roller within said casing including a spindle secured to said bottom wall in the central portion thereof and projecting concentrically upwardly within said casing to a terminal portion substantially coplanar with the upper edge of said side wall, said top wall being pivotally connected to said side wall for movement in a vertical plane between open and shut positions and having a portion thereof snugly receiving said terminal upper end portion of the spindle when the top wall is in closed position so as to retain the spindle in concentrically disposed position within the casing, said casing being of a height greater than the length of the applicator roller and said vertical tube extending substantially completely to the bottom wall of said casing with the openings therein being co-extensive in length with the length of the applicator roller to simultaneously discharge water along the entire length thereof.

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