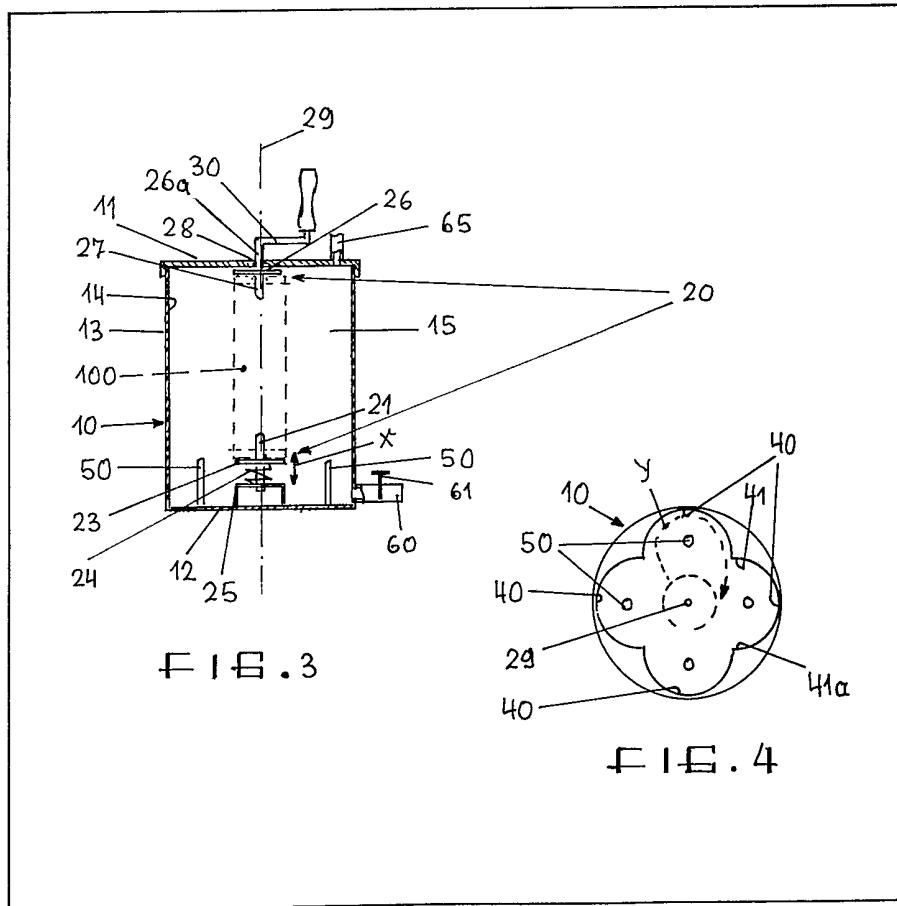


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(54) Apparatus for cleaning
paint-contaminated rollers

(57) Apparatus for cleaning paint-contaminated rollers comprises a container 10 having a cover 11 and provided with a roller holding mechanism 20 arranged to extend vertically or horizontally within it and connected to a crank-like handle 30 operable from outside the container. In use a roller to be cleaned is placed in the holding mechanism, the container is closed, and the holding mechanism is rotated. The roller holding mechanism may comprise a spring loaded supporting structure 21 and holding member 26. A plurality of liquid guide surfaces 40, 41, 41a may be provided within the container. Liquid may be introduced into the container via inlet 65 and drained through outlet 60. Pins 50 may be located on the base 12 of the container for mounting of rollers when the apparatus is not in use.



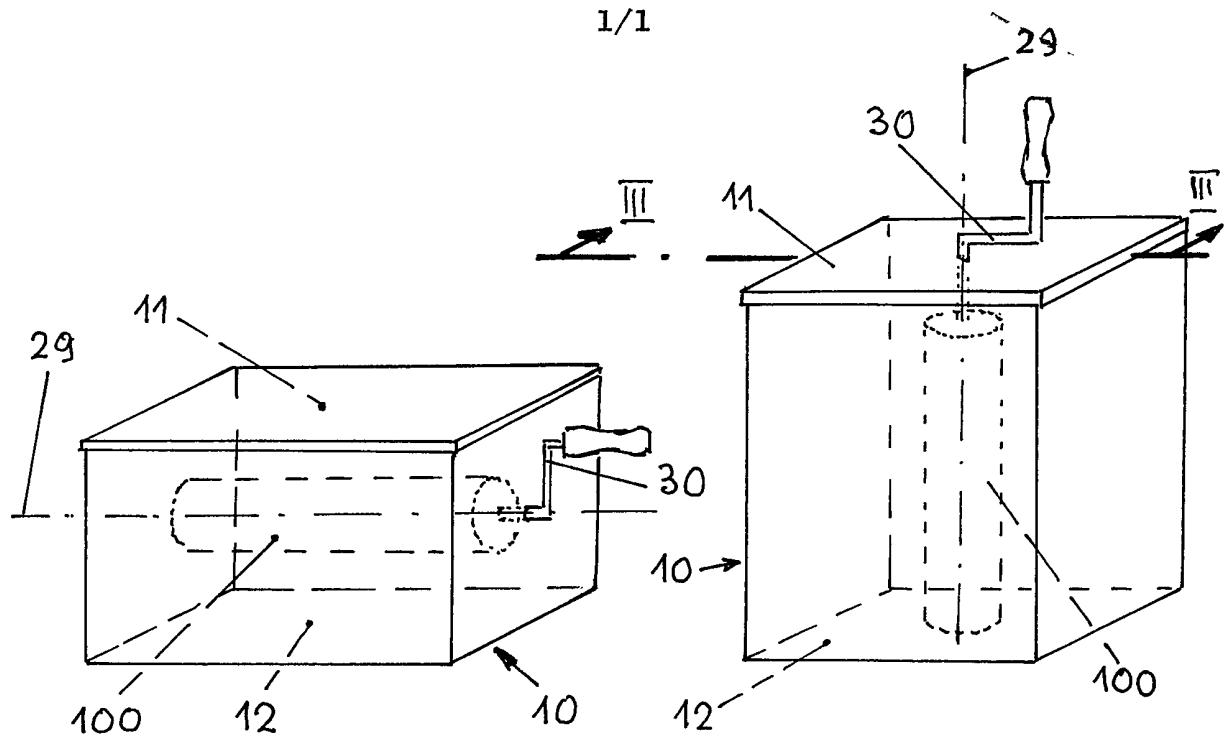


FIG. 1

FIG. 2

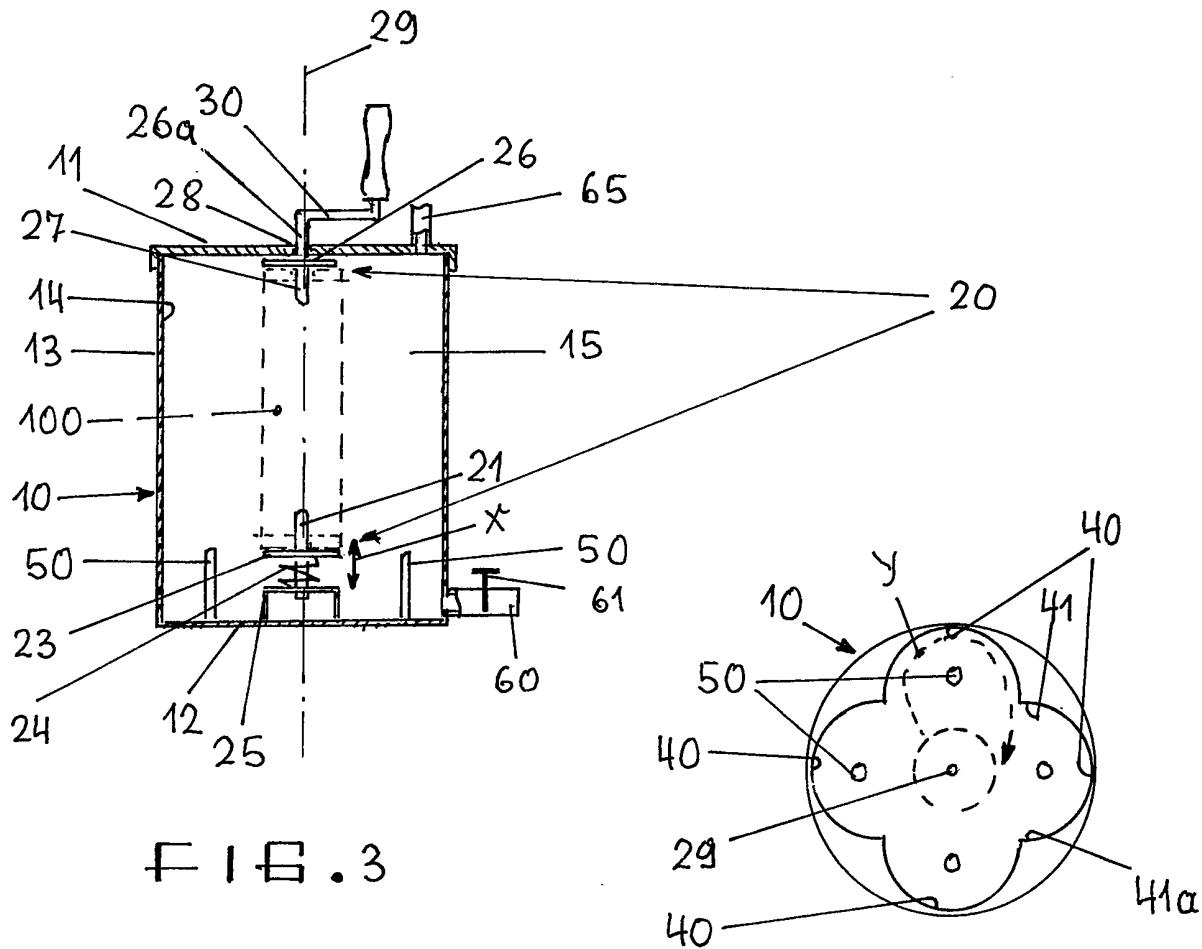


FIG. 3

FIG. 4

SPECIFICATION

Apparatus for cleaning paint-contaminated rollers

5 The invention relates to an apparatus for cleaning paint-contaminated rollers, such as lambskin or synthetic fibre sheet rollers, for rational surface coating by rapid spreading of latex, oil or enamel paint or distempers. Rollers are known for the 10 rational coating of surfaces by the rapid spreading of latex, oil or enamel paints or distempers or a substrate and are constructed as a roller having a handle and which are covered with lambswool or a synthetic fibre sheet. Besides convention coating 15 rollers, angular rollers tubular rollers and special rollers for painting radiators are known.

Difficulties are often encountered in cleaning such paint-contaminated rollers. Firstly a large amount of water is required in the case of water-soluble paint 20 contamination. The domestic wash basins which are available for cleaning purposes are often so small that it is not always possible to avoid paint splashes. Furthermore the draining of rollers is often not possible in rooms. If, however, the rollers are 25 contaminated with paint which is only soluble in turpentine or other suitable solvents special containers must be provided for receiving the solvent and cleaning agent. When cleaning the roller it is once again impossible to prevent paint or solvent 30 splashes from getting onto the floor or leaving behind marks which cannot always be completely removed. Since the rollers also have different dimensions it is also necessary to provide corresponding cleaning vessels.

35 The problem of the present invention is to provide an apparatus permitting an effortless, completely satisfactory and time-saving cleaning and washing of paint-contaminated rollers of different sizes, using small quantities of water and/or solvent which 40 simultaneously obtaining a high washing and cleaning effect on the said rollers.

According to the invention this problem is solved by a cleaning apparatus for paint-contaminated rollers of the type described hereinbefore which, 45 according to the invention, comprises a container provided with a closable cover having a roller holding device for the rollers to be cleaned arranged vertically or horizontally in the inner area of the container and which is externally connected to a 50 crank-like handle to be operated on the outside of the container.

The container has a square or circular cross section or a cross section having some other geometrical shape and at the bottom as a spring-loaded roller supporting structure which can be 55 rotated about a vertical axis and on the inside of its cover has a roller holding member rotatable about its vertical axis and facing the roller supporting structure, the bearing spindle of said roller holding 60 member being passed through the cover and connected to the crank like handle.

An apparatus constructed in this way permits a 65 completely satisfactory and effortless cleaning of paint-contaminated rollers, such as lambskin or synthetic fibre rolls, without it being necessary to

use large quantities of water or other suitable solvents. Due to the fact that the cleaning of the rollers takes place in a closed container, the splashes of paint and the like which otherwise occur when 70 cleaning are avoided. Due to the fact that large quantities of water are not required to obtain a good cleaning action, the apparatus also leads to considerable water savings. If the rollers to be cleaned are contaminated with paint which can only be dissolved by specific solvents economies in the consumption of solvents are also achieved. Furthermore the contaminated solvent left behind by the cleaning process can be emptied into separate containers for removal and destruction, so that such paint-contaminated solvents do not enter the sewer system and consequently the sewage. Thus, the apparatus constructed according to the invention 80 also prevents pollution of the environment. Furthermore through the use of the present cleaning apparatus much work time is saved, because the cleaning of rollers by known methods takes up a relatively large amount of time. There is no need to subsequently drain the cleaned rollers. The rollers 85 can be left in the apparatus until almost dry of water, solvents, etc.

Further advantageous embodiments of the invention can be gathered from the sub-claims, particular preference being given to the construction in which the inner wall surface of the container carries a 90 plurality of semicircular liquid guide surfaces with aligning surfaces directed towards the longitudinal axis of the roller receiving bearing arranged around the longitudinal axis of the roller receiving bearing. This permits an intense cleaning of paint-

100 contaminated rollers to such an extent that the liquid particles removed from the roller in the direction of the inner wall surface of the container due to the rotation of said roller in the clean container are removed in such a way that they again strike the 105 roller surface, thereby permitting an intense cleaning of the complete roller within a very short time.

The invention is described hereinafter relative to non-limitative embodiment and the attached drawings wherein show:

110 *Figure 1* a cleaning apparatus for the roller or rollers tools in which the paint-contaminated roller is held in the horizontal position, shown diagrammatically.

Figure 2 a further embodiment of the cleaning

115 apparatus for the rollers of rolling tools vertically arranged in the inner area thereof, in diagrammatic view.

Figure 3 a vertical section along the line III-III of Figure 2.

120 *Figure 4* a cleaning apparatus with liquid deflecting surfaces arranged in the inner area thereof, with the cover removed in a view from above.

The cleaning apparatus for paint-contaminated roller tools comprises a box-shaped or cylindrical

125 container 10 with a square, rectangular or circular cross section or a cross section having any other geometrical configuration. This container 10 can be closed by means of a cover 11. Cover 11 can be fixed by means of hinges in the upper area of one of the 130 side walls 13 of container 10. It is also possible to

provide the cover 11 with an all-round rim and to dimension it in such a way that the cover 11 placed on the rim of side wall 13 of container 10 is held by force fit on the said container. Container 10 has a 5 base 12, whilst the inner area of container 10 is designated by 15 and its inner wall surface by 14.

The inner area 15 of container 10 contains a holding device 20 for the paint-contaminated rollers 100 to be cleaned. The roller holding device 20 is 10 arranged in the container inner area 15 in such a way that the inserted roller to be cleaned is positioned vertically or horizontally in said inner area (Figures 1 and 2).

In the embodiment shown in Figure 3 the roller 15 holding device 20 comprises a supporting structure 21 at the bottom and an upper holding member 26. The supporting structure 21 comprises a set pin 22 mounted in a bearing support 25 arranged on the inner wall surface of base 12 having a supporting 20 disc 23 on which is supported the mounted roller 100 to be cleaned and is simultaneously centred in a vertical position by means of set pin 22. The set pin 22 is constructed in such a way that it can engage in the central through-bore in roller 100. Set pin 22 with 25 its supporting disc 23 bears against a spring 24 in bearing support 25 in such a way that set pin 22 with supporting disc 23 moves in the direction of arrow X. Moreover set pin 22 is mounted in the bearing support 25 by means of its supporting disc 23 so as 30 to rotate about its longitudinal axis.

The holding member 26 corresponding to the supporting structure 21 is fixed to the cover 11 of container 10 above and spaced from the supporting structure 21. Holding member 26 also comprises a 35 set pin 27 and can also be provided with a supporting disc constructed in the same way as disc 23. This set pin 27 of holding member 26 is rotatable mounted in cover 11 at 28. The bearing spindle 26a is passed through the cover 11 and is connected to a 40 crank-like handle 30. It is possible to provide between holding member 26 and the crank-like handle 30 a transmission gear (not shown in the drawings) making it possible to give the holding member 26 and consequently the roller 100 secured in the roller 45 holding mechanism 20 a higher rotational speed than the crank-like handle 30. The longitudinal axis formed by the supporting structure 21 and the holding member 26 for roller 100 is indicated at 29 in Figure 3.

50 In the case of the embodiment of the cleaning apparatus shown in Figure 4 the inner wall surface 14 of side walls 13 of container 10 carries a plurality of semi-circular liquid guide surfaces 40, whereof each liquid guide surface 40 has two leg-like aligning 55 surfaces 41, 41a having an angular position which is such that liquid striking surface 40 is so removed via the aligning surfaces 41, 41a that it strikes the roller 100 to be cleaned located in the inner area 15 of container 10. The liquid guidance by said guide 60 surfaces 40, 41, 41a is indicated in figure 4 by arrow Y.

In the embodiment shown in Figure 4 there are four semi-circular guide surfaces 40 distributed over the inner wall surface 14 of the container 10 and all 65 constructed identically. The number of said liquid

guide surfaces 40 is dependent on the diameter and shape of container 10.

When the cleaning apparatus is not in use a plurality of rollers 100 can be housed in the inner 70 area 15 of container 10. For this purpose the inner wall surface of base 12 of the container 10 carries shaped-on, vertical pins 50 on which can be mounted further rollers. The arrangement of the roller receiving pins 50 is such that the rollers 100 75 mounted thereon are positioned within the space partly surrounded by the liquid guide surfaces 40, 41, 41a. This makes it possible to keep in water or some other suitable liquid plurality of rollers for a relatively long period, thereby preventing that any 80 still adhering paint particles from hardening after an incomplete cleaning of the rollers. As the container 10 can be closed by means of cover 11 an evaporation of the liquid in the inner area 15 of the container 10 is prevented.

85 The base area of container 10 is also provided with a drain connection 60 carrying a shut-off valve 61. On completing the cleaning of a roller the washing liquid can be effortlessly removed from the container via said drain connections 60 with shut-off valve 90 61 open.

The cleaning apparatus according to the invention is used as follows. After removing cover 11 from container 10 the roller 100, for example a lambskin or synthetic fibre sheet roller to be cleaned and 95 which has been removed from the roller tool is mounted on the supporting structure 21 of the roller holding mechanism 20, so that the set pin 22 engages in the central-through-bore of roller 100. Cover 11 with holding member 26 of roller holding 100 mechanism 20 is then fitted in such a way that set pin 27 of holding member 26 also engages in the central-through-bore of the roller so that the roller 100 to be cleaned is secured between supporting structure 21 and holding member 26 of the roller 105 holding mechanism 20. Due to the fact that the supporting structure 21 is flexible mounted in the bearing support 25 it is also possible to arrange in mechanism 20 rollers with different lengths. If longer rollers are inserted the supporting structure 21 is 110 merely pressed against spring 24 so that said roller can also be secured in the roller holding mechanism 20.

The washing liquid can be introduced before fitting the cover 11. However, it is also possible to 115 introduce the washing liquid into the inner area 15 of container 10 through a sealable opening (not shown in the drawings) provided in cover 11 after the later has been fitted. If a large amount of washing liquid is required it is also possible to connect the cleaning

120 apparatus to a water main. To this end cover 11 also has an inlet 65 to which can be connected a water hose or the like for water supply purposes, whilst with the shut-off valve 61 open the drain connection 60 can be connected via a further hose to a drain, 125 sewer system or the like.

By operating the crank-like handle 30 the paint-contaminated roller 100 located in the inner area 15 of container 10 is rotated and is cleaned by the washing liquid in the inner area of container 10. The 130 intensiveness of cleaning is further increased by the

liquid guide surfaces 40, 41, 41a of container 10 (Figure 4). Surfaces 40, 41, 41a can be shaped onto the inner wall surface 14 of container 10. However, it is also possible to construct the said surfaces 40, 41, 5 41a as inserts which can be inserted into the inner area 15 of container 10. In addition to the manual operation of the cleaning apparatus it is also possible to use other types of drive mechanisms. Thus, the rollers 100 to be cleaned can also be operated by 10 motor drive.

In the embodiments of Figures 1 to 4 the cleaning apparatus is intended for receiving a single roller to be cleaned. However, it is also possible in a corresponding choice of the dimensions of container 10 to 15 arrange a plurality of roller holding devices 20 in the inner area of the container so that a relatively large number of rollers can be simultaneously secured and cleaned. The bearing spindles 26a of the roller holding device 20 are then led by means of mechanical gears etc. to a single drive and/or to the 20 crank-like handle 30 so that an operating the same all the rollers 100 are simultaneously rotated.

CLAIMS

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1. An apparatus for cleaning paint-contaminated rollers such as lambskin or synthetic fibre sheet rolls, for rational surface coating by the rapid spreading of latex, oil or enamel paints or distempers, wherein 30 the apparatus comprises a container having a sealable cover with a roller holding mechanism vertically or horizontally arranged in the inner area for the rollers to be cleaned and which is connected to the

crank-like handle operated from the outside of the 35 container.

2. An apparatus according to claim 1, wherein the container having a square or circular cross section or a cross section with some other geometrical configuration is provided on the bottom with a 40 spring-loaded supporting structure rotatable about its vertical axis and on the inside of its cover with a roller holding member facing the roller supporting structure and rotatable about its vertical axis, whereby the bearing spindle of the holding member is 45 passed through the cover and is connected to the crank-like handle.

3. An apparatus according to claims 1 or 2, wherein a plurality of semi-circular liquid guide surfaces with aligning surfaces directed towards the 50 longitudinal axis of the roller holder mechanism are arranged about the longitudinal axis of the later on the inner wall surface of the container.

4. An apparatus according to any one of the claims 1 to 3, wherein the base of the container has 55 on its surface facing the container inner area a plurality of vertical, fixed roller receiving pins.

5. An apparatus according to any one of the claims 1 to 4, wherein in the area of the base the container has a drain connection with a shut-off 60 valve.

6. An apparatus according to any one of the claims 1 to 4, wherein the cover of the container has a hose connection and in the vicinity of its base a drain connection with a shut-off valve.

65 7. An apparatus substantially as described hereinbefore with reference to the drawings.