March 22, 1960 W. D. BOYDEN 2,929,387

PAINT ROLLER CLEANER AND PAINT MIXER

Filed Oct. 29, 1954 2 Sheets-Sheet 1

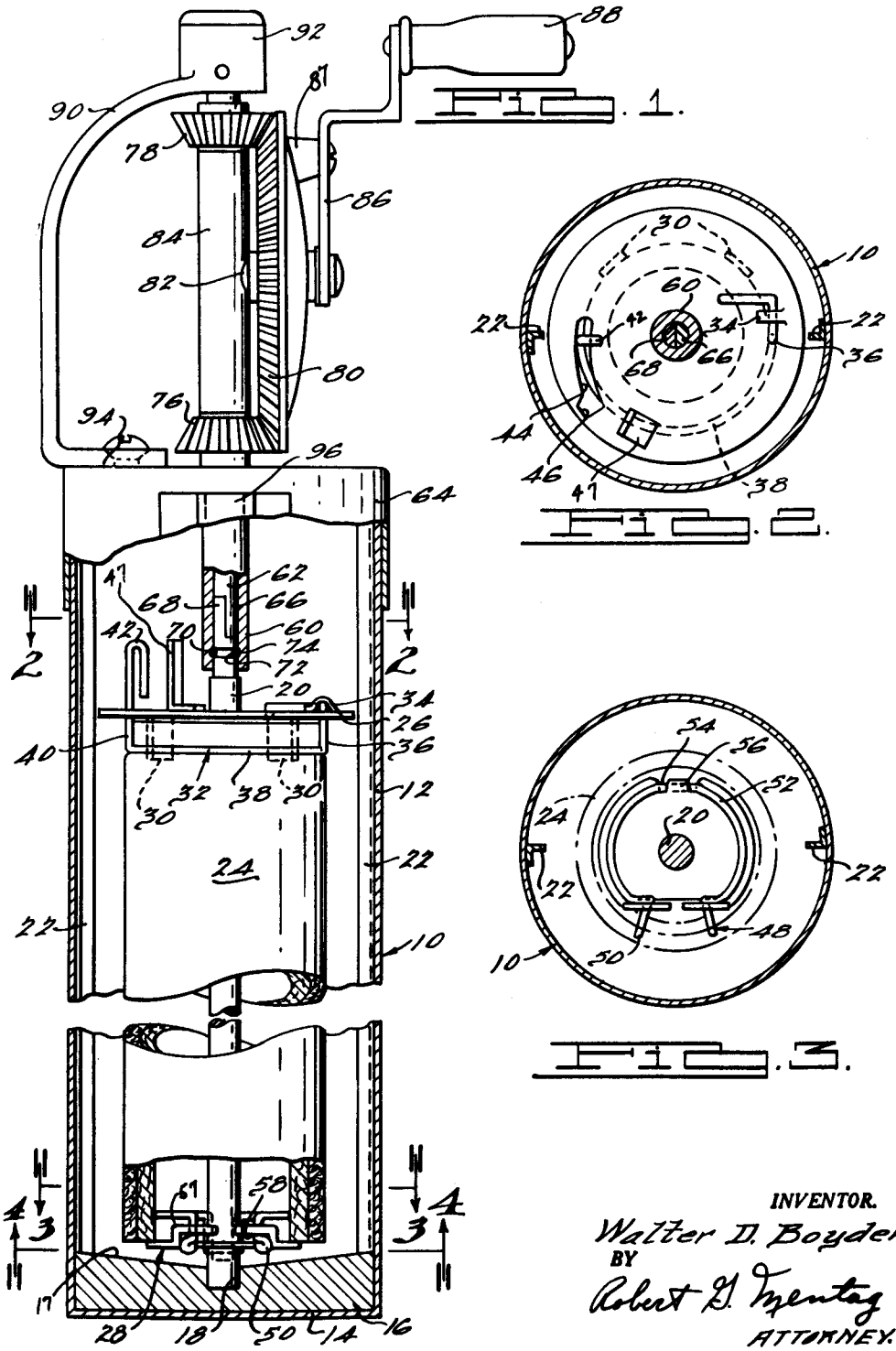


FIG. 1.

FIG. 2.

FIG. 3.

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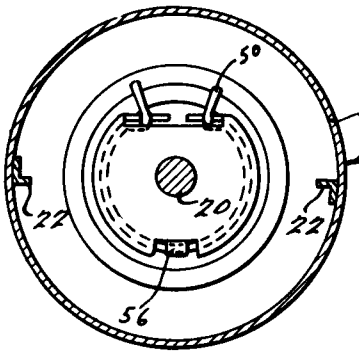


FIG. 4.

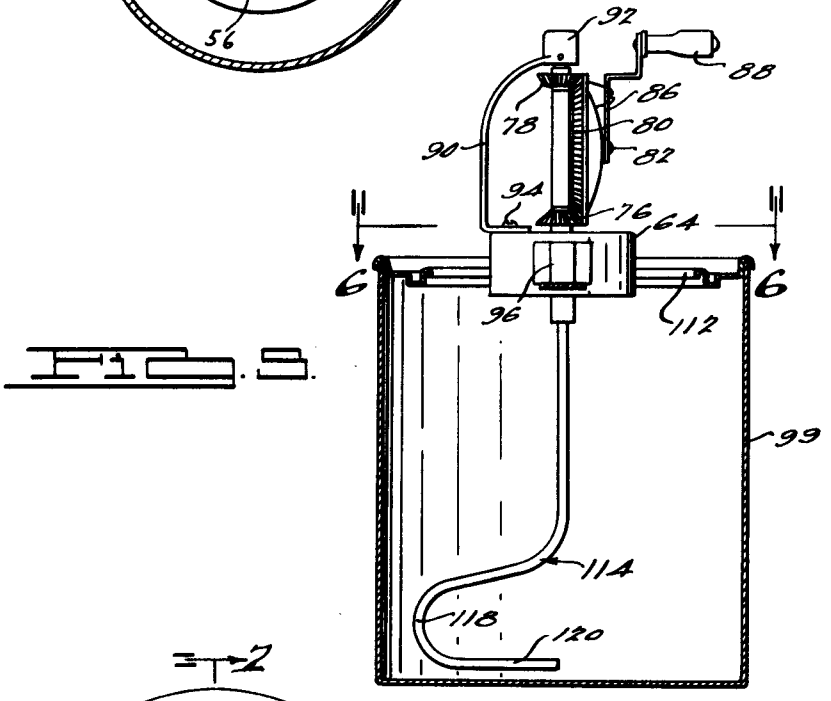


FIG. 5.

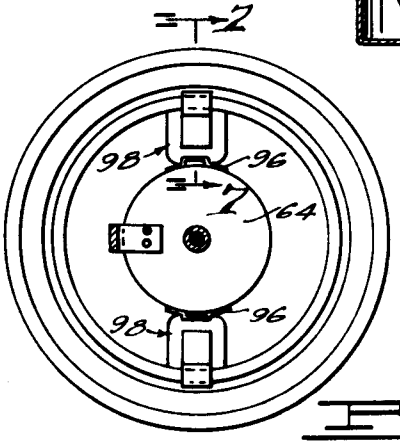


FIG. 6.

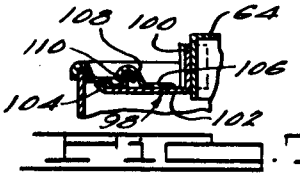


FIG. 7.

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PAINT ROLLER CLEANER AND PAINT MIXER

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Application October 29, 1954, Serial No. 465,498

2 Claims. (Cl. 134—149)

This invention relates to improvements in apparatus capable of functioning as a paint roller cleaner or, alternatively, as a paint mixer.

In the past few years, the use of paint rollers has increased immeasurably and, the cleaning of the roller after the paint job has been completed presents the roller operator with a time consuming and unpleasant task. Accordingly, it is the primary object of this invention to provide an apparatus adapted to clean a paint roller quickly and efficiently, and which may also be used as a paint mixer.

It is another object of this invention to provide a paint roller cleaner which is small in size and light in weight, which features make this apparatus especially easy to use, as for example, a woman can operate it without exertion.

It is a further object of this invention to provide a paint roller cleaner which uses a minimum of cleaning fluid and, which enables the operator to re-use the same cleaning fluid a number of times.

It is a still further object of this invention to provide a paint roller cleaner which functions with a washing action, thereby subjecting the paint roller to a thorough cleansing after which the roller may be dried by spinning it inside the apparatus or, by spinning it when exposed to the atmosphere.

It is another object of this invention to provide a paint roller cleaner which may be quickly adapted for paint mixing by the substitution of a stirring paddle for the paint roller holder means.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detailed structure illustrated without departing from the invention, and it is intended that the present disclosure shall be considered to be but the preferred embodiment.

Forming a part of this application are drawings in which:

Figure 1 is an elevational view, partly broken away and partly in section, of the illustrative embodiment of the invention;

Figure 2 is a horizontal sectional view of the structure illustrated in Figure 1, taken along the line 2—2 thereof;

Figure 3 is a horizontal sectional view of the structure illustrated in Figure 1, taken along the line 3—3 thereof;

Figure 4 is a horizontal sectional view of the structure illustrated in Figure 1, taken along the line 4—4 thereof;

Figure 5 is a central, sectional, elevational view of the invention showing the paint mixer structure;

Figure 6 is a horizontal view, partly in section, of the structure illustrated in Figure 5, taken along the line 6—6 thereof;

Figure 7 is a partial vertical sectional view of the

structure illustrated in Figure 6, taken along the line 7—7 thereof.

Referring now to the drawings, and more particularly to Figure 1, the numeral 10 indicates a cylindrical container comprising a wall portion 12 and a bottom 14. A self-centering bearing member 16 is fixedly mounted in the container 10 against the bottom 14, and may be made from a solid piece of metal or from sheet metal to provide a hollow bearing member, as desired. The container 10 is preferably fabricated from a suitable lightweight metal.

The self-centering bearing member 16 is provided with an upper face 17 which slopes inwardly toward the center thereof, and which terminates at the center in a recess 18 adapted to rotatably support a shaft 20. The container 10 is provided with a plurality of longitudinally extending baffles 22 which coact with the cleaning fluid in the container to provide a washing action which thoroughly and efficiently cleans the paint roller 24, which is rotatably carried on the shaft 20.

The paint roller 24 is detachably carried on the shaft 20 between an upper clamping member 26 and a lower clamping member 28. The upper clamping member 26 is fixedly mounted on the shaft 20 and is provided with a pair of spaced, downwardly extending arms 30 against which the upper end of the paint roller 24 is securely held by means of the spring clamp 32. As is best seen in Figures 1 and 2, the spring clamp 32 is generally semi-circular in shape, and has a vertical portion 36 extending upwardly through the clamping member 26 and which is held in place by the upstruck portion 34 of clamping member 26. The paint roller engaging portion of spring clamp 32 is the semi-circular portion 38 which is integral with part 36 at one end thereof and integral with an upwardly directed portion 40 at the other end thereof. Spring clamp portion 40 extends upwardly through the slot 44 in clamping member 26 and terminates in the handle portion 42. The slot 44 is provided with a notch 46, in which the vertical spring portion 40 may be moved and held in the released position. by merely grasping the stationary member 47 with a forefinger and portion 42 with the thumb and exerting a pressure on portion 42.

The lower clamping member 28 is slidably mounted on the shaft 20 and is adapted to overlie the lower edge of the paint roller 24 and hold it against the upper clamping member 26. The lower clamping member 28 is provided with a spring clamp generally designated as 48. The spring clamp 48 comprises a pair of outwardly extending arms 50 carried on two arcuately shaped arms or portions 52 which are adapted to be sprung outwardly into a gripping engagement with the inner surface of the paint roller 10. The rear ends of spring clamp portions 52 are curved downwardly as at 54 and are fixed in place by means of the overlying part 56 of clamping member 28. The clamping member 28 is provided with pair of spaced arms 57 which are formed between the body part of member 28 and the spring clamp 48, and which forms an enclosure 58 in which is retained the spring arms 50. It will be obvious that if the paint roller 24 is of the type having a self-contained bearing member with a hole therethrough at one end, which is the size of the shaft 20, the lower clamping member 28 will not be needed.

A collar 60 encloses the upper end of shaft 20 and the lower end of drive shaft 62, said collar being fixed to, and carried by, a cover or support 64 which is adapted to be slidably mounted on the upper end of the container 10. The drive shaft 62 is provided on the lower end thereof with a half-round extension 66 which is made to mate with a half-round extension 68 on the upper end of shaft 20 to form a driving connection between

the two shafts. In order to retain the shafts in engagement, the collar 60 is provided with an internal groove 70 and the shaft 20 with a complementary external groove 72 in which is seated a coiled spring clip 74.

The drive shaft 62 is rotatably mounted in the cover 64 and extends upwardly therethrough. Fixedly mounted on the upper end of shaft 62 is a pair of beveled pinions 76 and 78 which are meshably engaged by a drive gear 80 rotatably carried by a shaft 82 which is fixed on a spacer sleeve 84 disposed between the pinions 76 and 78. A crank 86 is mounted on the outer end of shaft 82 and is secured to the drive gear 86 by a connector arm 87. The crank 86 is provided with a handle 88. It will be understood, that the hand-drive means, 76 through 88, could be replaced by a suitable power drive means, if desired. A handle means 90 is provided for carrying and holding the device. The handle means 90 includes an upper end portion 92 which also functions as a bearing for the upper end of shaft 62, and a lower end portion 94 secured to the top of the cover 64.

In Figures 5 through 7, the invention is shown being used as a paint mixer. In order to provide for such use, the cover 64 is provided with a pair of oppositely disposed holding means 96 in which is slidably mounted a pair of clips 98 adapted to detachably engage the top of a paint can as 99. The clips 98 comprise a vertical portion 100 adapted to engage the holding means 96 and a horizontal portion 102 having an upwardly extending part 104 adapted to engage the underside of the bead formed around the inside of a paint can. Another horizontal portion 106 is fixed to the upper side of portion 102 and carries a curved extension, indicated by the numerals 108 and 110, adapted to operatively engage the upper side of the bead formed around the inside of a paint can. The clips 98 function to securely hold the device in a paint can, on the bead which is indicated generally as 112.

When used as a paint mixer, the shaft 20 carrying the paint roller is detached from the drive shaft 62 by merely pulling downwardly. The paint mixer attachment 114 is provided with a half-round extension on the upper end thereof (not shown) in a manner similar to the upper end of shaft 20. The attachment 114 is connected to the shaft 62 by merely inserting the upper end thereof inside the collar 60 and into engagement with the shaft 62. The paint mixer attachment 114 is provided with a curved lower portion 118 and horizontal portion 120, which portions function to efficiently mix any paint contained within the paint can 99.

In use, starting with the shaft 20 connected to the shaft 62 and ready for use, the container 10 would first be filled with a suitable paint cleaning fluid to the desired level. The paint roller 24 would be loaded onto the shaft 20 by first disposing one end thereof against the abutment members 30 and then snapping the spring clamp 32 against the roller in a position opposite to the abutment members by pushing the portion 42 out of the notch 46. The lower clamping member 28 is mounted on the lower end of shaft 20 by urging the two portions 50 toward each other and slipping the clamping member onto the shaft with the spring part 52 inside the roller 24. The portions 50 are then released and they will move outwardly to lockingly engage the roller 24 and hold it securely on the shaft 20. The entire assembly is then disposed in the fluid in the container 10 with the cover 64 slidably engaging the upper end of the container 10. The crank 88 is then operated in the usual manner whereby the roller 24 will be rotated in the cleaning fluid in the container and the paint will be removed easily and quickly from the roller. The baffles 22 serve to provide a washing action inside the container during the cleaning action and this helps to clean the roller thoroughly. It will be obvious, that during the assembly operation, the lower end of shaft 20 will be guided into the bearing 18 by means of the sloping face 17 of the self-centering member 16. After the paint has been completely removed from the roller 24, the cleaning fluid may be removed from the container and the roller again inserted and agitated to provide a drying effect. It will be seen, that the instant device employs a minimum of cleaning fluid during the operation thereof and that the fluid may be saved and reused many times over.

In order to use the invention as a paint mixer, it is merely necessary to disengage the shaft 20 from the shaft 62 and mount the paint mixer paddle 114 in engagement with the shaft 62 as described hereinbefore.

While it will be apparent that the preferred embodiments of the invention herein disclosed are well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. A paint roller cleaning apparatus comprising: an elongated container for holding a cleaning fluid; a cover releasably mounted on said container; a first shaft rotatably mounted in said cover and extending outwardly and inwardly therefrom and longitudinally of said container; a second shaft disposed in said container and having the upper end thereof detachably connected to said first shaft; a self-centering bearing member in the lower end of said container for rotatably supporting the lower end of said second shaft; said bearing member including an upper face which slopes inwardly from the outer edges toward the center thereof, and a centrally disposed axial recess in which the lower end of said second shaft is rotatably supported; at least one longitudinally extended baffle fixedly mounted in said container for providing a washing action to the liquid in said container; an upper and a lower clamping member carried on said second shaft adapted to releasably hold a paint roller therebetween; said upper clamping member including, a first transversely disposed plate fixedly mounted on the second shaft, a pair of spaced downwardly extended arms on said first plate adapted to engage the periphery of one end of a paint roller, and a semi-circular spring clamp on said first plate adapted to engage the periphery of said one end of a paint roller at a position opposite to said arms so as to releasably secure said one end of a paint roller therebetween; said lower clamping member including, a second transversely disposed plate adapted to engage the other end of a paint roller and having an axial hole through which said second shaft is slidably mounted, and a pair of oppositely disposed upwardly extending semi-circular spring clamps on said second plate and adapted to be releasably engaged with the inner periphery of said other end of a paint roller; and, drive means operatively connected to said first shaft for rotating said shafts, whereby, said paint roller will be rotated through the cleaning fluid.

2. A paint roller cleaning apparatus comprising: an elongated container for holding a cleaning fluid; a cover releasably mounted on said container; a first shaft rotatably mounted in said cover and extending outwardly and inwardly therefrom and longitudinally of said container; a second shaft disposed in said container and having the upper end thereof detachably connected to said first shaft; an upper and a lower clamping member carried on said second shaft adapted to releasably hold a paint roller therebetween; said upper clamping member including, a first transversely disposed plate fixedly mounted on the second shaft, a pair of spaced downwardly extended arms on said first plate adapted to engage the periphery of one end of a paint roller, and a semi-circular spring clamp on said first plate adapted to engage the periphery of said one end of a paint roller at a position opposite to said arms so as to releasably secure said one end of a paint roller therebetween; said lower clamping member including, a second transversely disposed plate adapted

to engage the other end of a paint roller and having an axial hole through which said second shaft is slidably mounted, and a pair of oppositely disposed upwardly extending semi-circular spring clamps on said second plate and adapted to be releasably engaged with the inner periphery of said other end of a paint roller; and, drive means operatively connected to said first shaft for rotating said shafts, whereby, said paint roller will be rotated through the cleaning fluid.

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