

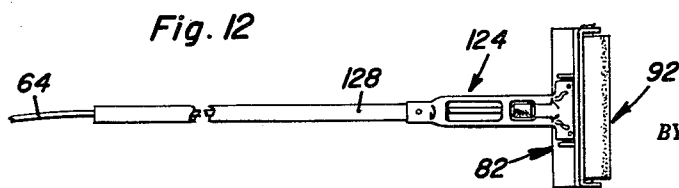
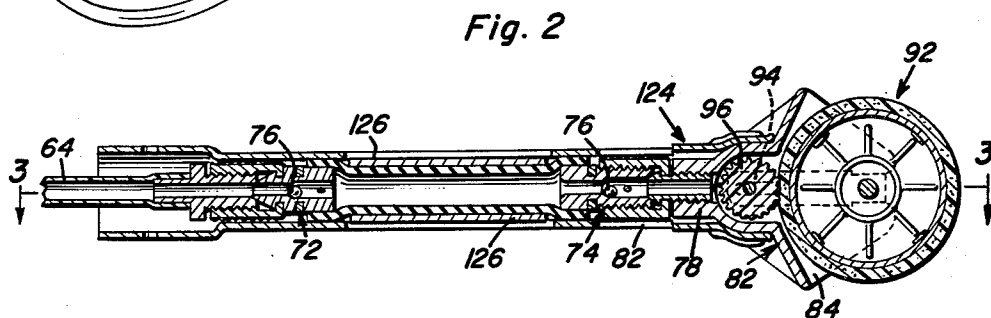
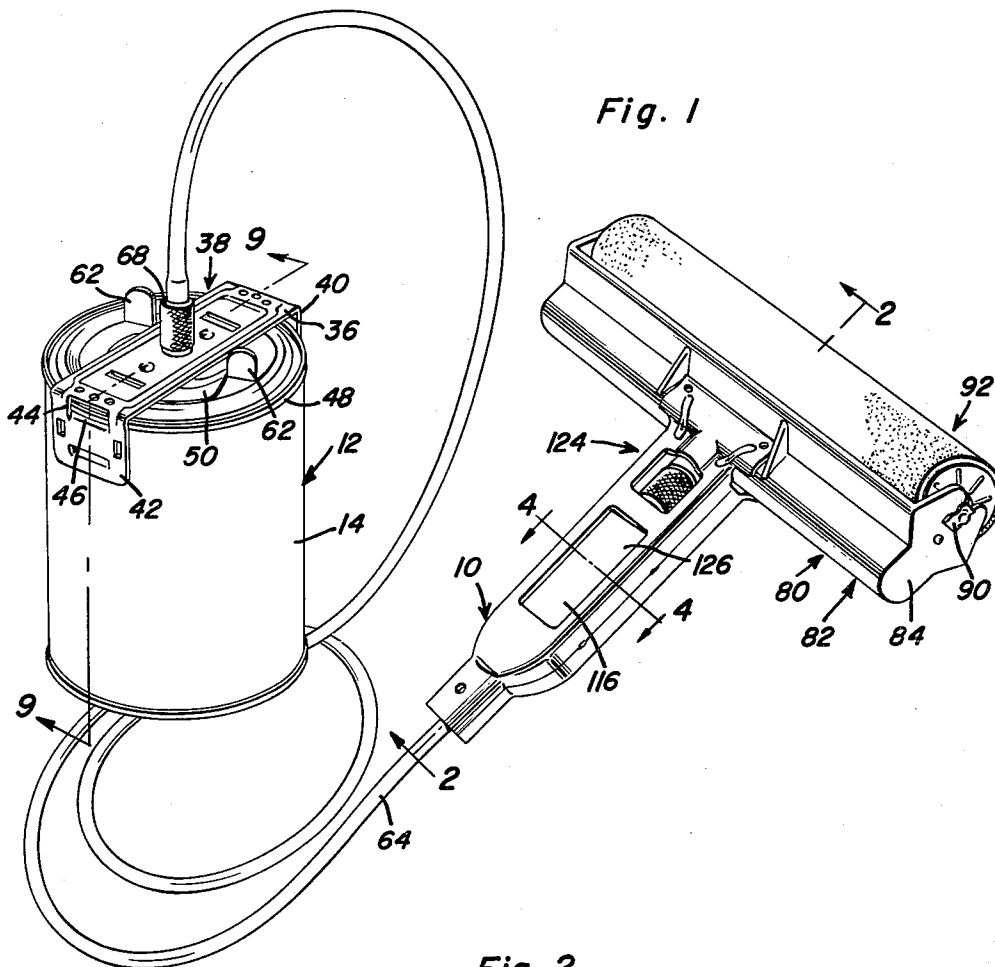
July 6, 1965

H. E. KARKUT
PAINT APPLICATOR

3,192,554

Filed Oct. 4, 1962

3 Sheets-Sheet 1



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Fig. 4

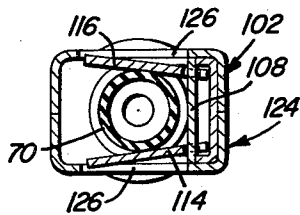


Fig. 3

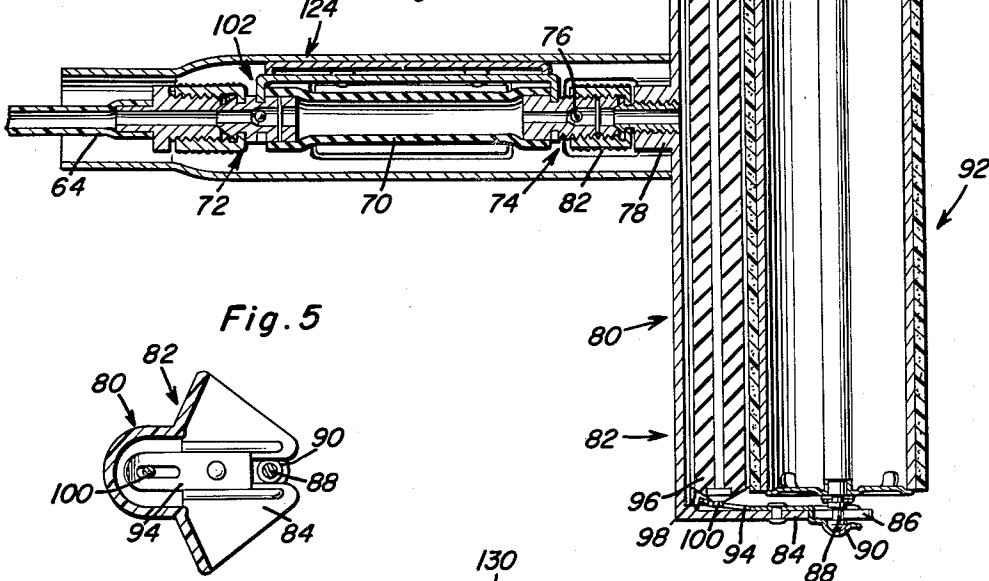


Fig. 5

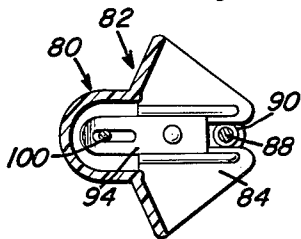


Fig. 6

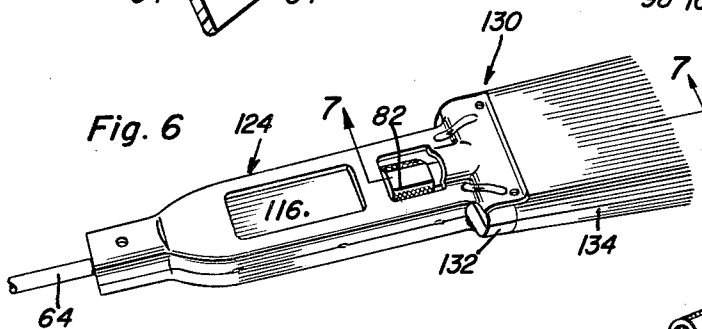


Fig. 7

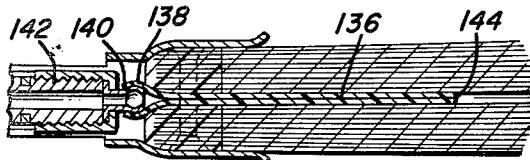
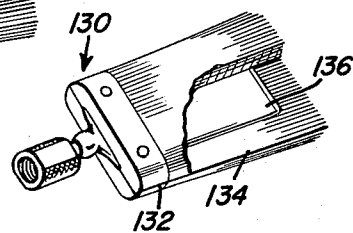


Fig. 8



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Fig. 9

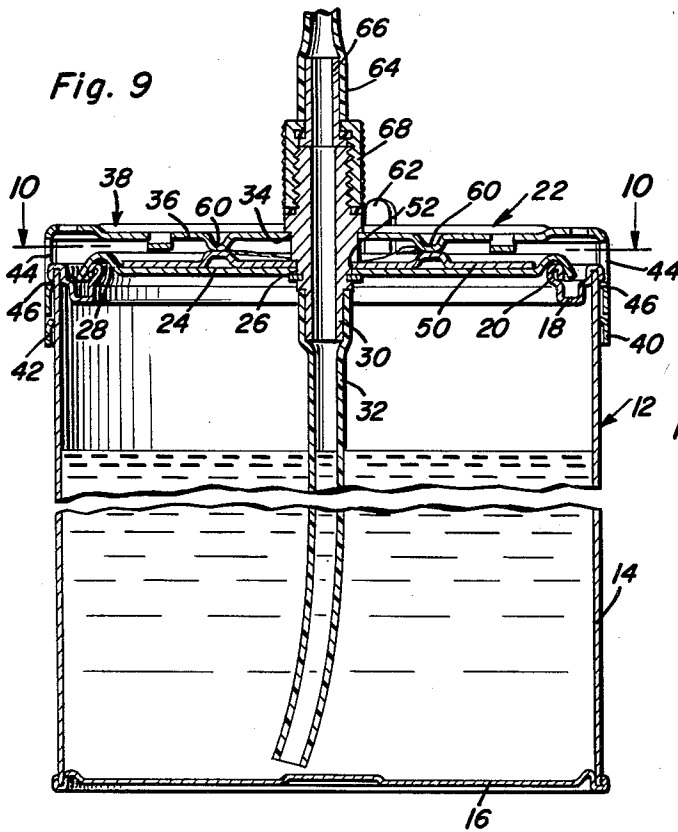


Fig. 10

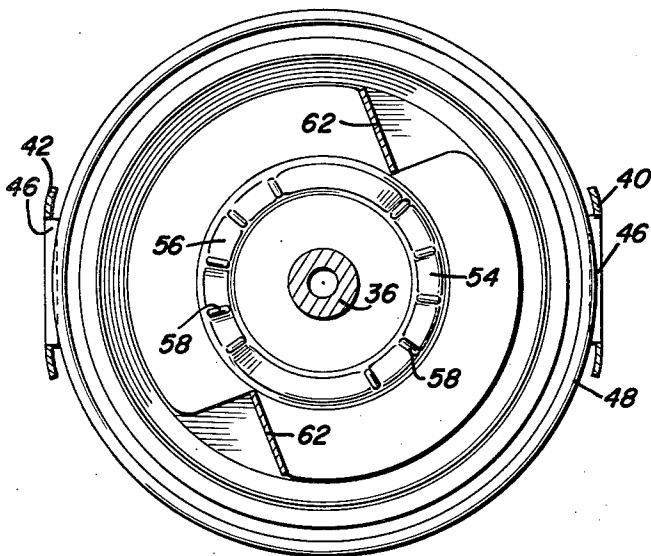
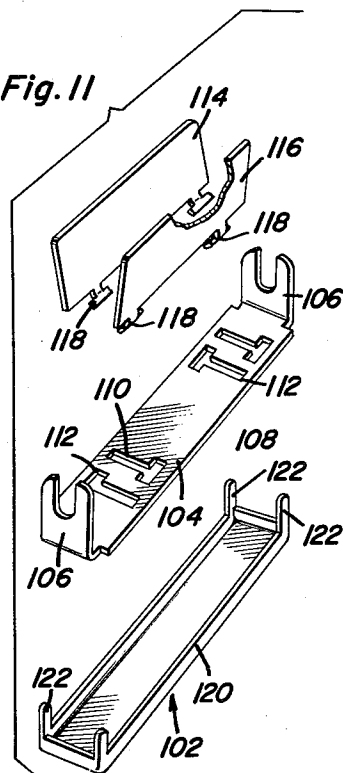


Fig. 11



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3,192,554

PAINT APPLICATOR

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Henry E. Karkut, Inc., a corporation of New Jersey
Filed Oct. 4, 1962, Ser. No. 228,352
3 Claims. (Cl. 15—573)

This invention relates to a novel and useful apparatus designed primarily to provide a means whereby paint may be dispensed directly from the can in which it is marketed and applied to a surface which is to be coated thereby.

This invention comprises an improvement of the invention disclosed in my copending U.S. application, Serial No. 135,230, now Pat. No. 3,135,005. The apparatus of the instant invention includes a closure cover assembly which is adapted to be secured to the open end of a paint can in place of the conventional closure cover of the can and the apparatus includes a pump and conduit means having one end disposed within the paint can closed by means of the closure cover assembly. The other end of the conduit has an applicator secured thereto which is provided with a reservoir for containing a supply of paint. Therefore, it may be seen that the apparatus of the instant invention is fully capable of providing a means whereby substantially the entire quantity of paint marketed in a paint can may be dispensed from the latter and applied to a surface which is to be coated by the paint without pouring the paint from the paint can into a separate receptacle for subsequent application to an applicator which is then to be utilized in spreading the paint on the surface to be painted.

Although apparatuses for achieving the same purpose have been heretofore designed, the apparatus of the instant invention has many improvements including the provision of an improved closure cover for a paint can, an improved reservoir type applicator, and an improved pump for pumping paint from the paint can into the reservoir of the applicator. Further, the reservoir-type applicator of the instant invention is provided with a handle and the paint pump portion of the apparatus is constructed in a manner whereby it may be incorporated into the handle construction for the applicator. Still further, one form of paint applicator of the instant invention is of the roller type and includes improved means whereby paint from the paint reservoir of the applicator is transferred to the paint applying roller.

The main object of one non-elected embodiment of this invention is to provide an apparatus as hereinbefore set forth including an improved paint can closure cover provided with means whereby the closure cover assembly may be securely fixed to the open end of a paint can with the closure cover portion of the assembly in overlying relation with the open end of the can without the closure cover portion being disposed in fluid-tight sealing engagement with the portions of the paint can defining the open end thereof.

A further object of this invention as disclosed in the elected embodiment is to provide an apparatus in accordance with the preceding object including a reservoir-type of paint applicator including an application roller with means being provided in the applicator for applying paint from the reservoir to the application roller in a novel and advantageous manner.

Yet another object of a non-elected embodiment of this invention is to provide an apparatus including a flexible conduit for conveying paint from a paint can closed by means of the closure cover assembly to the reservoir of the applicator and provided with pump means constructed in a manner whereby the pump means may be secured in the fluid conduit at any point therealong.

A still further object of a non-elected embodiment of this invention is to provide a paint applicator including a

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handle constructed in a manner whereby the paint pump may be housed within the applicator handle.

A final object to be specifically enumerated herein is to provide an apparatus in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the apparatus shown operatively connected to a conventional form of paint can;

FIGURE 2 is an enlarged fragmentary sectional view taken substantially upon the plane indicated by the section line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken substantially upon the plane indicated by the section line 3—3 of FIGURE 2;

FIGURE 4 is an enlarged sectional view taken substantially upon the plane indicated by the section line 4—4 of FIGURE 1;

FIGURE 5 is a sectional view taken substantially upon the plane indicated by the section line 5—5 of FIGURE 3;

FIGURE 6 is a perspective view of a modified form of paint applicator;

FIGURE 7 is a fragmentary sectional view on somewhat of an enlarged scale and taken substantially upon the plane indicated by the section line 7—7 of FIGURE 6;

FIGURE 8 is a perspective view of a portion of the paint applicator illustrated in FIGURE 6 with portions thereof being broken away and shown in section;

FIGURE 9 is an enlarged fragmentary sectional view taken substantially upon the plane indicated by the section line 9—9 of FIGURE 1;

FIGURE 10 is a horizontal sectional view taken substantially upon a plane indicated by the section line 10—10 of FIGURE 9;

FIGURE 11 is an exploded perspective view of portions of the paint pump of the apparatus; and

FIGURE 12 is a plan view of the roller applicator shown with a rigid handle extension secured thereto.

Referring now more specifically to the drawings the numeral 10 generally designates the apparatus or applicator assembly of the instant invention.

With attention first directed to FIGURES 1, 9 and 10 in particular, there will be seen a conventional type of paint can generally referred to by the reference numeral 12 including cylindrical side walls 14, a circular bottom wall 16 and an annular partial top wall 18. The annular partial top wall 18 includes an annular sealing bead 20 and the conventional closure (not shown) for the can 12 is provided with an annular groove adapted to snugly receive the annular sealing bead 20 upon engagement with the partial top wall of the can 12.

The apparatus 10 includes a closure cover assembly generally referred to by the reference numeral 22 and it may be seen from FIGURE 9 of the drawings that the closure cover assembly 22 includes a closure disk 24 which is centrally apertured as at 26. The outer periphery of the closure disk 24 is provided with a circumferentially extending annular groove 28 which snugly receives the annular sealing bead 20. In addition, it may be seen that a cylindrical fitting 30 is secured through the aperture 26 and that a short length of flexible conduit 32 has one end secured to the portion of the fitting 30 projecting downwardly through the aperture 26 while the remote end of

the conduit 32 terminates a spaced distance from the bottom wall 16. It is, of course, to be understood that the free end of the conduit 32 may rest upon the bottom wall and also that the conduit 32 may be of a length so that it is laterally deflected at its lower end and terminates immediately adjacent the juncture of the bottom wall 16 with a portion of the cylindrical side walls 14.

The fitting 30 is also received through an aperture 34 formed in the bight portion 36 of an inverted U-shaped container anchor generally referred to by the reference numeral 38. The container anchor 38 includes a pair of depending legs 40 and 42 and from a comparison of FIGURES 1 and 9 of the drawings it may be seen that the depending legs 40 and 42 are each provided with an opening 44 with a portion of the corresponding leg defining each opening being struck laterally inwardly as at 46 to form a retaining lip engageable beneath the bead 48 projecting outwardly of the cylindrical side walls 14 of the can 12 defined by the juncture of the partial top wall 18 with the upper ends of the cylindrical side walls 14.

The distance the retaining lips 46 are disposed below the bight portion 36 is such that the engagement of the container anchor 38 with the can 12 will correctly position the sealing disk 24 in loose engagement with the annular sealing bead 20. However, from FIGURES 1 and 9 of the drawings it may be seen that a circular cam plate 50 is secured to the upper surface of the sealing disk 24 and that the cam plate 50 is apertured as at 52 for receiving the fitting 30 therethrough. In addition it may be seen that the cam plate 50 includes a pair of arcuate wedge ramps 54 and 56 having detents 58 spaced longitudinally thereof. The bight portion 36 has a pair of downwardly directed projections 60 which are registrable with the cam ramps 54, 56 and are receivable in the detents 58. Still further, the cam plate 50 includes a pair of laterally struck thumb abutments which are disposed in diametrically opposite relation and may be engaged by the thumb of the user to effect rotation of the cover disk 24 relative to the container anchor. In addition, the thumb abutments 62 also comprise steps engageable with the bight portion 36 for limiting rotation of the closure disk 24 relative to the container anchor 38.

In operation, the closure disk 24 is first rotated to a position relative to the container anchor 38 with the projections 60 engaged with the lower portions of the cam ramps 54 and 56. Then, the container anchor 38 is secured over the open end of the can 12 in an obvious manner with the retaining lips 46 engaging the underside of the bead 48 at positions disposed diametrically opposite each other. Then, the closure disk 24 may be rotated relative to the container anchor 38 whereupon the engagement of the projections 60 with the higher portions of the cam ramps 54, 56 will tend to flex the bight portion 36 and thereby effect a downward thrust of the closure disk 24 into fluid-tight sealing engagement with the annular sealing bead 20 of the partial top wall 18.

One end of a flexible conduit 64 is secured to a nipple 66 and it may be seen that the nipple 66 is secured to the upper end of the fitting 30 by means of a coupling element 68.

With attention now directed to FIGURE 3 of the drawings it may be seen that a removable and deformable section 70 of a conduit is secured to the end of the conduit 64 remote from the fitting 30 by means of a one-way check valve assembly referred to in general by the reference numeral 72. In addition, the end of the section 70 remote from the one-way check valve assembly 72 is secured to a second one-way check valve assembly generally referred to by the reference numeral 74. It may be seen that each of the check valve assemblies 72 and 74 includes a ball check valve 76 and that the check valve assembly 74 is secured to the inlet neck 78 of a paint applicator generally referred to by the reference numeral 80 by means of a coupling member 83.

The paint applicator 80 includes a trough-like reservoir

generally referred to by the reference numeral 82 into which the outlet end of the inlet neck 78 opens and the trough-like reservoir 82 includes a pair of opposite end walls 84 which are substantially identical.

The free ends of the end walls 84 are bifurcated as at 86 and receive between the furcations thereof the remote ends of an axle 88 which is secured in position by means of a spring clip 90 carried by the corresponding end walls 84. The axle 88 rotatably journals a roller applicator referred to in general by the reference numeral 92.

From a comparison of FIGURES 2, 3 and 5 of the drawings it may be seen that the spring clips 90 include slotted arcuate end portions 94 which are disposed inwardly of the end walls 84 and rotatably journal the opposite ends of a transfer roller 96. It may be seen that the opposite ends of the transfer roller 96 are each conical in shape as at 98 and that they each include a stub axle portion 100 which is rotatably and slidably received in the corresponding slotted end portion 94. The slotted end portions 94 of the spring clips 90 are provided so as to resiliently urge the transfer roller 96 into rolling contacting engagement with the application roller 92.

With attention now directed to FIGURES 3, 4 and 11 of the drawings it may be seen that a pump assembly generally referred to by the reference numeral 102 is provided and includes a generally U-shaped brace 104 having a pair of legs 106 interconnected at corresponding ends by means of a bight portion 108. The free ends of the legs 106 snugly receive the check valve assemblies 72 and 74 and the bight portion 108 is provided with two pairs of T-shaped openings 110 and 112. A pair of arms 114 and 116 are provided and each includes a pair of T-shaped projections 118 which are receivable in the openings 110 and 112 respectively. Accordingly, it may be seen that the edges of the arms 114 and 116 from which the projections 118 extend are pivotally secured to the bight portion 108 for limited swinging movement of the free edges of the arms 114 and 116 toward and away from each other between two limit positions. In addition, the projections 118 may be slid longitudinally of the corresponding openings and therefore the pivoted edges of the arms 114 and 116 are also movable toward and away from each other relative to the bight portion 108. The arms 114 and 116, when spread apart, snugly receive the section 70 and a closure cover 120 having bendable tabs 122 may be secured over the surface of the bight portion 108 remote from the surface thereof from which the arms 114 and 116 project in order to enclose the projections 118.

From FIGURE 2 of the drawings it may be seen that the inlet neck 78 and adjacent portions of the reservoir 82 are constructed in a manner to be releasably engaged by the bifurcated end portion of a rigid tubular handle generally referred to by the reference numeral 124. The tubular handle 124 includes a pair of opposite side openings 126 with which the arms 114 and 116 are registered and the end of the tubular handle 124 remote from the reservoir 82 completely encloses a check valve assembly 72 of the adjacent end of the conduit 64.

As can best be seen from FIGURE 12 of the drawings, a rigid extension handle 128 is provided and may have the conduit 64 passed therethrough and one end thereof engaged within the end of the tubular handle 124 remote from the reservoir 82.

With attention now directed to FIGURES 6 through 8 of the drawings, there will be seen a modified form of paint applicator generally referred to by the reference numeral 130 which is in the form of a brush head 132 including a plurality of brush bristles 134. A hollow and flexible reservoir envelope 136 is secured between adjacent sections of bristles 134 and includes an inlet neck 138 with which a nipple 140 is engaged. The nipple 140 is carried by a coupling member 142 which may be secured to the check valve assembly 74 in a manner similar to the manner in which the coupling member 82

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is secured to the check valve assembly 74. Additionally, the head 132 of the applicator 130 is adapted to be frictionally gripped between the bifurcated end of the tubular handle 124. Accordingly, it may be seen that the applicator 130 may be interchanged with the applicator 80.

The end of the reservoir envelope 136 remote from the inlet neck 138 is open as at 144 and as the bristles 134 are deflected upon movement of the applicator 130 across a surface to be painted, the reservoir envelope 136 is squeezed thereby causing paint contained therein to be discharged from the open end thereof adjacent the free end of the bristles 134.

With attention again directed to FIGURES 3 and 11 of the drawings it will be noted that the bifurcated legs 106 of the U-shaped brace 104 could be utilized to releasably embrace a section of conduit similar to section 70 extending therebetween. In this manner, as long as check valve assembly similar to the check valve assemblies 72 and 74 are provided and spaced longitudinally along the conduit section such as section 70, the paint pump could be removably secured to any portion of the section of conduit extending between the pair of check valve assemblies as desired. Additionally, the bifurcated ends of the legs 106 could be provided with keyhole openings thereby lessening the possibility that a removable paint pump assembly would become disengaged with a section of deformable conduit such as section 70.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A roller applicator for applying liquid to a surface to be coated, said roller applicator comprising an open top reservoir, a transfer roller, means rotatably supporting said transfer roller with at least the lower portion of said roller disposed below the normal liquid level of said reservoir, an application roller also rotatably supported from said reservoir for rotation about an axis disposed above the normal liquid level of said reservoir, said means rotatably supporting said transfer roller including means yieldably urging said transfer roller into engagement with said application roller, said reservoir

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including upstanding end walls, said urging means comprising an elongated longitudinally bowed spring having a longitudinal slot formed therein secured at its upper end portion to each end wall of said reservoir and curving downwardly and inwardly toward each other at their lower ends, said transfer roller including generally conical ends with stub axle portions projecting axially outwardly of the apices of said conical end portions and rotatably and slidably received in said slot, the curved lower ends of said spring normally yieldingly camming said conical end portions upwardly to thereby shift said transfer roller toward engagement with said application roller.

2. A roller assembly comprising a pair of opposing connected supports, a pair of elongated and longitudinally bowed springs secured to said supports at one pair of corresponding ends with the other pair of corresponding ends curving toward each other, said springs each having a longitudinal slot formed therein, a roller, the opposite end portions of said roller being generally conical and including stub axle portions projecting axially outwardly of said conical end portions and rotatably and slidably received in said slots, said other pair of ends of said springs normally yieldingly camming said roller toward said one pair of ends of said springs.

3. The combination of claim 2 wherein said one pair of corresponding ends of said springs include means defining aligned journal portions, a second roller extending between and journaled by said journal portions, the opposing peripheral portions of said rollers being disposed in rolling contacting engagement with each other.

References Cited by the Examiner

UNITED STATES PATENTS

2,357,763	9/44	Pratt	15—562
2,536,291	1/51	Kaitul	15—573
2,585,334	2/52	McCauley	220—55
2,620,498	12/52	Jockers et al.	15—573
2,679,947	6/54	Piker et al.	220—55
2,785,425	3/57	Lenk	15—547 X
2,820,978	1/58	Brady	15—573
2,932,043	4/60	Bischoff	15—547 X
2,956,507	10/60	Hutchinson	103—148
2,960,040	11/60	Bischoff	103—148
2,964,769	12/60	Mercereau	15—547

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