

[54] FOUNTAIN LIQUID APPLICATOR

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[51] Int. Cl. **B44d 1/00, A46b 11/00**

[58] Field of Search **401/270-281, 401/287, 288, 197**

[56] **References Cited**

UNITED STATES PATENTS

1,580,799	4/1926	Anzalone	401/281
2,823,401	2/1958	O'Higgins	401/280
2,916,755	12/1959	DeBozzay	401/197
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[57] **ABSTRACT**

There is disclosed a pressured liquid applicator which feeds the liquid to the applying surface in an even flow and at the control of the operator. In each embodiment there is a plurality of delivery tubes, and each tube has a positive open-close operation so that substantially the same force is applied to the liquid passing through each delivery tube, thus achieving the even distribution of the liquid. The actuation of the open-close operation is at the operator's hand, requiring a minimal disruption in the application of the liquid while the applicator surface is being resupplied. In several embodiments of the applicator, the pressure of the liquid being supplied is used to automatically return and maintain the applicator in the closed position unless the operator applies a positive action to open the applicator for resupply of the liquid.

1 Claim, 13 Drawing Figures

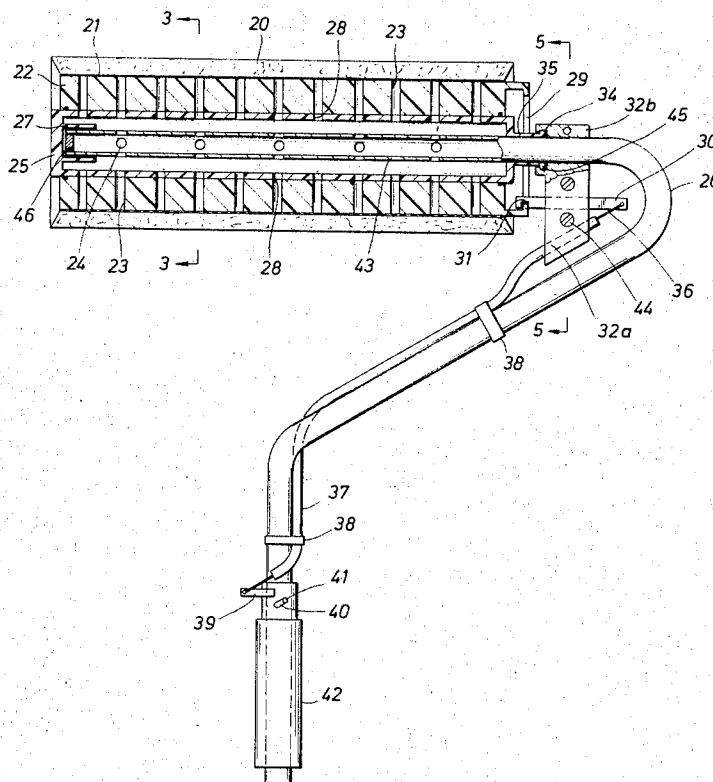
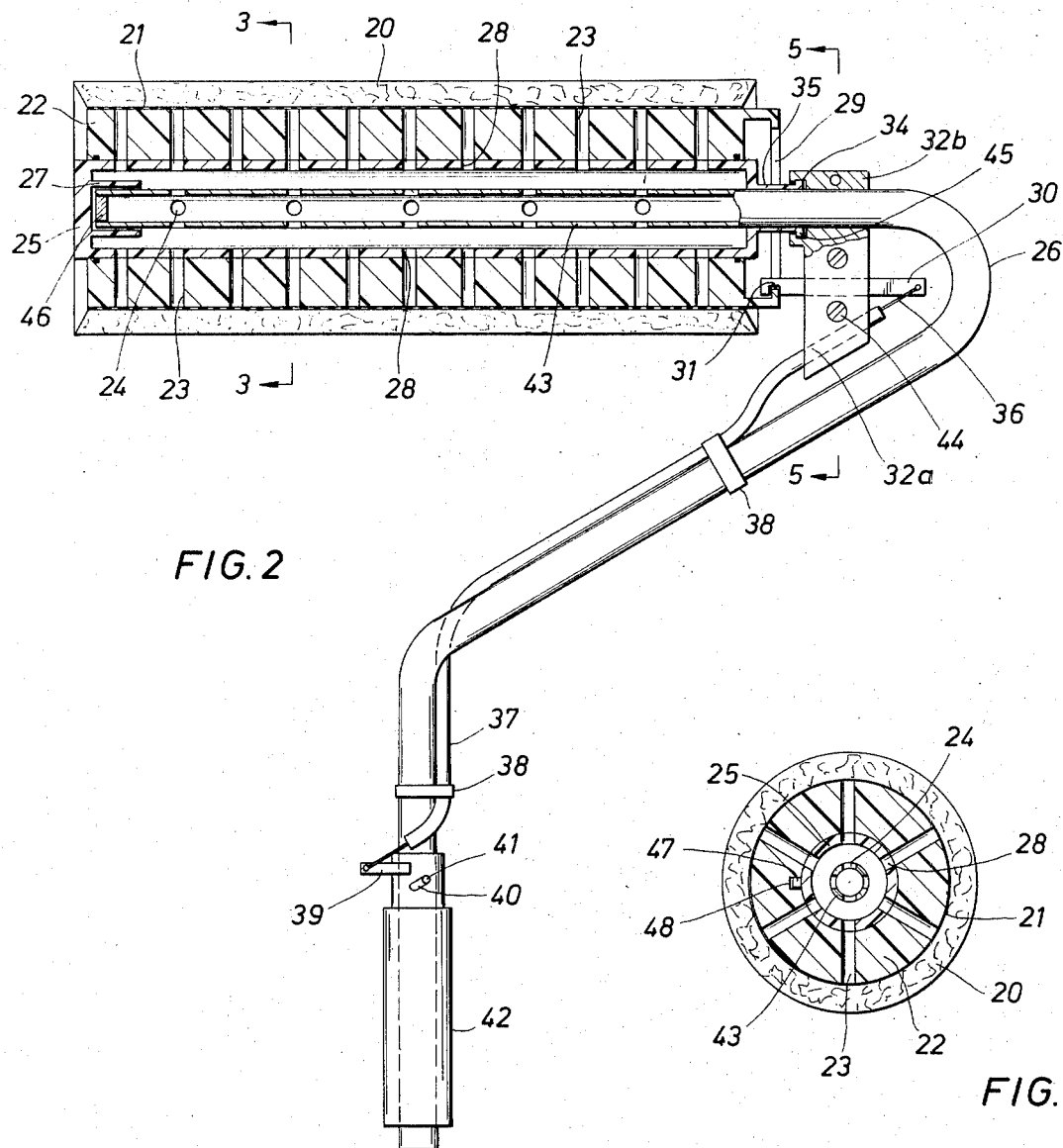
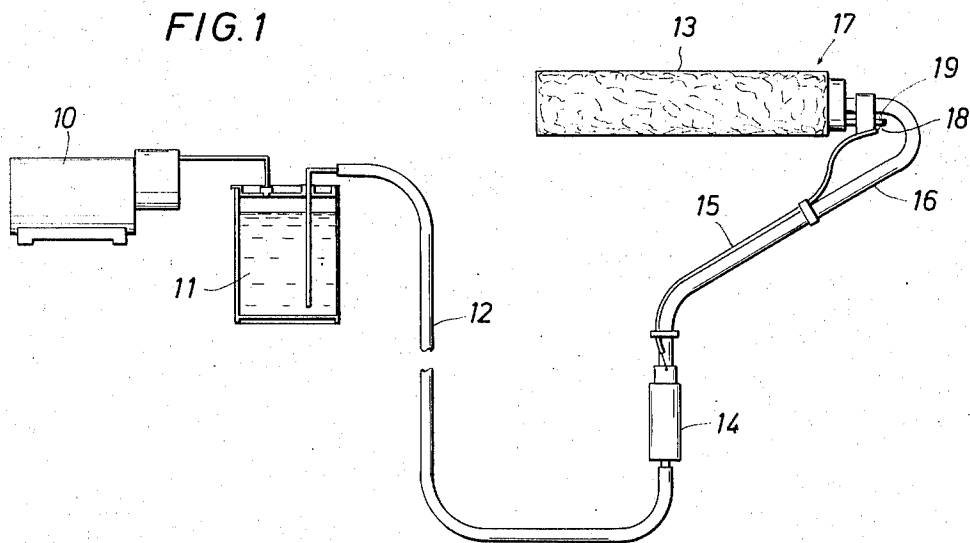


FIG. 1



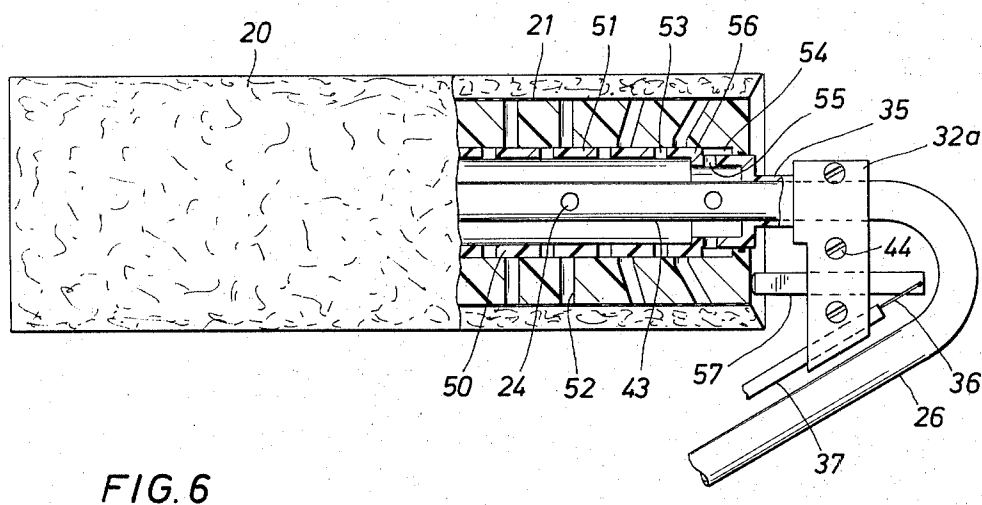
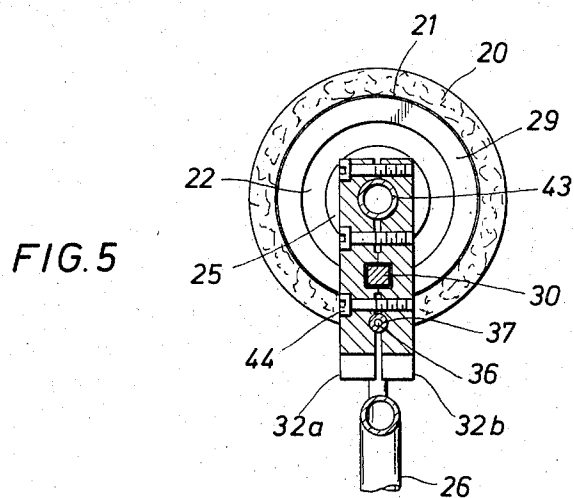
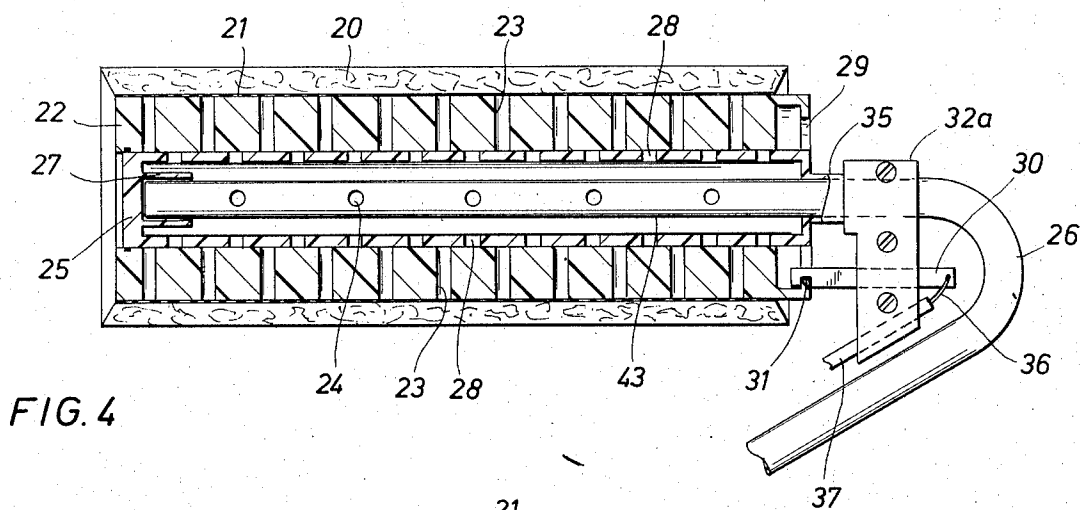


FIG. 7

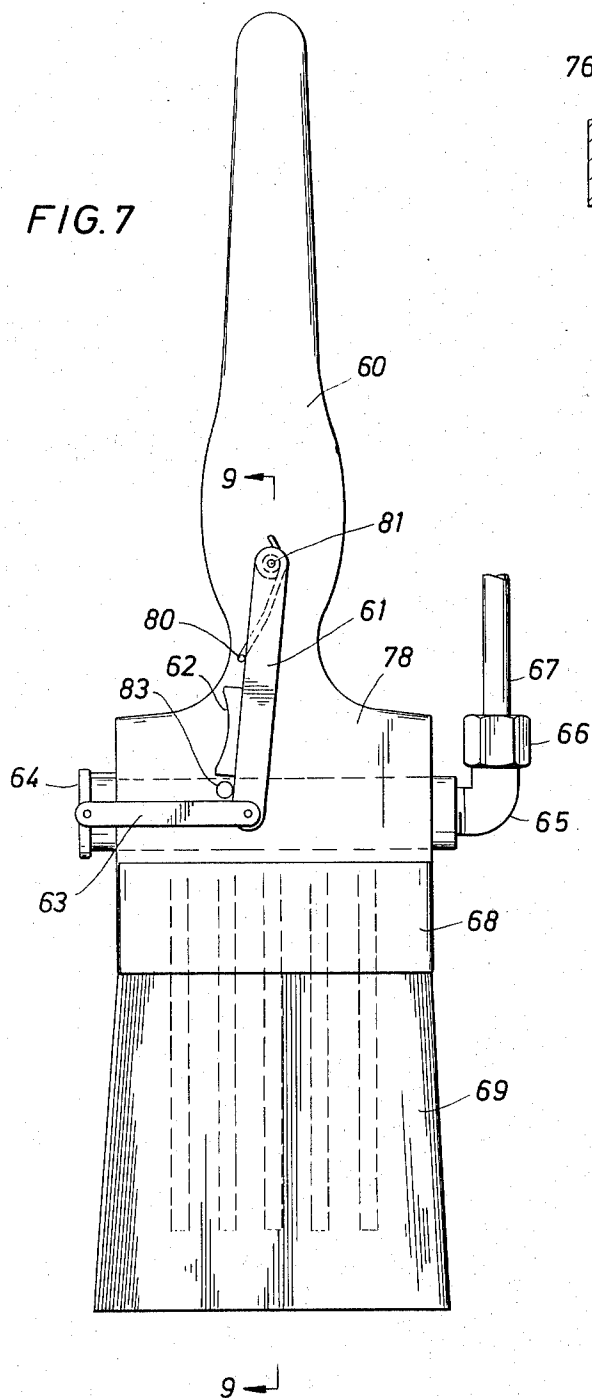


FIG. 8

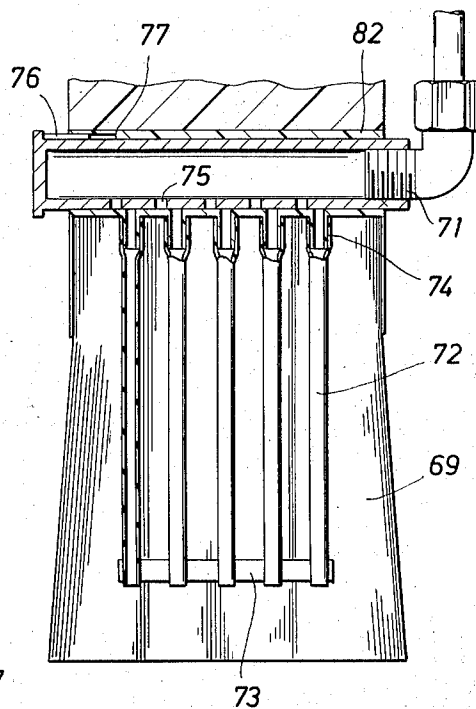


FIG. 9

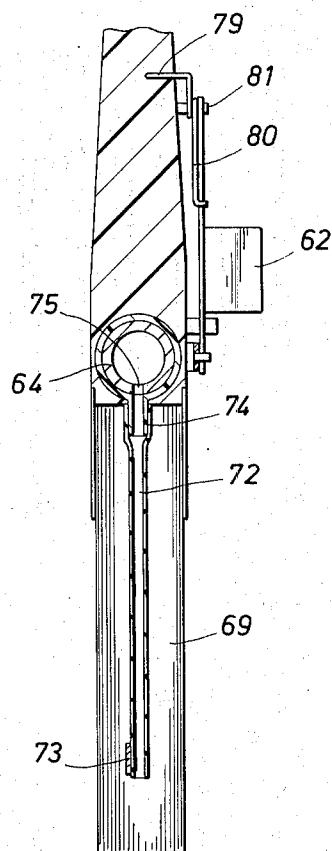


FIG. 10

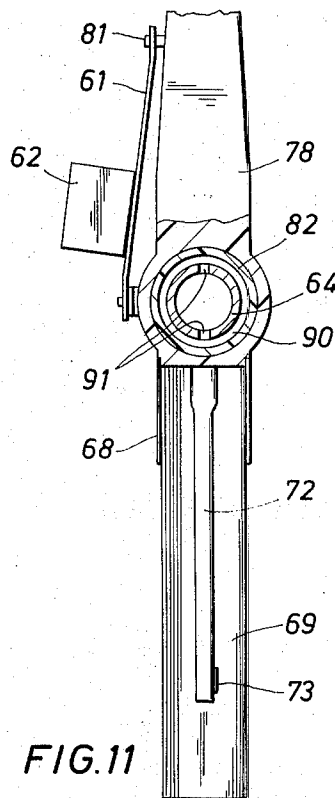
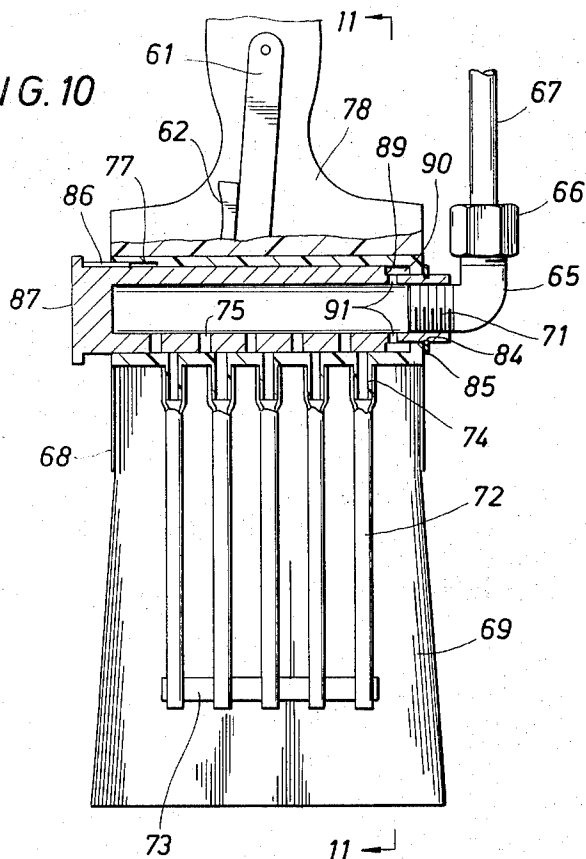


FIG. 11

FIG. 12

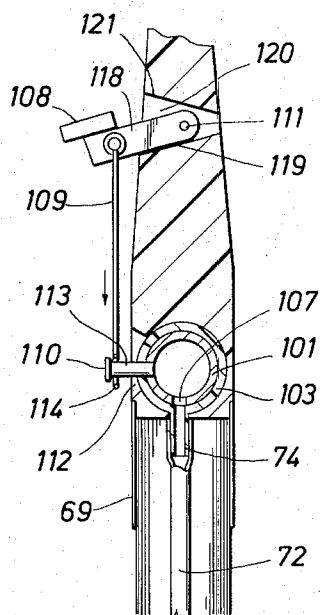
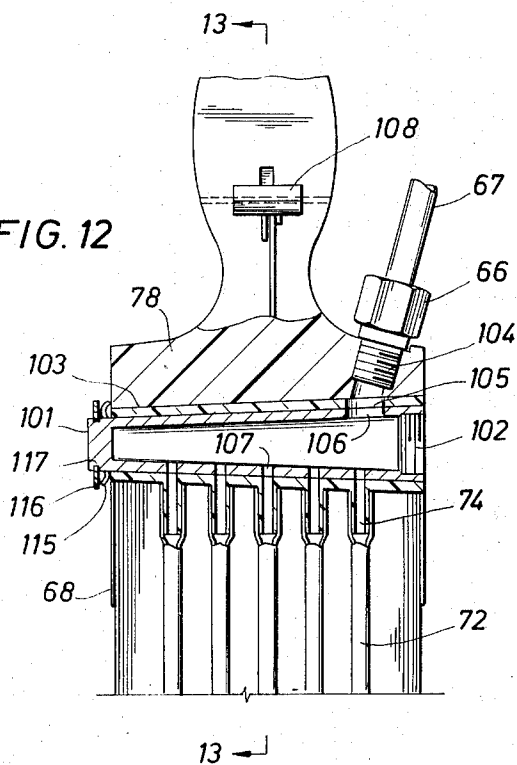


FIG. 13

FOUNTAIN LIQUID APPLICATOR

BACKGROUND OF THE INVENTION

The present invention discloses and claims means for applying a liquid to a surface in a continuous manner from a pressured reservoir. In particular, the present invention provides for an even flow of liquid to the applicator at intervals determined by the operator of the means.

The application of liquids, for example paint, to a surface has been and is still a high labor operation. The application of paint to structural surfaces such as homes, offices, industrial facilities, bridges and the like has not benefited from automation which has generally been paramount in reducing labor unit cost in industry.

There have been efforts to employ labor-saving and efficiency promoting devices. Probably one of the most efficient means of applying liquids, and paint in particular, to surfaces is by spraying. Pressurized systems have been extensively employed, particularly in commercial operations, and vibrational units are extensively employed in the home or by do-it-yourself hobbyists.

Spray painting has greatly increased the speed at which a liquid can be applied to a surface. However, spray painting has not been the panacea which would provide both a quality and quantity means of paint application. Because the paint in any spray system must be atomized, only a very small volume of paint is applied on each application. Also, the paint or other liquid being atomized must be adequately thinned; usually sprayed paint is of a thinner consistency than paint that is to be applied by brush or roller. The result then of employing spraying will mean that a large area can be rapidly covered with a very thin layer of paint. Spray paint, as a result, is usually carried out in a series of re-applications or coats. Sometimes as many as five coats are required in spray painting operations to obtain an adequate surface coating.

The requirement of multiple coats is a particular function of the very thin paint employed, which may run or disfigure on a surface. Since paint applied by means of rollers or brushes can have a greater thickness, that is, a higher concentration of paint pigment per liquid volume, such means of application provide a thicker coating of pigment, and usually only one or two coats or applications are required and are less likely to run because of the thickness of the material.

Spray painting has been found to be wholly unsatisfactory for painting porous surfaces such as masonry, concrete, brick, plaster, unprimed wood, pressed board and the like. The spray systems have not been found to be capable of delivering the volume of paint required to saturate pores in any reasonable period of time. Spray systems would appear to be the least efficient manner of painting such porous surfaces.

In addition to the disadvantages of spray painting described above, there is a more serious health hazard attached to spray painting, first in the particulate material, i.e., pigment which is so finely atomized that the entire atmosphere surrounding the operator of a spraying apparatus is saturated with the material being sprayed. To avoid serious physical damage from the free floating spray, respiratory masks are routinely em-

ployed by the operators. These masks serve adequately to remove the solid particulate material but are of little benefit in regard to the large quantities of solvent also present. Brushing or rolling the paint to a surface substantially reduces the amount of solvent in the atmosphere about the operator, and no mask is required since there is no particulate contamination of the atmosphere.

From a practical and aesthetic point of view, spray painting has been found unsatisfactory in residential use and office use because of the uncontrolled distribution of stray atomized particles of pigment. Spraying can leave unpainted surfaces, windows, plants and lawns in a speckled condition, which is a tedious task to clean up and which may prove harmful to plants.

For many applications, brushes and rollers are superior and desirable, as indicated hereinabove. Past innovators have sought means to improve the speed and efficiency of the application of liquids, particularly paint, by brushes and rollers.

As early as 1903 a painting machine was described by Grahn in U.S. Pat. No. 734,319, in which paint was forced from a pressured reservoir to a paint brush. The flow to the brush was controlled by a valve held in the closed position by a spring, so that the operator pressed a lever to release a desired amount of paint. The paint was released through a single delivery tube into a canvas distribution web spread through the center of the bristles of the brush.

The application of the paint from a single delivery tube into a single distribution means results in a very uneven distribution of the paint to bristles of the brush. Such an arrangement will operate in a more or less satisfactory manner, so long as the brush is held parallel to the earth and the structure to which the paint is being applied is substantially vertical. Even a very slight slant or alinement causing one end of the brush to be lower than the other will allow substantially all of the paint flowing into the brush to flow to the lower side. If this type of arrangement is to be used on an overhead application such as a ceiling, the paint distribution is erratic. The pressure is dissipated by the relative large body of paint contained in the single distribution element; thus, there would be little remaining force to get the paint to the bristle ends. The paint would tend to overflow the distribution element and flow back toward the brush handle.

Since Grahn's early patent a number of other fountain paint brushes have employed a single delivery means with a single distribution means, including, for example, Meyer et al. U.S. Pat. No. 821,879; Sevier U.S. Pat. No. 1,606,537; Kirch U.S. Pat. No. 418,054 and Kirch U.S. Pat. No. 3,503,691. Each of these later patents suffered from the defective performance of the single delivery and single distribution means of Grahn.

In addition to the disadvantages described above, there were other defective aspects of the prior art devices. The Meyer et al. brush in its static position was open to the paint reservoir. Thus, in order for Meyer et al. to stop the flow of paint to the brush, it was necessary for the operator to apply a positive pressure to a biased plunger. Any relaxation of this pressure by the operator, for example from fatigue or inadvertence, will result in an unwanted surge of paint until the pressure is reapplied to the biased plunger or the apparatus is shut off altogether.

Sevier employed a stop cock to open and shut the paint feed line to the distribution means. The particular arrangement taught by Sevier would result in very poor distribution of liquids to the bristles, since a short straight sleeve was employed for distribution.

Recently, Kirch devised a fountain paint brush connected to a pressured reservoir with a feed control that comprised a biased valve with a circumferential recess around the body of the valve so that the recess was normally out of alinement with the paint inlet conduit and the delivery line to the distributing means. By pressing the valve down, the circumferential recess becomes alined with the paint inlet conduit and the delivery line, allowing paint to feed to the brush.

In order to avoid interior leakage, Kirch subsequently patented a paint brush with a similar biased valve but with a flexible tube through which the paint flowed. The body of the valve pressed against the flexible tube in the closed position, deforming the tube and constricting the passage through the tube. When the button is depressed, the flexible tube opened and the paint flowed through to the brush. The flexible tube would have a limited life.

Hainsey described in U.S. Pat. No. 1,342,211 a different configuration on the distribution means. Instead of a single unit, he employed a plurality of flexible distribution tubes extending from a chamber. Paint is admitted into the chamber and hence into the flexible tubes when a spring-biased valve is depressed so as to aline a passage in the valve with a paint inlet tube and the delivery tube. When the valve is released, it is moved out of alinement with the inlet conduit and the delivery line, shutting off the flow of paint. Hanisey's arrangement was to resupply the chamber in the brush and not to provide a pressure system. The chamber is open to the delivery tubes which would provide a very uneven flow of paint to the bristles.

Another delivery system was shown by Sacks in U.S. Pat. No. 1,716,980. In that patent the feed to bristles of the brush from tubes extending to the bristles was controlled by a manually operated shutter located in the bristles at the end of the tubes. The tubes of necessity were rigid, and the entire operating mechanism was located in contact with the paint, thus increasing the possibility of its becoming seized by paint and making it difficult to clean.

Roller type liquid applicators have been found to be more useful than the brush in some situations. For example, it has been found that brushes used to paint masonry or brick have their bristles wear out at an accelerated rate compared to use on other types of surfaces. The roller, however, is not worn by rough surfaces since it does not resist as it goes across the surface but conforms itself to that surface. In the past in order to use roller applicators, it was necessary to have an extra thick exterior pile on the roller to hold sufficient quantities of paint to fill the pores of the porous masonry or cement.

The use of a fountain liquid roller applicator may not require the extra thick pile since a continuous supply of paint is provided to the roller.

An early attempt to provide a continuous supply of paint to a roller applicator was that shown by De Bozzay in U.S. Pat. No. 2,916,755. De Bozzay provided a paint reservoir within the roller itself. The paint is dispensed to the outer surface of the roller by alining openings in slidable bars with openings in the paint res-

ervoir. The openings are kept out of alinement in the closed position by a spring which displaces a plate operably associated with the bars. De Bozzay depends on gravity to feed the paint from the reservoir to the surface of the roller, which does not provide an even feeding of the paint.

Bischoff described an invention in U.S. Pat. No. 2,932,043 which was purported to be an advance over the other types of roller applicators. The Bischoff roller comprised a perforated outer drum and a centrally mounted shaft with several holes therein, said shaft being connected to a reservoir. The paint was supplied to the shaft when the operator squeezed a bulb pump. The amount of pressure applied by the operator could vary and would also result in an inconsistent and uneven flow of paint to the inner chamber of the roller. The particular positioning of the paint delivery means at some distance from the openings in the outer drum does not result in a pressurized feed to the outer surface of the drum but is a gravity feed, just as in the De Bozzay device. Clark et al. U.S. Pat. No. 3,231,151 and Stebbins U.S. Pat. No. 3,539,268 both show roller applicators being pressured but supplying a continuous flow of paint to the roller surface. Both devices feed paint from the centrally located shaft of the roller. Stebbins in particular provides a very inadequate means of supplying the paint to the surface of the roller since only one opening centrally located in the shaft is taught.

The present invention provides a number of advantages over the fountain liquid applicators of the past. One advantage of the present applicator is that the liquid supply is pressurized during the operation of the applicator. Another feature of the present invention is the distribution of the liquid to the applicator in substantially equal amounts and under substantially equal conditions. A particular feature of the present invention is the diminution of the effect of gravity on the operation of the applicator. Another feature of the present invention is the rapid and uniform supply of any quantity of liquid desired by the operator. Another feature of the invention is the ease with which the operator may operate the fountain liquid applicator. A further advantage of the present applicator is the use of a minimum number of moving parts which would be subject to becoming gummed up. A further advantage of the present invention is avoidance of intricate arrangements of elements having very critical requirements of operation, to further avoid jamming and plugging of the applicator.

A particular aspect of the brush applicator is the use of a plurality of liquid distribution elements. A further aspect of the brush applicator is the use of flexible distribution elements.

A particular feature of several embodiments of the present invention is the use of the liquid pressure to maintain the applicator in the off position and to return the applicator from the on position to the off position automatically.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an overall view in elevation of one exemplary embodiment of the invention ready for use, showing a roller applicator attached by a tube to a liquid reservoir which is connected to an air pump.

FIG. 2 is a longitudinal cross sectional view of one embodiment of a roller applicator in the open position.

FIG. 3 is a transverse cross sectional view taken along line 3—3 of FIG. 2.

FIG. 4 is a longitudinal cross sectional view of the embodiment shown in FIG. 2, in the closed position.

FIG. 5 is a transverse cross sectional view taken along line 5—5 of FIG. 2.

FIG. 6 is a fragmentary longitudinal cross sectional view of an alternate embodiment for a roller applicator.

FIG. 7 is a view in elevation of a brush applicator.

FIG. 8 is a fragmentary longitudinal cross sectional view of the brush applicator shown in FIG. 7.

FIG. 9 is a transverse cross sectional view taken along line 9—9 of FIG. 7.

FIG. 10 is a fragmentary longitudinal cross sectional view of a modified brush applicator.

FIG. 11 is a transverse cross sectional view taken along line 11—11 of FIG. 10.

FIG. 12 is a fragmentary cross sectional view of an alternate embodiment of the brush applicator.

FIG. 13 is a transverse cross sectional view taken along line 13—13 of FIG. 12.

SUMMARY OF THE INVENTION

Basically the present invention concerns a fountain liquid applicator attached to a pressurized reservoir of liquid. The system is maintained in an off or closed posture until the operator changes the system to the on or open position, at which time the pressurized liquid flows onto the liquid applying portion, brush bristles or roller surface, as the case may be, of the applicator. The liquid is distributed very evenly throughout the applicator and onto the applying portion of the applicator. The even application of the liquid to the applying portion of the applicator is carried out by supplying the pressurized liquid into a tubular member having a plurality of perforations along its surfaces. The tubular member is seated in either the handle of a brush or in a roller, there being a plurality of tubes connecting the surface where the tubular member is seated with the bristles of the brush on the surface of the roller. The perforations in the tubular member are arranged so that they can be aligned with the tubes and when so aligned the pressurized liquid flows to the bristles of the brush or the surface of the roller.

Briefly stated, the present invention is a fountain liquid applicator which comprises an inner perforated tubular member located in a housing, said tubular member being repositionable in said housing, said housing having a liquid applying portion and a plurality of tubes communicating with said inner perforated tubular member and said liquid applying portion, the perforations in said inner perforated tubular member being adapted to be brought into cooperative alignment with said tubes, and means to supply a pressurized liquid into said inner perforated tubular member. The term "tubular" is not used here in its limited sense but is understood to include elongated hollow structures having other than a cylindrical configuration, such as conical.

One particularly useful purpose for the present invention is the application of paint to surfaces. The term "paint" is meant to include paint, varnish, lacquer, plastic coatings, primers and the like. Furthermore, the

present invention is not limited to paint but may be used to apply any liquid desired such as wax, insecticide, fungicides, cleaning solutions, oils, adhesives, and the like.

The brush bristles may be of any conventional or suitable materials such as nylon, horse hair, camel hair, polyesters and the like. Similarly, the outer surface of the roller may be derived from animal, vegetable or synthetic sources, including sponge or sponge-like materials.

DETAILED DESCRIPTION OF THE INVENTION

The particular features and advantages of the present invention as well as its mode of operation will be more fully understood from the following description of the drawings.

FIG. 1 shows an applicator having a roller 13 supported on a roller arm 16 and a rotatable handle 15 operationally connected via cable 18 passing through cable cover 15 to activating arm 19, whose function will be described in more detail in subsequent drawings. A tube 12 is attached to the upper end of roller arm 16, which is hollow. Tube 12 is connected to a liquid reservoir 11 which, in turn, is connected to a source of compressed air 10. Liquid from reservoir 11 is supplied under pressure through tube 12, hence into and through roller arm 16 into liquid applicator 17 where, by means of the manipulation of handle 14, the operator controls the flow of liquid onto the surface of roller 13.

FIG. 2 shows one embodiment of a roller-type applicator which comprises a cylindrical outer housing 22 having radially placed conduits 23 situated along its horizontal axis. The conduits 23 communicate with the outer surface covering comprising a pile 20 and a cover base 21 to which the pile is attached. Located internally along the longitudinal axis of cylindrical outer housing 22 is inner tubular member 25. Inner tubular member 25 has openings 28 which, as shown in FIG. 2, are alignable with the conduits 23 of cylindrical outer housing 22. Cylindrical outer housing 22 and inner tubular member 25 are mounted in such a manner as to be relatively repositionable in regard to each other along their horizontal axes. Cylindrical outer housing 22 and tubular member 25 rotate about their horizontal axes as a single unit, relative rotation to each other being prevented by key 47, located on tubular member 25, which is engaged in keyway 48 in cylindrical outer housing 22, as shown in FIG. 3.

Internally located in inner tubular member 25 is a bushing 27 into which is seated a straight portion 43 of tube 26 having plug 26 in the end thereof. Opposite said bushing 27, straight portion 43 passes through a neck portion 35 of inner tubular member 25, which is tightly fitted to the outer surface of tube 26 in order to form a seal against leakage of liquids from inner tubular member 25, yet not so tight as to prevent the rotation of inner tubular member 25 about the surface of portion 43 of tube 26 which serves as an axle for the roller. Along straight portion 43 of tube 26, located within inner tubular member 25, are a number of openings 24 which are designed to allow liquid to pass into inner tubular member 25 and hence through openings 28 and conduit 23 to the surface of the roller.

The inner tubular member 25 mounted on portion 43 of tube 26 is held in place by means of an annular shoulder 45 at the end of neck portion 35 which is

seated into an annular notch 34 in a bracket, which is composed of a front 32a and a back 32b. The bracket 32a, 32b is held in place by machine screws 44 which clamp it in place about tube 26. Movably positioned through bracket 32a, 32b is rod 30 which is operationally connected to cylindrical outer housing 22 by means of a notch 31 which fits over ring 29, which is a portion of cylindrical outer housing 22. Arm 30 is attached by means of cable 36 passing through cable cover 37 to arm 39 which is fixedly mounted on rotatable handle 42. Cable cover 37 is held in place by brackets 38. The spiral slot 41, located in handle 42, rides on cam pin 40.

FIG. 2 shows an open configuration; that is, if there were a pressurized fluid flowing into tube 26, it would be allowed to pass into portion 43 of tube 26, through openings 24, into the inner tubular member 25, and out through openings 28 and conduits 23 to the surface of the roller, thus saturating the pile 20. This configuration is obtained by rotation of handle 42 in a clockwise direction, causing it to move along the path of spiral slot 41 as directed by cam pin 40. In so doing, the rigidly mounted arm 39 pushes cable 36 to the right, moving arm 30 to the right also. The slot 31 engaged with ring 29 draws the cylindrical outer housing 22 to the right, aligning the conduits 23 with the openings 28 in inner tubular member 25.

In order to place the apparatus into a closed position, the handle 42 is turned counter-clockwise, causing the cable 36 to draw arm 30 to the left, which in so doing forces ring 29 to the left and similarly the cylindrical outer housing 22. This configuration is shown in FIG. 4 where cylindrical outer housing 22 has been moved to the left, thus bringing conduits 23 and openings 28 out of alinement and shutting off the flow of liquids from the inner tubular member 25 to the outer surface of the roller.

In FIG. 5, the bracket 32a, 32b can be more clearly seen. The front portion 32a is mounted to the back portion 32b and held in place by machine screws 44. The tolerances of the openings which go about the straight portion 43 of tube 26, arm 30 and cable cover 37 are such that the straight portion 43 and the cable cover are tightly grasped, whereas the arm 30 is free to move in the path formed by the two bracket pieces.

FIG. 6 shows an alternate embodiment for the roller-type applicator wherein, in order to move from the off or closed position as shown in the figure to the on or open position, the handle 42 is turned counter-clockwise, thus drawing cable 36 in and rod 57 to the left. This will apply a pushing force on cylindrical outer housing 50, thus bringing the conduits 52 into alinement with openings 53 in the inner tubular member 25. In order to obtain proper distribution of the liquid, the conduits 52 may not all be radially placed but may be in some instances tangentially placed in cylindrical outer housing 50.

It should be noted that rod 57 is not connected to the cylindrical outer housing 50. This embodiment provides a self-closing arrangement. Inner tubular member 51 is provided with a shoulder 56 which, in the closed position shown in FIG. 6, provides an annular chamber 54 which is connected to the inner tubular member 51 by means of opening 55. When a pressurized fluid is present in tubular member 51, a pressure will be applied through opening 55 into chamber 54, tending to maintain the applicator in the closed position. This

pressure will be maintained when the apparatus has been placed into the open position as described. The pressure of the liquid within the chamber formed by tubular inner member 51 will force the cylindrical outer housing 50 back into its closed position and again maintain it in that position unless it is held in the open position by the operator. The size of chamber 54 is very important. In order to allow an operator to manually force cylindrical outer housing 50 to the left and into the open position, it is necessary that the area and configuration of the chamber 54 be of a particular kind. A large chamber 54 would possibly provide too great or inconvenient a pressure for the operator to operate against in opening the device.

FIG. 7 shows a brush applicator according to the present invention which comprises a handle 60 and a brush head 78. Pivotaly mounted on handle 60 is arm 61 by means of pin 81. Lever 63 is pivotaly mounted to the lower end of arm 61 and to one end of inner cylinder 64. There is a strap 68 arranged about the bristles 69 in the lower part of the brush head 78. The strap 68 serves to hold the bristles together and is usually made of metal. Pipe 65 is internally threaded into one end of the inner cylinder and attached to tubing 67 by nut 66. Pressurized liquid is supplied via tubing 67 and pipe 65 into inner cylinder 64. Arm 61 is equipped with a thumbrest 62 and a spring 80 which is biased to move arm 61 and hence lever 63 and inner cylinder 64 to an open position. Movement of inner cylinder 64 to the left is stopped by dowel 83.

In FIG. 8, outer cylinder 82 is shown to be fixedly seated in brush head 78. Inner cylinder 64 is slidably situated in outer cylinder 82. Inner cylinder 64 is moved to the right by pressure on thumbrest 62, bringing openings 75 into alinement with conduits 74 in outer cylinder 82. Pipe 65 is internally threaded into inner cylinder 64 by means of threads 71. Tubes 72, which are usually of a flexible material but need not be, are forced onto conduits 74. Tubes 72 are joined at their lower ends by means of bands 73 in order to help keep the tubes lying flat and in line within the bristles 69 of the brush.

The brush is operated by attaching a source of pressurized liquid, for example paint, to tubing 67. The pressurized paint flows into inner cylinder 64. In the configuration shown in FIG. 8 and FIG. 7, the pressurized liquid will remain inside of inner cylinder 64. In order to supply the liquid to the bristles 69, the operator will press thumbrest 62 to the right, thus moving inner cylinder 64 to the right. Pin 76 serves to guide inner cylinder 64 and to stop the progress of inner cylinder 64 when the openings 75 have been brought into alinement with the conduits 74. This is achieved when pin 76 abuts and comes to rest against shoulder 77 in outer cylinder 82. The pressurized liquid will be supplied to the bristles of the brush so long as the operator holds the thumbrest in this position. Upon release of the thumbrest, the pressure of the fluid coming into inner cylinder 64 will return the arm 61, lever 63, and inner cylinder 64 to the left or off position, as depicted in FIG. 8.

Referring to FIG. 9, it can be seen that the spring 80 is secured in handle 60 by means of hook 79. Spring 80 is used as an aid in overcoming the pressure exerted on the inner cylinder 64 by the pressurized liquids and to moderate the force of the return to the off position as a result of this pressure.

Referring to FIG. 10, it can be seen that the inner cylinder 87 has located adjacent to pipe 65 an annular shoulder 89 which provides an annular chamber 90. Openings 91 provide passageways through inner cylinder 87 into annular chamber 90. The pressure from the pressurized liquid within inner cylinder 87 provides a force which will maintain inner cylinder 87 in the position shown in FIG. 10, i.e., a closed position.

By manipulation of the thumbrest, as previously described in FIG. 7, the inner cylinder 87 can be moved to the right and into the open position. However, the pressure will be maintained through openings 91 into annular chamber 90, and, upon release of the thumbrest by the operator, this pressure will force inner cylinder 87 to the left and into the closed position once more. Pin 86 guides inner cylinder 87 on its movement to the right into the open position and, upon abutting shoulder 77 of outer cylinder 82, brings the movement of inner cylinder 87 to a stop. The movement of inner cylinder 87 to the left under pressure from the pressurized liquid is stopped by annular ring 85 which is fitted into annular groove 84 in inner cylinder 87.

The embodiment shown in FIGS. 12 and 13 also comprises a handle, a brush head, bristles and the like; however, inner tubular member 101 is rotationally mounted about its longitudinal axis rather than slidably mounted along the longitudinal axis, as shown in FIGS. 7-11. Outer tubular member 103 is fixedly mounted in brush head 78. Inner tubular member 101 has a conical shape rather than a cylindrical shape, as in the prior drawings 7-11. A pipe 104 is internally threaded into brush head 78 and connected through outer chamber 103 by a conduit 105. Inner chamber 101 has opening 106 which passes pressured liquids into the interior of tubular member 101.

Referring again to FIG. 12, we see that the arrangement is in the open position so that openings 107 are in alinement with conduits 74 and conduit 105 and opening 106 are alined.

The inner chamber 101 is maintained in place by annular spring 115 which is biased against annular ring 116 fitted into notch 117. It should be noted that the conical shape of both the outer chamber 103 and the inner chamber 101 results in there being no need for any securing means at the opposite end, i.e., the wider end of the cone. There is, however, a plug 102 which is removable for cleaning.

Referring to FIG. 13, the inner chamber 101 can be seen to be rotated about its longitudinal axis by movement of lever 118 which is pivotally mounted in a slot 120 by means of pin 111. A thumbrest 108 is mounted on lever 118. Extending downward from lever 118 and pivotally connected thereto is rod 109 which has an opening 114 at its lower end through which pin 113 extends. Pin 113 extends through a slot 112 in brush head 78 and outer tubular member 103 and is connected to inner tubular member 101. The outer end of pin 113 is flattened into an enlarged head 110 to prevent its movement out of the opening 114 in rod 109.

Referring again to FIG. 13, the apparatus is seen to be in an open position, the lever 118 having been depressed downward. The downward movement of lever 118 in slot 120 is controlled by a shoulder 119 and comes to a stop upon abutting shoulder 119. Similarly,

the upward movement of lever 118 is controlled and stopped by shoulder 121 at the top of slot 120. The upward movement of lever 118 will cause inner chamber 101 to rotate in a clockwise position, moving opening 107 out of alinement with conduit 74. As can be seen in reference to FIG. 12, opening 106 will be moved out of alinement with conduit 105.

Thus, the resulting off position provides a system that is entirely closed to pressure. However, a static reservoir of liquid is maintained internally in inner chamber 101 so that, upon the return of the apparatus to the open position, the application of pressure and the supplying of liquid to the bristles of the brush will be substantially instantaneous as per the previously described embodiments where a constant pressure was maintained on the reservoir within the inner cylinders.

It should be understood that the prior description covers the preferred embodiments and that changes in sizes, shapes or arrangements of elements may be made without departing from the scope of the invention as described hereinbefore.

The invention claimed is:

1. A fountain liquid applicator comprising
 - a brush member having a handle, head and attached bristles,
 - an outer cylindrical member transversely located in said head portion of said brush and having spaced-apart apertures therein,
 - a plurality of spaced-apart depending flexible tubes attached to said outer cylindrical member and aligned with said spaced-apart apertures, said depending tubes imbedded in said bristles,
 - an inner cylindrical member closed on one end by a rim portion and having a plurality of spaced-apart apertures, said inner cylindrical member slidably positionable within said outer cylindrical member for cooperatively aligning said spaced-apart apertures of said inner cylindrical member with the spaced-apart apertures of said outer cylindrical member, said rim portion on said closed end limiting travel of inner cylindrical member in one direction,
 - a source of pressurized liquid,
 - connecting means for supplying said pressurized liquid to the interior of said inner cylindrical member,
 - an arm member pivotably mounted on said handle portion of said brush,
 - a lever member interconnecting the rimmed end of said inner cylindrical member and one end of said arm member for permitting transverse movement of said inner cylindrical member in response to pivoting movement of said arm member,
 - a spring member connected to said arm member and biasing said arm member to pivot in a direction that would cause the apertures of the inner cylindrical member to register with the apertures of said outer cylindrical member, and
 - a pin-like stop member located on said head portion of said brush for engaging one end of said arm member and limiting arcuate movement of said arm member and thereby limiting the travel of said inner cylindrical member in the other direction.

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