Aug. 16, 1938. H. F. MITCHELL 2,126,999

FOUNTAIN PAINT BRUSH DEVICE

Filed March 21, 1936

FIG. 1

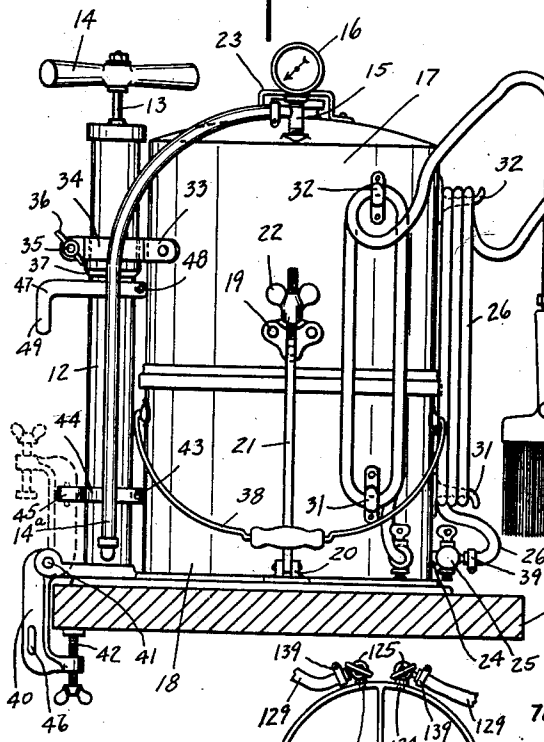


FIG. 2

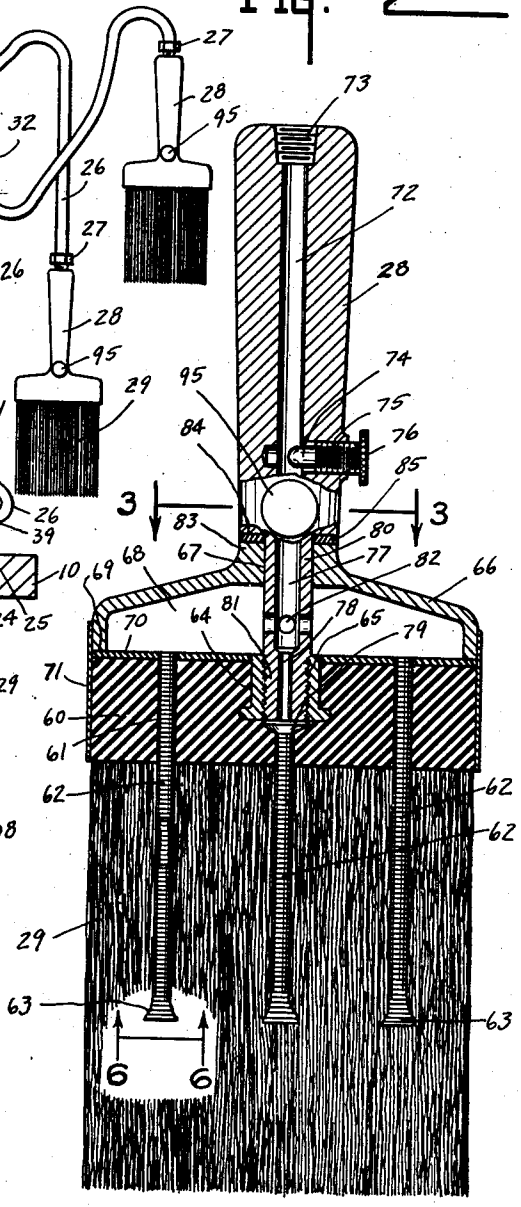


FIG. 4

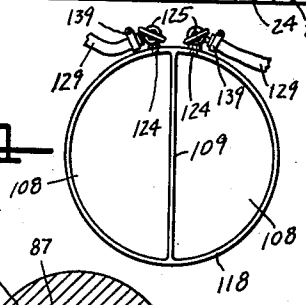


FIG. 3

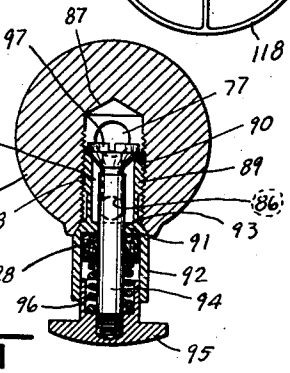


FIG. 5

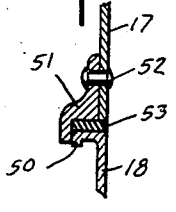
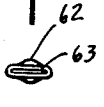


FIG. 6



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FOUNTAIN PAINT BRUSH DEVICE

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Application March 21, 1936, Serial No. 70,092

3 Claims. (Cl. 15—128)

This invention relates to a fountain paint brush device.

The chief object of this invention is to provide a fountain brush or like device construction which will eliminate the dipping of the brush into the material to be applied by the brush.

One feature of the invention consists in the portable character and the universal and flexible character of the construction.

Another feature of the invention consists in the knock-down construction of the several parts incorporated in the device, whereby the paint or liquid containing and transmitting portions are readily exposed for cleaning purposes.

Other features of the invention, such as an arrangement permitting two or more operators to operate from the same device or the single operator to apply two colors from the same device without changing colors in the device and the provision of a detachable arrangement, whereby any brush may be substituted for another brush for special work, if, as and when desired, without disturbing the remainder of the construction.

Other features will be more fully set forth hereinafter in the detailed description.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims.

In the drawing, Fig. 1 is a side elevation of one embodiment of the invention applied and secured to a support, such as a board, or the like, the dotted lines illustrating the board clamping structure in non-clamping position.

Fig. 2 is an enlarged sectional view of one form of brush construction.

Fig. 3 is an enlarged, transverse, sectional view taken on line 3—3 of Fig. 2 and in the direction of the arrows, and of the manual feed valve.

Fig. 4 is an enlarged plan view of the multiple compartment paint receiver or bucket, the bail and other parts being omitted for clearness.

Fig. 5 is an enlarged vertical sectional view through the adjacent portions of the receiver and cover.

Fig. 6 is an end elevation of the discharge end of one of the flexible liquid supplying brush tubes.

In Fig. 1 of the drawing, 10 indicates a plank such as is customarily used, said plank being supported upon brackets carried by two spaced ladders. A base has extending, upwardly therefrom, a standard 12, herein shown in the form of a pump cylinder, the cylinder being provided with a piston, not shown, carried by the rod 13 provided with a handle 14 for manipulating the pump, the pump discharging by the flexible conduit 14a to the fixture 15 of T-formation.

One end of the member 15 supports a gauge 16, the other end connects to or discharges into the top of a cover structure 17 constituting a dome which is operatively associated with a receiver 18. The receiver 18 is suitably supported by the base.

The cover 17 includes a pair of diametrically positioned bifurcated brackets 19. The base pivotally supports at 20 the elongated bolts or rods 21, and wing nuts 22 on the upper ends thereof, whereby the cover is clampingly associated with the receiver and both are rigidly associated with the base. The cover also is provided with the handle for carrying purposes and indicated by the numeral 23.

The receiver is provided with an outlet 24 controlled by a manually operable valve 25 and connected to the discharge end of said valve is a flexible hose 26, the latter being detachably connected as at 27 to a tubular handle 28, the opposite end of which terminates in a brush structure 29. Reference will be had more fully hereinafter relative to portions 28 and 29.

The receiver includes a downwardly directed hook portion 31 and the cover includes, in spaced relation, an upwardly directed hook portion 32, the same constituting the equivalent of a reel or like support for the hose 26.

Herein the receiver is shown provided with two discharge mechanisms and with two reels or hose supports and two brushes, so that two painters may paint at the same time from the single receiver supply.

The cover has rigidly secured to it, the bracket structure 33 which includes a tubular portion 34 that encircles the standard or pump cylinder 12 and the tubular portion 34 is split and is adapted to be clampingly associated with the tube 12 by means of the bolt 35 and wing nut 36. A stop collar 37 may be provided when desired or required.

When paint, or the like, is to be supplied to the receiver or at the end of the day's work the receiver is to be removed and cleaned, the clamping structure 35—36 is opened, the cover is elevated vertically until the union or connection between the receiver and the cover is disassociated and then the cover is swung horizontally until it clears the receiver. It may be clamped in this position, but, of course, it is understood that the clamp or hold-down structure 21—22 is previously disconnected from the brackets 19, there being two of these structures and at oppo-

site sides of the base. The receiver is provided with the usual bail 38 so it may be readily carried about.

The paint, or the like, in the receiver is thus constantly subjected to pressure, which discharges it through the line, or lines 26, to the distributing devices 29 held by means of handles 28. The hose connections 39 to the discharge end of the valve 25 are of the readily detachable type.

Most painters prefer a springy board to work upon and even if a board of that character not be utilized, the constant movement of the painter, or painters, on the board will through vibration tend to move the base and supply mechanism carried thereby from the board. Hence, there is provided a C-clamp 40 pivotally supported at 41 on the base and provided with the clamping bearing member 42 of screw type.

Suitably secured as at 43 to the standard, and herein the tube 12 is such, is the resilient retainer 44 having the cooperating jaws 45 which yieldingly receive the clamp when in non-clamping position and yieldingly retain the clamp in said non-clamping position. The jaws 45 cooperate with the enlargements 46 on the clamp, said enlargements being formed on opposite sides thereof. Thus, whenever the base is supported on the floor, ground level, porch or the like, the clamp will be positioned as shown in dotted lines in Fig. 1 and when supported on a board or the like, the clamp will be positioned as shown in full lines in said figure.

Whenever the board is not utilized but the supply arrangement is to be utilized by a painter on a ladder and the painter is up quite high, then the angle clamp 47 secured to the standard (tube 12) as at 48 and having the depending portion 49, bears upon the upper surface of an upper rung and the portion 42 of the clamp whenever it is desired to clamp the construction thereto to prevent accidental release, engages the lower surface of a lower rung, and if the distance between the rungs varies, the adjustable character of member 42 permits this anchorage to be adjusted to the rung spacing.

One form of leakproof connection between the reservoir and cover is illustrated in Fig. 5. The receiver 18 is shown provided with the peripheral lip 50 and the lower end of the cover is shown provided with a peripheral lip receiving flange 51, rigidly secured thereto in any suitable manner, herein such being illustrated as riveting 52. Interposed between the lip and lip receiving flange 15 is the gasket 53. This prevents the release of the air pressure in the receiver and the escapement of the air.

In place of having two painters work from the same paint supply, it may be desired to have one painter intermittently utilize two colors. In that event the receiver shown in Fig. 4 and indicated by numeral 118, includes a partition structure 109. Each compartment 108 thereof discharges as at 124 to a valve 125 which has a detachable connection to a supply line 129.

While the two brushes shown in Fig. 1 are illustrated as being of identical character, it is to be understood that one may be of smaller or larger character or of a different type from that of the other brush, depending upon the type of work to be performed.

Certain forms of the invention do not contemplate the use of a hand pump. With this form of the invention, the standard could be of tubular character or could be of solid character, as desired, or required. The means for applying pressure to the composite container then would include in place of the T-fixture 15, an air chuck intake. The painter would, enroute to the job, with an apparatus of this kind, stop at the nearest filling station and apply air pressure thereto, the amount of air injected being suitably gauged just as tire pressures are gauged.

However, it is to be noted if the painter is to remain on a large job, that after the pressure has fallen materially in the tank, he would have to return to the filling station for renewal of the pressure. This would result in a loss of time and, therefore, the preferred form of the invention includes the incorporation of the pressure supply as an inherent part of the supply mechanism. The entire supply mechanism may be readily transported by the handle 23. The supply attachment may also be provided with means whereby the same may be carried on the back of the painter when desired although the same however, are not disclosed herein.

Reference will now be had to Figs. 1, 2, 3 and 6, wherein the preferred form of brush structure is illustrated.

In Fig. 2 of the drawing, 60 indicates a molded rubber base, the bristles 29 being anchored by being molded therein. The base is provided with a suitable number of apertures 61 and herein flexible tubing 62 is illustrated as extending through the apertures and projecting slightly above the base 60. The flexible tubing is herein shown—see the broken away portion in the left hand central portion of Fig. 2—as of coil wire type and substantially leakproof in the heel portion of the brush where less flexing occurs. This flexible tube extends beyond the base toward the paint applying ends of the bristles but terminates short thereof. Each end of the tube preferably is of nozzle type, being flattened as at 63—see part Fig. 6. Herein three tubes of this general character are illustrated. Any number may be used.

Also molded in the base is a nut structure 64 internally threaded as at 65. A chamber forming head 66 is centrally apertured as at 67 and provides a chamber 68 open at one end whereby it freely communicates with the open ends of certain of the tubes 62. The lower face 69 of the head bears on a gasket 70 interposed between the head and the base. The metallic ferrule 71 which is conventional with brush structures, is extended upwardly and forms a nest to telescopically receive the head structure. The handle 28 has a passage 72 therein which at one end is threaded as at 73 and adapted to receive the connecting structure 27, shown in Fig. 1, whereby the line 26 is in free communication with passage 72.

Mounted in the handle 28 is a valve member 74 having a threaded engagement 75 therewith and an exposed knurled head 76. This constitutes the constant flow control and regulates the rate of flow through the passage 72 to the chamber 68. Another passage 77 is herein shown in alignment with the passage 72 and terminates in a reduced portion 78 which communicates with a well 79 formed in the base and immediately beneath the nut.

The reduced portion 80 of the handle 28 which includes passage 77 and reduced passage 78 is of cylindrical character and has a threaded end 81 that is detachably associated with the nut 64 at 65. A plurality of transverse apertures or ports 82 freely communicate with chamber 68 and thus the paint supplied to passage 77 is discharged to

the chamber 68 and flows through the tubes into the brush proper for subsequent brush distribution.

The head 66 includes a face 83 and the handle 28 adjacent the reduced portion 80 has a shoulder 84 and interposed therebetween is a gasket or washer 85. When the handle is threadedly connected to the base with the two gaskets and the head structure interposed therebetween, there is provided a brush structure which is rigidly connected together and with the parts secured in leakproof relation.

It will be apparent that by unthreading the handle from the base, the face of the base is exposed for cleaning of the tubes and cleaning of the face of the base. The wall of the chamber 68 is also fully exposed for cleaning purposes. Also, the passages 72 and 77 may be readily cleaned by running a cleaning fluid therethrough.

The hose 26, shown in Fig. 1, when detached from the handle and from the valve 25, may be similarly cleaned and, of course, when the cover has been removed, the receiver may be removed and readily cleaned, the cleaning fluid draining through the valve 25 as a final operation for cleaning the valve 25 as well.

It is to be understood that if a brush of the character illustrated in Fig. 2 is not the proper brush for certain work, another brush, including flexible tubing, bristles and base and of the desired character but having a face substantially identical to that shown in Fig. 2, may be readily substituted for that shown in Fig. 2. Thus, considerable flexibility is possible by this interchangeable adaptability of the brush structure. Also, this detachable arrangement permits of brush renewal by merely substituting a new brush base.

Furthermore, whenever a brush with a smaller base is required, then a brush of the desired base structure and a head corresponding thereto but with an upper portion conforming to that shown in Fig. 2 is utilized and also the gasket 85 is again employed. This further extends the range of usefulness of the foregoing device as an entirety.

The operation of the device has been previously set forth relative to getting the liquid down to the passage 77. Passage 72 immediately beyond valve 74 and between it and passage 77 includes an offset 86, the offset portion 86 being in free communication with the portion 72, except as restricted by valve 74. The handle 28 is provided with a transverse bore 87 which is threaded as at 88 and the same receives a threaded member 89 having a conical valve seat 90 at one end and an apertured partition 91 at the other end.

A tubular extension 92 is exposed on the handle. The aperture 93 in the partition slidably supports a valve stem 94 which carries a head structure 95, a portion of which is telescopically associated with the tubular extension 92 and interposed therebetween is a spring 96 which normally retains the valve member 97 of conical character in valve closing position. Packing 98 surrounds the valve stem and prevents leakage of the liquid supplied to offset portion, and which is under pressure.

When the thumb piece 95 is depressed in opposition to spring 96, liquid under pressure flows through passage 72, the rate of flow being determinable by the pressure and by the restricting valve 74 and into the chamber 99—see Fig. 3—and thence through the valve seat arrangement and beyond the valve 97 and flows into and through the passage 77. Upon manual release, the valve 97 is again seated by the spring. The operator of the brush grasps the same in the usual manner and manipulates valve 97 by the thumb or forefinger, and usually the former, and as often as required to keep the bristles supplied with paint, or the like, for painting.

The cleaning operation of all of the other parts of the mechanism has been previously set forth. For cleaning the brush valve, or valves, it is quite apparent that valve 74 may be readily removed and cleaned. For cleaning the intermittent valve or real manual control of the supply, the tubular valve seat structure is entirely removed from the handle and when removed, the valve member 97 with its supporting stem 94 is detached from the exposed portion or button 95 and then the entire valve member may be cleaned as well as the reservoir or chamber portion 99 of the valve seat structure. After cleaning, the parts may be reassembled in reverse order and then other paint supplied thereto.

Another economy not apparent from the foregoing description and which is inherent in the use of this device, is that when paint is utilized which is relatively rapid drying upon exposure to air, the excess of air to the paint is prevented except on the immediate surface of the paint in the receiver. Those familiar with the painting art know in handling paint of this character the painter usually slaps the brush on opposite sides of the container and there gradually accumulates paint material which is not in fluid condition and which gradually becomes of a crumbly character near the end of a half day's work and these crumbs of paint attach themselves to the brush and are applied by the brush to the work, thus resulting in a rough paint application. The present invention, as before mentioned, does not waste paint in the sense of forming this appreciable accumulation of paint material which is not useful, and furthermore has the advantage of insuring the application of paint without the application of crumbs to the coat.

It is, of course, to be understood that as is good practice in the painting art, all paint supplied to the receiver after being properly mixed for the particular work and conditions under which it is to be applied, should be strained before being supplied to the receiver. This, the careful painter always does, even when painting with the usual hand brush and hand bucket, so that no additional operation is chargeable to the use of this device.

The use of this device eliminates the necessity of the painter constantly bending over when on the ladder or scaffold to dip his brush in the bucket. It also leaves the painter with one hand free to support himself which is not the case if the painter carries the bucket with him, as is sometimes required in hand bucket painting. It has been estimated that approximately 30% to 50% of the painting time is saved by the use of this device. In actual operation, it has required but three seconds to apply the screened paint to the receiver, place the receiver on the base, apply the cover, clamp the cover to the receiver and to the base and the receiver to the base, attach the hose to the valve, attach the brush to the hose, open the valve to which the hose is attached and supply the air pressure to the composite container.

While the invention has been described in great detail in the foregoing description and has been

illustrated in detail as well, such illustration and description are to be considered as illustrative only and not restrictive in character. Various modifications of this invention have been illustrated and/or described in the foregoing drawing and description and such modifications as well as others which will readily suggest themselves to persons skilled in the painting art, are all considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:—

1. In a fountain brush, the combination with a base having a plurality of bristles projecting therefrom and apertures therethrough, of flexible tubes supported by the base and each communicating with an aperture and extending from the base toward and terminating short of the bristles' free ends, said bristles completely enveloping the tubes, each tube having a passage therein of substantially uniform cross section throughout the length of the tube except with its free end flattened to form a flared mouth, the flattened end having a discharge area approximately that of the tube cross section, the several flattenings being substantially coplanar.

2. A device as defined by claim 1, characterized by each tube comprising metallic coil spring wire means arranged in tubular and substantially leakproof relation.

3. In a readily cleanable fountain brush, the combination of a handle having a liquid supply passage, a head detachable from the handle and forming a continuation thereof and having therein a chamber communicating with the passage and with an open end of an area approximately equal to the greatest area of the chamber, a bristle supporting base of an area comparable to that of the chamber and apertured for liquid discharge from the chamber to the bristles, said base closing the open end of the chamber, and a detachable connection between the base and handle for clamping the chambered head therebetween.

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