May 7, 1963 V. J. RALPH 3,088,159

BELLOWS-ACTUATED FOUNTAIN PAINTING DEVICE

Filed Aug. 18, 1959

FIG. 1

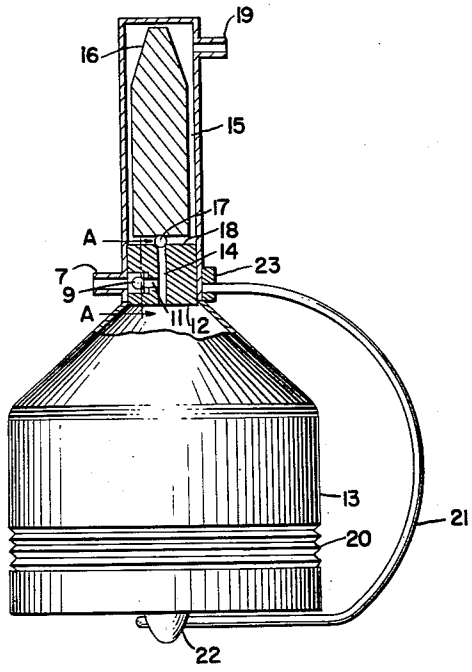
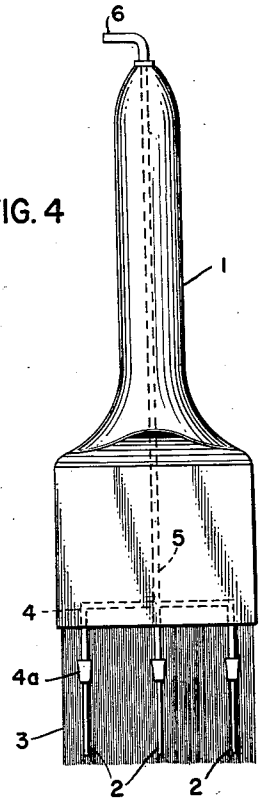


FIG. 4



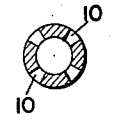
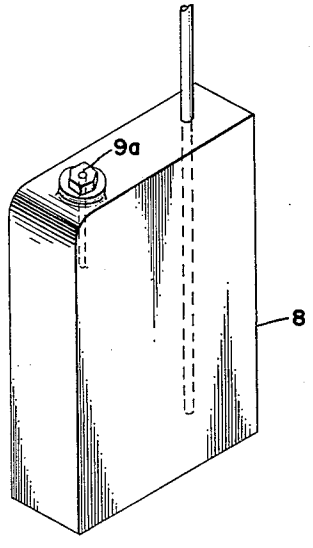


FIG. 2

FIG. 3



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BELLOWS-ACTUATED FOUNTAIN PAINTING DEVICE

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1 Claim. (Cl. 15—543)

This invention relates to a device which is adapted to supply a painting medium, such as paint, varnish etc. (hereinafter called the painting medium) in a controlled and uniform flow to a surface that it is desired to paint.

It is well known to apply a painting medium to a surface by means of a paint brush. The paint brush is held in the hand and when it is required to apply more paint to the bristles of the brush, the brush is dipped in a tin of the painting medium. Any excessive paint that may be covering the bristles is then scraped off on the side of the tin. This method has the disadvantage that considerable time is wasted in dipping the paint brush in the tin of the painting medium, then scraping off any excessive paint and then returning the brush to the surface being painted.

It is also known to have a paint brush where the painting medium is supplied to the bristles by a tube or spreader. However, the tube or spreader extends only a short distance into the mass of bristles. The disadvantange of this method is that the painting medium does not flow freely and uniformly to the tips of the bristles where the painting medium actually contacts the surface being painted. With this type of painting device it has been found necessary to provide a lip at the binding of the brush to prevent the painting medium flowing back over the handle of the brush.

It is one object of the present invention to overcome these disadvantages.

Also hitherto the painting medium has been delivered to the tube or spreader generally from a pressurised container containing the painting medium.

It is another object of the present invention to provide improved means for delivering the painting medium to the paint brush.

The present invention is an improved painting device comprising a paint brush wherein a duct or ducts is or are incorporated in the mass of bristles of the brush, said duct or ducts extending to within a short distance from the tips of the bristles, and having means to control the flow of the painting medium to the duct or ducts.

A preferred embodiment of the invention will now be described with reference to the attached drawings where

FIGURE 1 is an elevation in partial section of an embodiment or part of the invention.

FIGURE 2 is a section along a line AA in FIGURE 1.

FIGURE 3 is a perspective view of part of the invention.

FIGURE 4 is a side elevation of the applicator-brush part of the invention with a portion of the bristles broken away.

A conventional paint brush **1** has ducts **2** extending into the mass of bristles **3**. The ducts **2** extend to a short distance from the tips of the bristles so that the painting medium is most effectively applied to the surface being painted. The ducts **2** are made of flexible plastic tubing and are inserted into short plastic tubes **4***a*, which in turn extend over the ends of short metal tubes **4**. The tubes **4** are joined to a **T** tube **5** which extends down the handle of the brush **1**. A flexible tube **6** is secured to the tube **5**.

In FIGURE 1 an inlet tube **7** conveys the painting medium from a container **8** shown in FIG. 3. An air inlet is provided at **9***a*. Shoulder straps (not shown in

the drawings) can be fitted to the container **8** so that it can be carried on the operators back or hip. A ball valve **9** prevents any flow of the painting medium back to the container. Slots **10** allow the painting medium to pass into a passage **11** in a fixed member **12** and then into a bulb **13**. A passage **14** conveys the painting medium to the upper part of a chamber **15**. A sliding member **16**, preferably made from a heavy metal, slides within this chamber.

A ball valve **17** and seat **18** are located at one end of the passage **14**. The distance the sliding member **16** can move in the chamber **15** is so arranged that the ball valve **17** can not altogether leave the seat **18**. An outlet tube **19** is located in the upper part of the chamber **15** for conveying the painting medium to the paint brush. The upper part of the sliding member **16** is tapered so that the outlet **19** is not covered should the sliding member **16** tip to one side.

The invention is operated by holding the bulb **13** in one hand and the brush **1** in the other hand. By squeezing the bulb **13** and then releasing it, any air in the bulb is expelled and replaced by the painting medium due to the creation of a partial vacuum. Alternate squeezing and releasing causes the painting medium to pass to the extremities of the ducts **2** where it oozes at the tips of the bristles. The painting medium is then applied to the surface in the usual manner and the bulb is squeezed gently or hard in accordance with the volume of paint that is required. By drawing the brush quickly over and just touching the surface the paint is ejected at maximum volume and is easily brushed to an even coat. In this fashion even porous surfaces may be quickly painted.

When the painting operation is finished the bulb **13** can be used to force any remaining painting medium from the system. If desired a cleaning fluid can be used to thoroughly cleanse the system.

The flow control means according to the embodiment of FIGURES 1 and 2 operates by squeezing and releasing the bulb **13** which creates a partial vacuum drawing painting medium in through tube **7** after ball valve **9** opens. By squeezing the bulb again painting medium passes up passage **14** opening ball valve **17**. Ball valve **9** closes. The bulb is held with the chamber **15** pointing downwardly so that the sliding member **16** allows the ball valve **17** to open. The painting medium can then pass out the outlet **19** to the ducts of the paint brush. The flow of the painting medium can be quickly stopped by tilting the bulb and chamber upright so that the sliding member **16** rests on the ball valve **17** thus preventing any further flow of the painting medium. Also when the bulb is placed upright on the ground or floor any further flow of painting medium by gravity is prevented by the sliding member **16** resting on the ball valve **17**.

It is preferred that the bulb **13** has a "concertina" side wall **20** so that the bottom of the bulb can be depressed to send a quantity of the painting medium into the upper part of the chamber **15**. When viscous painting mediums are used it is preferable to use a spring **21** secured to the side of the bulb so that after the bottom of the bulb has been depressed it is automatically returned to its original position. Instead of the spring **21** a helical spring (not shown in the drawings) may be inserted inside the bulb, one end abutting the fixed member **12**, the other end abutting the bottom of the bulb. The spring **21** can be detachably secured to the bulb as shown at **22** and **23**. When the spring **21** is not required it can be removed.

I claim:

An improved painting device comprising a paint brush having an attached mass of bristles wherein a plurality of ducts are incorporated, said ducts extending to with-

in a short distance of the tips of said bristles, said ducts being so positioned that a painting medium ejects from the ducts directly on a surface being painted, means to supply said painting medium to said ducts in a controlled flow, said means comprising a flexible bulb so designed and positioned as to be held in the hand of a person using the painting device, a hollow chamber mounted on said bulb, said chamber comprising a fixed member and a sliding member, said fixed member having an inlet passage formed therein so positioned as to convey said painting medium into said bulb, a ball valve in said inlet passage, radially projecting passages in the seat of said ball valve so positioned as to permit a flow of said painting medium into and through said inlet passage, an exit passage so positoned as to convey the painting medium to an upper portion of said hollow chamber, a ball valve in said exit passage, said sliding member being so weighted and positioned as to close said ball valve in said exit passage by means of gravity when said hollow chamber is in an upright position, said

sliding member engaging said ball valve in such a manner as to prevent any flow of said painting medium while said chamber remains upright unless said bulb is squeezed, said sliding member being operatively mounted so as to prevent said exit passage ball valve from totally escaping from its valve seat when said hollow chamber is in an inverted position but still allowing flow around said exit passage ball valve while in said inverted position, and an outlet tube is said hollow chamber.

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