MANUALLY OPERABLE PAINT DISPENSING APPARATUS

Fig. 4

Fig. 3

Fig. 5

Fig. 6

Fig. 7

Fig. 8

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This invention relates to manually operable paint dispensing apparatus.

The invention is more particularly concerned with improved apparatus for dispensing fluid paint in predetermined regulated volumes from a reservoir into a plurality of paint receiving capsules adapted for supply in picture craft kits.

A principal object of the invention is to provide fluid paint dispensing apparatus characterized by an elongated paint containing reservoir disposed above a table having an elongated channel in which elongated platens are slidably disposed and which are adapted to removable support at a plurality of spaced paint receiving capsules, and wherein the reservoir is provided with manually operable paint flow regulating valves for delivery of measured volumes of paint to the respective capsules.

A further object of the invention is to provide for simultaneous operation of all of the valves and wherein the valves are actuated to equal extents for the delivery of equal volumes of paint to the plurality of capsules.

A still further object of the invention is to provide for uniform variation of the extents of valve actuation for corresponding variation of the volumes of paint delivered to the plurality of capsules.

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Bracketed Fig. 1 is a view partly in elevation and partly in vertical longitudinal section and showing the essential cooperating structural features of the invention.

Bracketed Fig. 2 is an elevational view as observed from the right of Fig. 1 with the channel member and platen involved in the invention, in transverse section.

Fig. 3 is a side elevational view of the paint containing reservoir together with the manually operable paint dispensing mechanism operatively associated therewith and wherein the valves involved in such mechanism are in open paint delivery position as opposed to the closed portion thereof in Fig. 1.

Fig. 4 is a top plan view of the structure shown in Fig. 3.

Fig. 5 is a full scale fragmental elevational view of the left-hand end of the reciprocable bar involved in said paint delivery mechanism.

Fig. 6 is an enlarged vertical sectional view of one of the valves together with its inlet pipe and dispensing nozzle, and wherein the valve is in closed position.

Fig. 7 is a view corresponding to Fig. 6 but wherein the valve is in open position.

Fig. 8 is a transverse section of the reservoir and showing a paint quantity gauge operatively associated therewith.

Referring now in detail to the drawings, 10 designates a paint containing reservoir which, as indicated in Fig. 8, is preferably of cylindrical form and which, as indicated in Figs. 1, 3 and 4, is of substantial length for a purpose as will later appear.

Liquid paint is admitted to the reservoir 10 from a supply tank 11 and through a pipe 12 which is provided with a stop clock 13.

As indicated in Fig. 1, the supply tank 11 is preferably disposed above and adjacent one end of the reservoir 10.

A vacuum tank 14 is disposed preferably adjacent to and above the opposite end of the reservoir 10 and communicates therewith through a pipe 15.

The vacuum tank 14 is provided with a vacuum pump connecting pipe 16 and is also preferably provided with a vacuum gauge 17.

Other pipes 15a have corresponding ends thereof in communication with the vacuum tank 14 and are adapted for extension to the reservoirs of other units which may be arranged in tandem with the one shown. The pipes 15a are each provided with a shut off cock 18.

The reservoir 10 is provided with a paint gauge in the form of a buoyant float 19 disposed within the reservoir and to which is rigidly connected the lower end of a float stem 20 which is vertically slidable disposed in a suitable bearing member 21 projecting upwardly from the reservoir.

The purpose of the vacuum tank 14 is to provide a steady flow of paint from the supply tank 11 into the reservoir 10 and in order to provide a more positive flow of paint the tank 11 is preferably provided with a gravity actuated float member 22 which includes an upwardly opening cup member 23 whose circumferential flange bears on the inner wall of the tank and a weight member 24 supported on the base of the said cup member.

The tank is further preferably provided with a cover or lid 25.

The reservoir 10 is provided with a longitudinal series of relatively short pipes 26 depending from the bottom thereof and in communication therewith. The pipes 26 are equally spaced longitudinally or axially of the reservoir 10 and the lower end of each pipe 26 is rigidly connected to a valve body 27 which is provided with a central transverse bore 28 and upper and lower ducts 29 and 30 respectively whose adjacent ends communicate with the bore 28 in off-center relation thereto, and the opposite ends of the ducts open through the upper and lower surfaces of the valve body 27 whereby the upper ducts 29 communicate with the pipes 26 and consequently the reservoir 10.

The valve bodies 27 are each provided with a centrally apertured fitting 31 whose aperture is in communication with the lower end of duct 30 and a nozzle 32 depends from each fitting 31 and communicates with the aperture therein.

Rotatably disposed in each bore 28 is a valve 33 which is provided with a diametrical port 34.

As is indicated in Figs. 6 and 7, the valves are closed when the ports 34 are inclined left-upwardly and are open when same are inclined right-upwardly. In other words, when ports 34 are out of communication with ducts 29 and 30, as in Figs. 1 and 6, the valves are closed and no paint will issue through the nozzles 32. On the other hand, the ports 34 are in communication with the ducts 29 and 30, as in Figs. 3 and 7, the valves are open and paint is free to pass out through the nozzles 32.

The invention comprises novel means for effecting simultaneous and equal movement of the valves 33 and such in a preferred structural embodiment thereof comprises an elongated bar 35 whose opposed ends are slidably or reciprocably supported in brackets 36 which are rigidly secured to opposite ends of the reservoir 10 and the bar 35 is provided with a plurality of depending fingers 37 each of which is provided with a downwardly opening slot 38. The valves 33 are each provided with a horizontal stem 39 and a lever arm 40 projects radially from each stem adjacent the outer end thereof.
The lever arms 40 are provided with terminal right angular portions 41 which are received within the slots 38. With this arrangement sliding movement of the bar 35 moves the valves 33 to open and closed positions as in Figs. 7 and 6 respectively.

One end of the bar 35 is provided with a hand engageable handle 42 for manual manipulation of the bar and the resulting movement of the valves.

It is to be observed that in the dispensing of paint from the nozzles 32, the bar 35 needs to be moved to the position of Fig. 3 for an instant only and then moved back to its valve closing position of Fig. 1, since an instant only is required to dispense a relatively small predetermined volume of the paint. Proper operation of the bar becomes highly efficient as a result of experience by an operator.

In cases where smaller volumes of paint are required to be dispensed, the dispensing stroke of the bar 35 may be varied by placing a stop pin in one of the apertures 43 in the end of the bar opposite the handle 42 and which pin will engage the adjacent bracket 36 to limit dispensing movement of the bar.

The dispensed paint is adapted to be supplied to small capsules 44 which are removable disposed in upwardly opening pockets 45 formed in an elongated platen 46 which is longitudinally slidably disposed in a guide channel 47 in the upper face of a channel member 48 rigidly secured to the upper face of a suitable table or bench 49.

The capsule receiving pockets 45 are longitudinally spaced in keeping with the longitudinal spacing of the paint delivering nozzles 32 whereby when a capsule supplied platen 46 is slid into the channel 47 the capsules may readily be positioned immediately below the nozzles for simultaneously receiving equal volumes of paint therefrom.

As indicated in Fig. 1, several platens may be in sliding position whereby when one is slid into capsule filling position, the one in advance thereof whose capsules have already been filled is pushed out of filling position.

While we have disclosed our invention in accordance with a single specific structural embodiment thereof, such is to be considered as illustrative only, and not restrictive, the scope of the invention being defined in the subjoined claims.

What we claim and desire to secure by U. S. Letters Patent is:

1. In apparatus of the character described, an elongated horizontally disposed paint containing reservoir, a supply tank for paint in communication with said reservoir and supplying paint thereto by gravity feed, and a vacuum tank in communication with said reservoir for aiding the gravity flow of the paint from said supply tank, a plurality of pipes depending from said reservoir and in communication therewith, said pipes being in the vertical axial plane of said reservoir and being equally spaced longitudinally thereof, a paint flow control valve at the lower end of each said pipe, a paint delivery nozzle depending from each valve, each of said valves being provided with an operating lever arm, and manually operable means supported by said reservoir and operatively engaged with said lever arms for simultaneous operation of said valves by said manually operable means.

2. The structure according to claim 1, wherein said supply tank is provided with weight means for gravitational aid of the flow of paint therefrom and into said reservoir.

3. The structure according to claim 1, wherein said manually operable means comprises an elongated bar slidably supported in a bracket at each end of said reservoir, an operating handle at one end of said bar, and a plurality of fingers depending from said bar in equal longitudinally spaced relation, said fingers being provided with slots receiving portions of said lever arms for simultaneous operation thereof upon sliding movement of the bar.

4. The structure according to claim 3, together with means associated with said bar for varying movement thereof in a valve opening direction, to thereby vary the volume of dispensed paint.

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