Aug. 11, 1959 W. A. WHITFIELD ET AL 2,898,618

PAINT APPLYING MEANS

Filed May 2, 1957

Fig. 1.

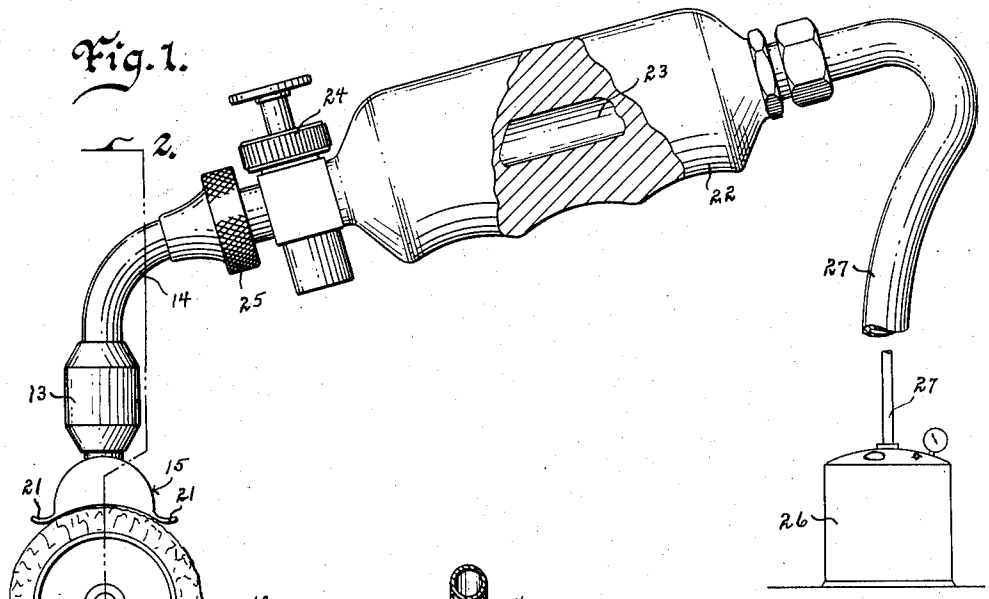


Fig. 2.

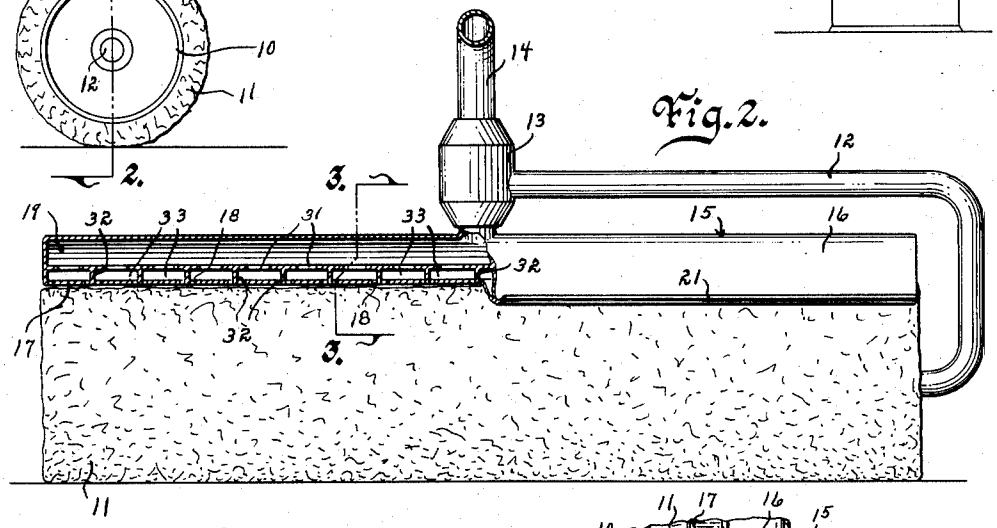


Fig. 3.

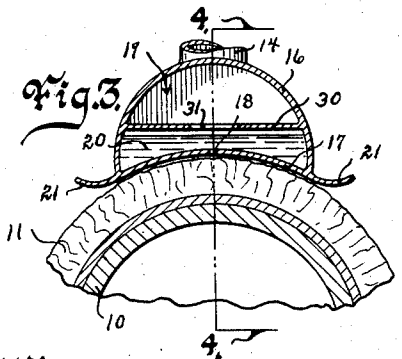
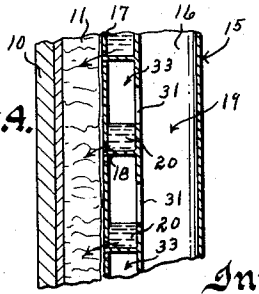


Fig. 4.



Witness
Edward P. Seeley

Inventors
William Allen Whitfield
& John Weber Jr.
by M. Talbert Dick
Attorney

United States Patent Office 2,898,618
Patented Aug. 11, 1959

2,898,618

PAINT APPLYING MEANS

William Allen Whitfield, Des Moines, and John Weber, Jr., Ames, Iowa

Application May 2, 1957, Serial No. 656,670

5 Claims. (Cl. 15—128)

This invention relates to a means for applying paint products to walls and like, and more particularly to the cylindrical roller applicator type.

The problem of applying paint and like surface coatings is of long standing. Three distinct methods exist, i.e., brushing it on, spraying it on, and rolling it on. The brush method is the oldest one, but is slow and tedious. Also, it is difficult to avoid paint droppings. The method of spraying the paint by compressed air is rapid, but due to fogging it cannot be used for inside wall painting and even out of doors it is often not feasible due to the fog drifting beyond the area of use and onto other objects. Furthermore, spraying is only possible when large mass areas are to be painted inasmuch as one cannot draw fine lines with a spray gun. Also, such equipment is costly and requires the services of a skilled technician. In recent years, many have turned to the paint roller. In general, there is a handle, and a wool like covered cylinder rotatably mounted to the handle. The paint to be applied is placed on the absorbent wool padding, and the tool manually rolled over the wall surface. The actual rolling of the paint onto the wall is rapid and drippings are not normally encountered. The difficulty is the time consumed in constantly replenishing the wool cylinder with a new supply of paint. Some effort has been made to have the cylinder perforated and a supply of paint inside the cylinder. There are several objections to these fountain paint rollers. First and foremost, the paint must be of a proper consistency in order to pass through the perforations and through the wool like cylinder covering. Even then, there is a tendency toward paint clogging and it is almost impossible to clean the unit after use. Furthermore, with the cylinder full of paint, the tool is entirely too heavy for ease of operation.

Therefore, one of the principal objects of our invention is to provide a means for supplying paint to a cylindrical paint roller during the actual rolling of the tool over the surface to be painted.

More specifically, the object of this invention is to provide a means for depositing paint when needed onto the outer periphery of the cylindrical roller of a paint roll applicator.

A further object of our invention is to provide a paint roll applicator that may be easily and quickly adjusted for different angle attacks over the surface to be painted.

A still further object of this invention is to provide a fountain paint applicator of the cylindrical roll type that is light of weight.

A still further object of our invention is to provide a fountain paint roller that is under the control of the operator at all times relative to the amount of paint to be applied over a given surface.

Still further objects of our invention are to provide a fountain paint applying tool of the roll type that is economical in manufacture, durable in use, and refined in appearance.

Additionally, the invention contemplates, in a device as characterized, paint outlet apertures in a supply chamber wall which is so close to an absorbent material surfaced painting roll as to be substantially wiped by the latter with the result that existing paint is wiped from the outlet apertures.

These and other objects will be apparent to those skilled in the art.

Our invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in our claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a side view of our paint applicator with a section cut away to more fully illustrate its handle portion,

Fig. 2 is an enlarged rear view of the unit, with sections cut away and taken on line 2—2 of Fig. 1,

Fig. 3 is an enlarged cross sectional view taken on line 3—3 of Fig. 2, and

Fig. 4 is an enlarged vertical sectional view of the feeding structure, taken on line 4—4 of Fig. 3.

In these drawings we have used the numeral 10 to designate an ordinary paint roller applicator cylinder rotatably mounted on the shaft 12.

The numeral 11 designates a wool like sleeve embracing the cylinder 10. The rod shaft 12 extends from one end of the cylinder, thence laterally, and then to a point above the center of the cylinder roller 10. Heretofore this free end of the rod shaft is secured to handle extending transversely of the longitudinal axis of the cylinder. In our device, we have a collar 13 secured to the free end of the rod shaft. The numeral 14 designates a pipe extending through and secured to the collar 13. The numeral 15 generally designates a material distribution hood on the forward end of the pipe 14 and is located between the collar 13 and the cylindrical roller, as shown in Fig. 2. This hood has a convex curved top 16 and a concave curved bottom 17 to loosely engage and conform to the curvature of the wool like sleeve of the roller, as shown in Fig. 3. The numeral 18 designates a plurality of spaced apart paint passageways in the bottom portion 17. The portions 16 and 17 form an elongated compartment 19, extending the length of the roller unit, for receiving and distributing paint 20. The bottom 17 extends at both sides beyond the sides of the top 16, to provide the outwardly and rearwardly curved guide flanges 21. The numeral 22 designates a handle grip portion having a passageway 23. The numeral 24 designates a thumb operated valve on the forward end of the handle and which is in communication with the passageway 23. The numeral 25 designates a knurled nut gland connecting the rear end of the pipe 14 to the forward end of the valve 24. Such a connection 25 may be loosened and the roller head unit adjustably rotated relative to the axis of the handle. By then tightening the connection 25, the roller head unit will be held in such desired angle of attack onto the wall to be painted. In most cases the roller unit will be adjusted as shown in Fig. 1, for up and down strokes. However, the operator may wish to make oblique or horizontal strokes and if so the adjustment is by use of the connection 25. The numeral 26 designates an ordinary compressed air and paint supply container. The paint to be used is placed in the container and an air pressure in the container and above the paint is created by any suitable means such as a motorized compressor, hand air pump or like. The numeral 27 designates a flexible conduit or hose having one end communicating with the rear end of the passageway 23 and its other end operatively communicating with the inside bottom of the container. By this construction paint will be forced from the supply container 26, through the

elongated flexible hose 27, through the passageway 23, and to the valve means 24. By merely depressing the thumb valve 24, the spring loaded valve will be opened accordingly thereby permitting paint to flow through the valve, through the rigid pipe 14, and into the distributor hood 15, thence through the passageways 18 and onto the outer surface of the applicator sleeve 11. With the roller, rolling over a wall or like surface, the paint will be distributed all over and around the roller sleeve. The paint supply will be constant and automatic throughout the painting phase. If during the painting, too much paint becomes present on the roller, the valve 24 is permitted to close. When the roller begins to not have sufficient paint, it is merely necessary to again depress the thumb valve. Once the sleeve 11 is well saturated with paint, it will function for sometime before it is necessary to depress the valve 24 for additional paint. If the roller unit is used (such as in corners) in a vertical position, it may be desirable to have distributing cells in the compartment 19 to insure at least a limited paint supply to the upper end of the roller. In this connection we install a false bottom 30 in the compartment 19 having spaced openings 31 as shown in Fig. 2. Between each opening 31 we have a dividing wall 32 thereby forming a plurality of pockets or cells 33. The passageways 18 are adjacent the walls 32, and therefore even if the roller unit is vertical, what paint there is in each of the pocket cells, will flow through the passageways 18, and onto the roller unit.

Also an important point to re-emphasize, is the fact that the absorbent surfaced roll 10, 11 is so close to the hood bottom 17, as shown in Fig. 3, to substantially wipe the same and thus wipingly remove paint from the apertures 18 in wall 17.

While we have disclosed our device as a painting means, it may be used to advantage in applying any suitable flowable matter to a surface. If the supply container 26 is above point of use, the air pressure phase may be eliminated and the paint permitted to pass through the hose 27 by gravity.

Some changes may be made in the construction and arrangement of our paint applying means without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

We claim:

1. A paint applicator or the like comprising an applicator roll, a supply reservoir, a common supporting means for said reservoir and roll, said supply reservoir having a fluid inlet and providing a bottom wall disposed in close adjacency to the roll surface, a first partition sealingly carried by opposite side and end reservoir walls and dividing said reservoir into an upper storage compartment into which said inlet opens, and a subjacent and sealed off roll-supplying area, laterally spaced and upstanding transverse partitions coextensive in width with said reservoir and extending between the bottom reservoir wall and the first partition to divide the supply area into paint holding pockets, said first partition having transverse openings communicating with the respective pockets in spaced relationship to said upstanding partitions whereby to provide adjacent paint-intercepting baffle surfaces at the top of each pocket, and the bottom reservoir wall having roll supply openings adjacent each side of said upstanding partitions and of minor size as compared to said partition openings.

2. A paint applicator or the like comprising an applicator roll, a supply reservoir, a common supporting means for said reservoir and roll, said supply reservoir having a fluid inlet and providing a bottom wall disposed in close adjacency to the roll surface, a first partition sealingly carried by opposite side and end walls and dividing said reservoir into an upper storage compartment into which said inlet opens, and a subjacent sealed-off roll-supplying area, laterally spaced and upstanding transverse partitions coextensive in width with said reservoir and extending between the bottom reservoir wall and the first partition to divide the supply area into paint holding pockets, and said first partition having transverse openings communicating with the respective pockets, and the bottom reservoir wall having roll supply openings adjacent each side of said upstanding partitions.

3. A paint applicator or the like comprising a handle, a supply conduit extending longitudinally through said handle for connection at the rear handle end to a source of paint supply, a rigid conduit section projecting from the forward end of said handle, an elongated paint receiving and distributing reservoir, outlet aperture means longitudinally coextensive with the bottom wall of said reservoir, a rigid conduit section substantially normal to the reservoir and connected to the upper part thereof intermediate its ends, clamp sleeve incorporating means connecting said handle and reservoir-provided conduit sections for relative rotational adjustment about the axis of said conduit sections, manually operable and normally closed valve in said handle-provided conduit section adjacent the forward end of said handle, a collar rigid with and surrounding said reservoir-provided conduit section, a U-form bracket having one leg rigid with said collar, a paint applicator roller coextensive in length with said reservoir and journalled on said other U-member provided leg and disposed in substantially peripheral bearing engagement with the outlet aperture means, concaved roller-periphery-engaging lips provided by said bottom wall at opposite sides of said outlet aperture means, a transverse longitudinally extending partition dividing said paint distributing reservoir into an upper storage compartment and a subjacent roll-supplying area, there being outlet holes in said partition, and the bottom wall of the reservoir providing transverse laterally spaced and upstanding partition-engaging walls defining paint-storage pockets extending in a continuous series longitudinally of the reservoir, each pocket aligned with a different one of said partition holes, there being bottom wall-provided outlet apertures located adjacent opposite sides of each of said upstanding pocket defining walls.

4. A paint applicator or the like comprising an applicator roll, a supply reservoir, a common supporting means for said reservoir and roll, said supply reservoir having a fluid inlet and providing a bottom wall disposed in close adjacency to the roll surface, upstanding imperforate means rising from said bottom wall a distance less than the depth of said reservoir and sealingly engaging opposite reservoir walls to divide the entire lower portion of said reservoir into a plurality of adjoining paint holding pockets having top openings, each of said pockets having side walls substantially normal to the axis of said roll, and said bottom wall having an outlet aperture means adjacent each pocket side wall, and said outlet aperture means being of minor size as compared to said top pocket openings, whereby said pockets will supply paint to the roll for a considerable period of roll operation and regardless of the inclination of the roll with respect to the horizontal.

5. A paint applicator or the like comprising an applicator roll, a supply reservoir, a common supporting means for said reservoir and roll, said supporting means having an extension projecting radially away from the roll axis, said extension providing an outer terminal which is bent at an angle in a plane normal to the roll axis, said supply reservoir having a fluid inlet and providing a bottom wall disposed in close adjacency to the roll surface, upstanding imperforate means rising from said bottom wall a distance less than the depth of said reservoir and sealingly engaging opposite reservoir walls to divide the entire lower portion of said reservoir into

a plurality of adjoining paint holding pockets, said bottom reservoir wall having an outlet opening adjacent each pocket side wall, an operating handle for axial connection to said extension terminal, and a clamp means connecting said handle and extension terminal for relative rotational adjustment about a common axis, whereby the working position of the handle can be the same in all relative adjustments of the roll and paint will be supplied thereto regardless of the inclination of the roll with respect to the horizontal.

References Cited in the file of this patent

UNITED STATES PATENTS

352,009 Seery ---------- Nov. 2, 1886
435,606 Jenking ---------- Sept. 2, 1890
840,308 Garrecht ---------- Jan. 1, 1907
1,714,257 Clark ---------- May 21, 1929
2,250,692 Wise ---------- July 29, 1941
2,516,757 Davidson et al. ---------- July 25, 1950
2,654,107 Magoon ---------- Oct. 6, 1953
2,785,425 Lenk ---------- Mar. 19, 1957
2,827,649 Perry ---------- Mar. 25, 1958

FOREIGN PATENTS

805,740 Germany ---------- May 28, 1951
1,092,653 France ---------- Nov. 10, 1954