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PAINT APPLYING ROLLER

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Fig. 1

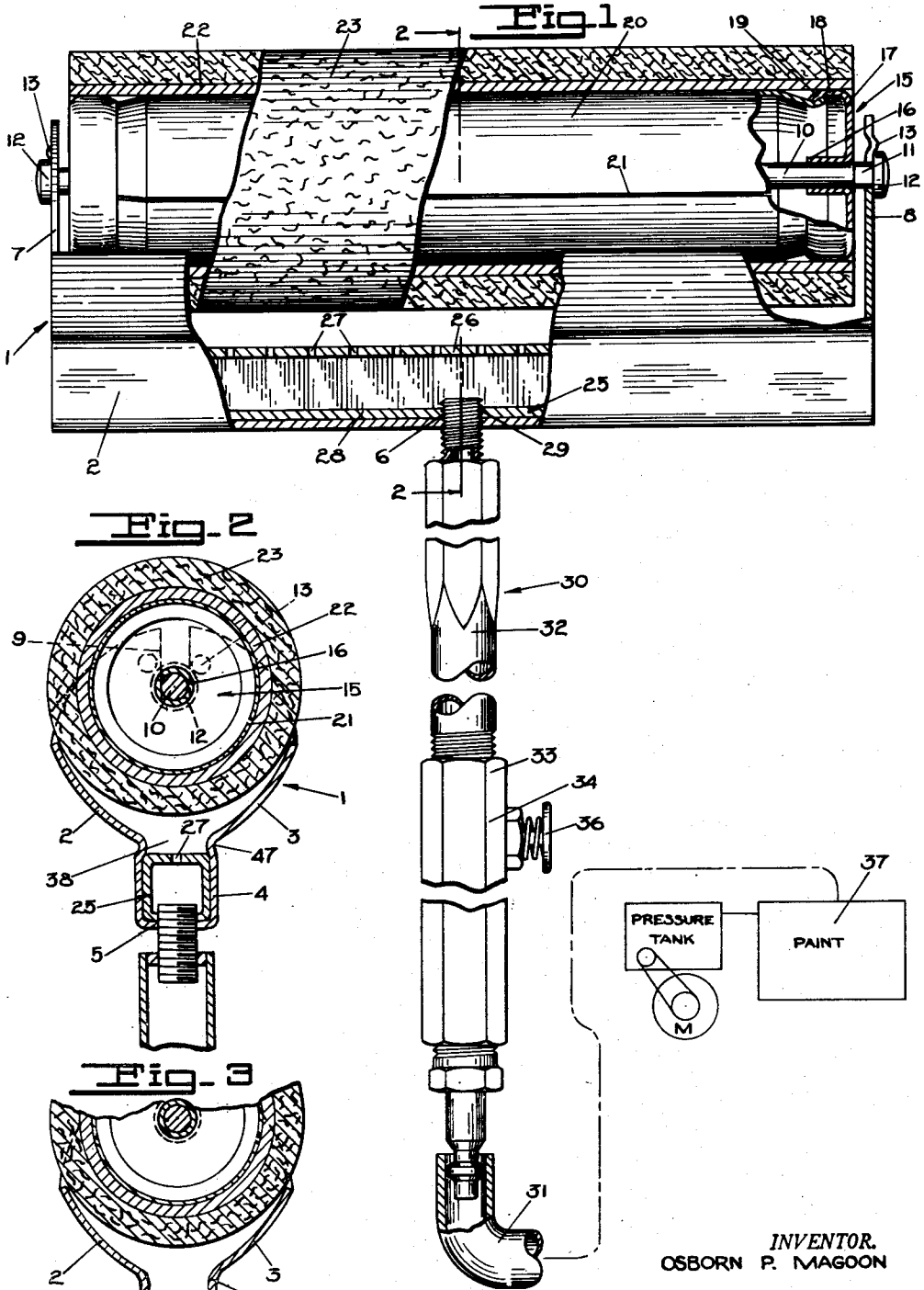


Fig. 2

Fig. 3

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PAINT APPLYING ROLLER

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This invention relates to paint applying devices in general, and more specifically to a roller type paint applying device.

In the applying of stipple enamel or flat stipple paint, the customary procedure is to first apply the paint with a brush, and to then give a stipple finish to the paint so applied by running a carpet-roller over the same. Such rollers, in themselves, are quite common, having a handle, and the outer surface of the roller being of carpet material having a pile to give the desired stipple finish when rolled over the paint.

The above procedure is time consuming and messy.

One of the objects of the present invention is the provision of means for simultaneously applying the paint and performing the stippling operation, and which operation is performed without requiring the step of repeatedly dipping a brush into a paint bucket or the like for transfer from the brush to the surface to be painted.

Heretofore in the applying of ordinary flat wall paint to ceilings and walls, the step of washing the dirt off the walls and ceilings is many times omitted, since this step is relatively costly and is not always necessary. However, in applying the paint with a brush, the dirt usually becomes loosened and mixes with the fresh paint, thereby advertsely affecting the color of the latter. The dragging of the bristles over the old surface is what causes the dirt to become loosened.

The present object of the invention is the provision of means for applying stipple or ordinary paint over a soiled or dirty surface without loosening the dirt, whereby the paint that is applied will remain clean and will have better adherence to the surface that is painted.

Another object of the invention is the provision of means for applying texture material to walls and ceilings in a more efficient and clean manner than heretofore.

A still further object is the provision of a device for applying paint and the like to a surface, and which device includes a paint applying roller and means for quickly changing the paint applying surface material of the roller, either for replacement or for use of the device with a different colored paint. An additional object is the provision of a device of the foregoing character that is easily cleaned of old paint whereby a different colored paint can be quickly and safely used, or the device can be stored in a clean condition for future use.

Another object is the provision of a simple, economical, pressure feed paint applying roller in

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which the paint is applied to the surface of the roller from a point outside the roller, and in which the paint is retained on the roller until transferred to the surface to be painted, thus making the painting operation a relatively clean and neat one.

Other objects and advantages will appear in the description and in the drawings.

In the drawings,

Fig. 1 is a part sectional and part elevational view of the paint applying device. The feed system is diagrammatically indicated.

Fig. 2 is a cross sctional view taken along line 2—2 of Fig. 1.

Fig. 3 is a cross sectional view similar to that of Fig. 2, but showing a slightly modified type of feed chamber for feeding relatively heavy plaster-like texture material to the roller.

In detail, the device comprises a shield 1 that is generally in the form of an elongated channel having corresponding sides 2, 3 that may be arcuately curved in cross sectional contour with their concave surfaces generally facing each other and in which shield said sides substantially follow a common cylindrical contour about a common axis.

The bottom of said channel is formed to provide an elongated recess 4 extending longitudinally thereof, one side of which recess opens into the space between sides 2, 3 of the shield.

Recess 4 has a bottom 5, which bottom is formed with an opening 6 centrally between its ends.

The shield has opposite end walls 7, 8 that close the ends of the channel, said end walls being respectively slotted at 9 (Fig. 2) for receiving the ends of a shaft 10.

The ends of said shaft may be formed with flat surfaces 11 on two opposite sides for sliding the ends of the shaft between the sides of the slots, so that the shaft will not rotate. The shaft itself may have heads 12 at said ends that may be integral with the shaft, or they may be threadedly connected with the latter as desired. One or more slightly outwardly projecting portions 13 on end walls 7, 8 adjacent the sides of the slots 9 may serve to releasably hold the ends of the shaft in the slots, but upon exerting a predetermined force on the shaft in a direction outwardly and longitudinally of the slots, the heads 12 will slip over said projections and the shaft will be free from the shield. Any other suitable means may be provided for releasably securing the ends of the shaft to said end walls of the shield.

Bearings 15 are rotatable on said shaft at opposite ends of the latter. Each of said bearings includes a central hub 16 through which the shaft rotatably extends. Said hubs extend toward each other. A web 17 extends radially outwardly of each hub, and each web is formed with an annular flange 18 at its outer edge. Each flange 18 is turned slightly radially inwardly along its free edge, as indicated at 19 (Fig. 1).

The flanges 18 of the bearings 15 are directed toward each other and extend over the opposite outer ends of a generally cylindrical core member 20.

The core member 20 is formed at its opposite ends with an annular radially outwardly directed recess in which the inturned edges 19 of flanges 18 are adapted to fit. The core member 20 is preferably of resilient spring metal and is split longitudinally along one side as at 21 so that the portions of the core extending away from the said split 21 at opposite sides thereof will spring apart, thereby yieldably holding the end portions of the core within the flanges 18.

The outside diameter of the core member is substantially the same as that of the outer surfaces of the flanges 18, although it may be slightly greater.

Frictionally secured on the core member 20 is a rigid cylinder 22 that tends to hold the core member under slight compression thereby providing a tight frictional fit between the core member and said cylinder, although the latter may readily be pulled off said core member longitudinally of the latter.

Secured to the exterior surface of the cylinder 22 is a relatively soft paint applying material 23 for applying stipple enamel or paint, the material 23 is preferably carpet material having a pile.

For applying ordinary flat wall paint, the surface material may be sheepskin, or for other purposes it may be sponge rubber. Different patterns may be formed on the surface material in order to produce different designs on the wall upon painting the same with a material that will hold such design without its flowing together.

Secured within the recess 4 is an elongated length of tubing generally designated 25, which, in the present instance is indicated as being square or rectangular in cross sectional contour. The end walls 7, 8 may close the ends of the tubing, or separate plugs may be provided, if desired. Leakage past the ends of the tubing is not harmful, if small, and may be beneficial. Side 26 of said tubing extends across the outer open side of recess 4 at a point about where the said side opens into the space between the sides 2, 3 of the shield 1; and said side 26 is formed with a longitudinally extending row of openings 27 that are directed toward the roller that has the paint applying material thereon when the shaft carrying the roller is secured in slots 9.

The side 28 of tubing 25 that is opposite the wall 26, is formed with an internally threaded opening centrally between its ends. This opening is indicated at 29.

Opening 29 is adapted to receive the externally threaded end of the rigid end section 30 of a flexible feed conduit 31.

The end section 30 may be in two parts, with part 32 having said externally threaded end while the opposite end may be internally threaded to threadedly receive one end of a valve body 33 having a thumb controlled valve 34 therein.

The opposite end of said valve body connects with said flexible conduit 31. A button 36 is adapted to be pressed by the thumbs of the hand that folds the valve body.

Valve body 33 and section 31 together form the rigid handle adapted to be grasped by the hand of an operator for rolling the roller over the surface to be painted.

Paint or whatever similar material is to be applied, is conducted to the roller through conduit 31 from a source 37 of said material under pressure.

There is a space 38 between the side 26 and roller surface 23 which permits distribution of the paint along the full length of the roller. The sides 2, 3 may be in substantially wiping engagement with the external surface of the device. At least substantially wiping engagement may be along the edges of the shield. A very slight clearance between the shield and roller permits the desired amount of paint to be drawn from the space 38 by the roller and then carried from within the shield to the surface to be painted.

The tubing 25 forms a chamber or compartment in which the paint is distributed from end to end thereof for discharge of the paint material through openings 27 into the carpet material of the roller, and the latter will carry the paint onto the wall where it will evenly deposit the same.

If stipple paint or enamel is used, the same will be applied and stippled at the same time since its viscosity is such that it will retain the pattern impressed upon it.

If flat ordinary paint is used, it is self levelling, and will not retain the stippled finish. The same or a different cylinder may be used where the walls are merely to be painted with flat oil or water base paints.

Where relatively heavy texture material is to be applied, a member 45 (Fig. 3) may be substituted for the tubular member 25, and this member 45 is open along the side facing outwardly of the shield so as to offer little resistance to the depositing of the texture material onto the rollers. In such form, there may be slightly greater clearance between sides 2, 3 of the shield and the roller.

In any event, handle 30 is secured to the member 25, or 45 and not directly to the shield. These members 25, 45 are usually of cast material, and are quite strong and rigid, whereas, the shield may be of relatively light sheet metal. Thus the members 25 or 26 will furnish a support for the shield.

The opposite sides of said shield may be forced inwardly toward each other and slightly over the member 25, as indicated at 47, for holding the member 25 (or 45) within the shield when the shield is separate from the handle.

It is to be understood that the illustrations and detailed description merely show and describe a preferred form, and are not intended to constitute restrictions.

I claim:

1. A paint applying device comprising, a roller provided with a relatively soft paint applying exterior surface, an elongated channel-like shield including a pair of opposite end walls, said roller being positioned longitudinally of said shield and partially within the latter, bearings respectively adjacent the ends of said shield supporting said roller for rotation, an elongated paint supply reservoir extending along the bottom of said channel-like shield having a wall adjacent said roller formed with discharge openings directed toward the latter, a pressure supply conduit for

paint opening into said reservoir for supplying paint to the latter under pressure.

2. A paint applying device comprising, a roller provided with a relatively soft paint applying exterior surface, an elongated channel-like shield including a pair of opposite end walls, said roller being positioned longitudinally of said shield and partially within the latter, bearings respectively adjacent the ends of said shield supporting said roller for rotation, an elongated paint supply reservoir extending along the bottom of said channel-like shield having a wall adjacent said roller formed with discharge openings directed toward the latter, a pressure supply conduit for paint opening into said reservoir for supplying paint to the latter under pressure, the sides of said shield along its free edges having a substantially wiping engagement with said exterior surface of the latter with a substantial portion of said roller projecting outwardly of said shield whereby paint within said channel will tend to remain therein until carried therefrom by rotation of said roller.

3. A paint applying device comprising, a roller provided with a relatively soft paint applying exterior surface, an elongated channel-like shield, said roller being positioned longitudinally of said shield and partially within the latter, bearings respectively adjacent the ends of said shield supporting said roller for rotation, an elongated paint supply reservoir extending along the bottom of said channel-like shield having a wall adjacent said roller formed with discharge openings directed toward the latter, a pressure supply conduit for paint opening into said reservoir for supplying paint to the latter under pressure, said conduit including a rigid tubular section secured to said shield and projecting at right angles therefrom to provide a handle for grasping by the hand of an operator for manipulating said roller, and a finger actuatable valve on said section accessible to the thumb of said hand for actuating said valve to open and close said conduit to flow of paint to said reservoir.

4. A paint applying device comprising, a roller provided with a relatively soft paint applying exterior surface, an elongated channel-like shield, said roller being positioned longitudinally of said shield and partially within the latter, bearings respectively adjacent the ends of said shield supporting said roller for rotation, an elongated paint supply reservoir extending along the bottom of said channel-like shield having a wall adjacent said roller formed with discharge openings directed toward the latter, a pressure supply conduit for paint opening into said reservoir for supplying paint to the latter under pressure, said reservoir comprising a length of tubing separable from said shield with said openings formed in one side of said tubing, and said conduit including a rigid tubular section extending at right angles to said tubing in direction away from said roller and adapted to be employed as a handle for manipulating said roller, and means for securing said tubing to said shield.

5. A paint applying device comprising, a roller provided with a relatively soft paint applying surface material, an elongated channel-like shield, said roller including a central shaft, a core member rotatable on said shaft and a rigid, cylinder removably supported on said core member, said surface material being carried by said cylinder, end members on opposite ends of said shield, means for releasably securing the ends of said shaft to said end members, said core member

being in yieldable frictional engagement with said cylinder for their rotation together as a unit, a paint supply conduit secured to the bottom of said shield and extending perpendicularly therefrom in direction away from said roller, a paint distributing chamber along said bottom into which said conduit opens and having a perforated wall facing said roller for directing paint therefrom against the outer surface of said roller.

6. A paint applying device comprising, a channel-like shield having an open side, and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a perforated wall extending across said open side of said recess, a pressure conduit for supplying paint under pressure to the perforations for discharge of such paint therethrough toward the open side of said shield, a shaft carried at its ends by said end walls, a pair of bearings adjacent said end walls rotatable on said shaft, a resilient compressible core member extending between said bearings and connected therewith, a rigid cylinder enclosing said core member holding the latter under slight compression to provide tight frictional engagement between said cylinder and said core member for insuring their rotation together, means for releasably securing the ends of said shaft to said end walls, a relatively soft paint applying material covering said cylinder and secured thereto, in substantially wiping engagement with the inner sides of said shield.

7. A paint applying device comprising, a channel-like shield having an open side, and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a perforated wall extending across said open side of said recess, a pressure conduit for supplying paint under pressure to the perforations for discharge of such paint therethrough toward the open side of said shield, a shaft carried at its ends by said end walls, a pair of bearings adjacent said end walls rotatable on said shaft, a resilient compressible core member extending between said bearings and connected therewith, a rigid cylinder enclosing said core member holding the latter under slight compression to provide tight frictional engagement between said cylinder and said core member for insuring their rotation together, means for releasably securing the ends of said shaft to said end walls, a relatively soft paint applying material covering said cylinder and secured thereto, in substantially wiping engagement with the inner sides of said shield, said bearings extending over said core member at the ends of the latter for limiting outward expansion of said core member, and said cylinder extending over said bearings with the latter positioned close to said end walls.

8. A paint applying device comprising, a channel-like shield having an open side, and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a perforated wall extending across said open side of said recess, a pressure conduit for supplying paint under pressure to the perforations for discharge of such paint therethrough toward the open side of said shield, a shaft carried at its ends by said end walls, a pair of bearings adjacent said end walls rotatable on said shaft, a resilient compressible core member extending between said bearings and connected

therewith, a rigid cylinder enclosing said core member holding the latter under slight compression to provide tight frictional engagement between said cylinder and said core member for insuring their rotation together, means for releasably securing the ends of said shaft to said end walls, a relatively soft paint applying material covering said cylinder and secured thereto, in substantially wiping engagement with the inner sides of said shield, the ends of said cylinder and the surface material thereon being close to said end walls, and said end walls being of relatively thin material to enable said surface material to deposit paint relatively close to corners formed by adjacent walls of a room.

9. A paint applying device comprising, a channel-like shield having an open side and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a tube within said recess extending longitudinally thereof with one side thereof extending across the open side of said recess where it opens into the space between the sides of said shield, said one side of said tube being perforated for discharge of paint therefrom toward the open side of said shield, a roller extending longitudinally of said shield and partially into the latter having a relatively soft paint applying surface material closely adjacent said one side of said tube and the sides of said shield, means for removably supporting said roller ends on said end walls for rotation of said roller, a conduit for paint secured to said tube and to the bottom of said recess and opening into said tube for supplying paint under pressure thereto, said conduit including a rigid tubular extension connected to said shield and adapted to be employed as a handle for manipulating said roller.

10. A paint applying device comprising, a channel-like shield having an open side and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a tube within said recess extending longitudinally thereof with one side thereof extending across the open side of said recess where it opens into the space between the sides of said shield, said one side of said tube being perforated for discharge of paint therefrom toward the open side of said shield, a roller extending longitudinally of said shield and partially into the latter having a relatively soft paint applying surface material closely adjacent said one side of said tube and the sides of said shield, means for removably supporting said roller ends on said end walls for rotation of said roller, a conduit for paint secured to said tube and to the bottom of said recess and opening into said tube for supplying paint under pressure thereto, means for removably securing said tube within said recess whereby other similar paint distributing devices may be substituted therefore, and means for removably securing said surface material on said roller for substitution of similar surface materials but having different textures.

11. A paint applying device comprising, a channel-like shield having an open side and end walls closing its ends, the bottom of said shield being formed with a longitudinally extending recess having an open side directed toward the open side of said shield, a tube within said recess extending longitudinally thereof with one side thereof extending across the open side of said recess where it opens into the space between the sides of said shield, said one side of said tube being perforated for discharge of paint therefrom toward the open side of said shield, a roller extending longitudinally of said shield and partially into the latter having a relatively soft paint applying surface material closely adjacent said one side of said tube and the sides of said shield, means for removably supporting said roller ends on said end walls for rotation of said roller, a conduit for paint secured to said tube and to the bottom of said recess and opening into said tube for supplying paint under pressure thereto, said tube being closed at its ends by said end walls, and said conduit including a flexible hose having a rigid end section at one end terminating in an exteriorly threaded free end, said tube being formed with an interiorly threaded opening centrally between its ends and said free end of said rigid end section being threadedly engaged in said last mentioned opening.

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