April 29, 1969 R. S. BROWN 3,441,355

PRESSURE-SUPPLIED PAINT ROLLER

Filed May 12, 1967

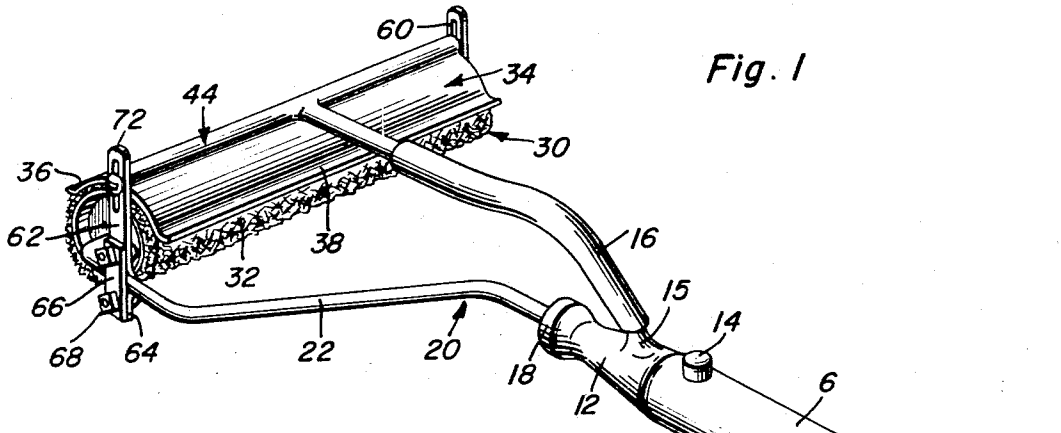


Fig. 1

Fig. 2

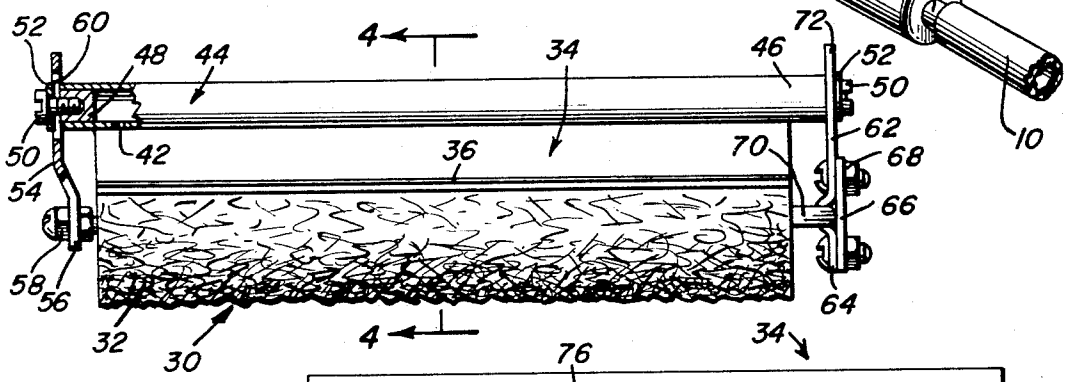


Fig. 3

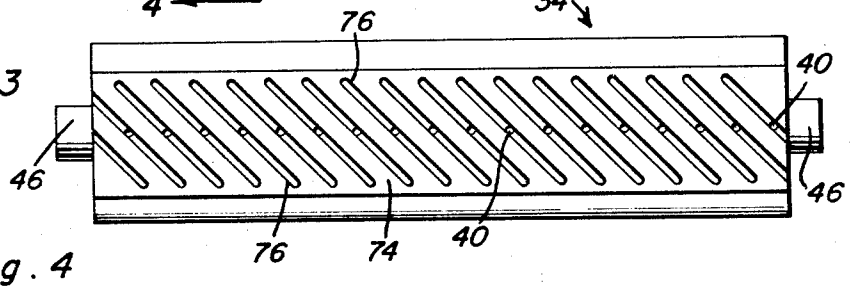
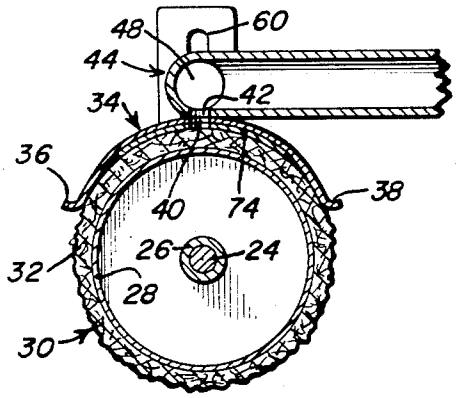


Fig. 4



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United States Patent Office 3,441,355 Patented Apr. 29, 1969

3,441,355

PRESSURE-SUPPLIED PAINT ROLLER

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Filed May 12, 1967, Ser. No. 638,121
Int. Cl. B44d 3/28, 3/00
U.S. Cl. 401—219 4 Claims

ABSTRACT OF THE DISCLOSURE

A valved reservoir provides a handle which has a pick-up hose at its trailing end and a delivery hose at its leading end. An L-shaped rod provides a shaft and shank, the latter being joined to said leading end. Usual type roller rotates on the shaft. A curvate shield and manifold unit is adjustably bracketed on the shaft. The manifold receives pressurized paint, has orifices which feed paint through ports which are aligned with plurality of diagonal slots formed distributively in a spreading plate in wiping contact with roller's applicator sleeve.

Background of the invention

This invention relates to certain new and useful improvements in a paint roller wherein paint under pressure is fed into the trailing or intake end of an elongated cylindrical reservoir and is forced through a delivery hose at the leading end into a simple tube-type manifold, more particularly, an apertured manifold which is an integral component of a shield. This shield is adjustably and detachably bracketed in place and is novel in that its concave side is equipped with uniquely arranged paint spreading and distributing slots.

Prior art

It is old in the art to force paint from a pressurized source of supply through a hose into a hollow handle and to deliver the paint under pressure through a valved line or hose to a shield equipped with a manifold and, as a matter of fact to so construct the shield and manifold that the paint will be spread on the roller-sleeve for distributive application to a wall or other surface which is being painted. This combination of admittedly old features is shown in the paint applicator roller of the patent to Magoon 2,654,107 and also in a slightly more significant and broadly analogous patent, namely, Whitfield et al. 2,898,618.

Summary

Briefly, the improved combination herein comprehended is characterized by an elongated handle-forming reservoir capable of dispensing a supply of paint under pressure and having a pickup and supply hose communicatively joined to a trailing end of said handle, the leading end of said handle having a communicable paint delivery hose attached thereto, a rod providing a roller journal or shaft in front of and at right angles to said leading end, said rod having a rearwardly laterally directed shank at one end, the rearward end of said shank being axial with and operatively joined to the leading end of said handle, a paint applying roller mounted for free rotation on said shaft and peripherally covered with an absorbent applicator sleeve, an elongated concave-convex shield commensurate in length with the length of said roller and having its concave side opposed and proximal to and having wiping

contact with a cooperating segmental surface portion of said sleeve, said concave side having paint distributing slots and complemental ports registering with said slots in a manner to effectually soak rotating surface portions of said sleeve with ample ready-to-use paint, an elongated manifold fixed atop the crest of the convex side of said shield and having paint dispensing orifices communicating with said ports and slots, means operatively mounting the ends of said manifold on the respectively coacting end portions of said shaft, and a paint inlet nipple carried by said manifold to which the aforementioned paint delivery hose is communicatively connected.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

Brief description of the drawing

FIG. 1 is a view in perspective of a pressure supplied paint roller constructed in accordance with the objectives and principles of the present invention.

FIG. 2 is a view on an enlarged scale looking at the front of the roller construction and with a portion at the left broken away and appearing in section to emphasize certain of the details of construction.

FIG. 3 is a bottom plan view of the improved shield and manifold unit and which emphasizes the slotted liner or plate which features the oriented and coordinated diagonal spreading and distributing slots.

And FIG. 4 is an enlarged detail section taken on the plane of the section line **4—4** of FIG. 2 looking in the direction of the arrows.

Description of the preferred embodiment

Referring now to FIG. 1 the numeral **6** designates the elongated cylindrical hollow barrel which constitutes a handle and also a reservoir whose trailing end at the right is provided with a neck **8** for the attachment thereto of a hose **10** which in practice is connected with a source of supply in the manner shown diagrammatically in the aforementioned patent to Magoon 2,654,107 and also (Fig. 1) of Whitfield et al. 2,898,618. The forward or leading end of the reservoir is tapered and reduced to provide a generally conical neck **12** to the right of which a suitable control valve **14** is provided. This neck in turn is provided with an auxiliary neck **15** with which a delivery hose **16** of the type illustrated is connected. The neck **12** is also provided with a terminal enlarged head **18** which carries a substantially L-shaped rod member **20**. One leg or limb provides a shank **22** and the other laterally directed leg provides an axle or shaft **24** on which the hub **26** of the paint roller **28** is mounted for free rotation in the manner suggested in FIG. 4. The roller **30** has its surface provided with an absorbent sleeve **32**.

The essence of the present contribution to the art resides in the novel means which is adjustably and detachably bracketed on the shaft **24** and which functions to spread and distribute the pressurized paint. This means comprises an arcuate or concavo-convex elongated first plate which is here designated as a shield **34** and which cooperates with a quarter-segment of the freely turnable paint roller **30** as brought out particularly in FIG. 4. The leading lengthwise edge at the left in FIG. 4 is de-

noted by the numeral **36** and the rearward or trailing lip or edge is denoted at the right as at **38**. The median portion between these two lips or edges **36** and **38** is provided with longitudinally spaced ports **40** which are arranged in a straight row. These ports are located so that they align and register with orifices **42** provided in the underneath or bottom part of the complemental tubing **44** which, more specifically, provides and constitutes the aforementioned paint delivering and distributing manifold. It should be noted that the tubing is slightly longer in length than the shield and that the end portions **46** project beyond and overhang the adjacent transverse ends of the shield. Then, too, these end portions are open in a manner to accommodate plugs **48** which as shown in FIG. 2 carry a screw-threaded fastener **50** and an accompanying washer **52**. A first bracket **54** is provided at the left as shown in FIG. 2 and it has its lower end portion **56** suitably attached as at **58** to an end portion of the roller supporting shaft. The upper slotted end portion **60** of this bracket is detachably and adjustably fastened to the means **48** and **50**. A similar construction is found in the second or complemental bracket **62** at the right. This is to say the bracket has a lower end portion **64** which is provided with a cleat **66** and fasteners or retainers **68** which are arranged and function to secure the bracket and cleat to the bent end portion **70** of the aforementioned shaft. Hereagain the upper slotted end portion **72** is connected to the assembling and retaining members which in this instance are the same as at the left and are therefore denoted by the same reference numerals **50** and **52**. It follows that the combination shield and manifold, as a unit, is detachably and adjustably mounted on the shaft whereby the concave or underneath side of the shield fittingly applies itself to the sleeve or applicator **32** in the manner illustrated in FIG. 4. To the ends desired the concave side is provided with spreading and distributing means for the paint. More specifically the means comprises an arcuate elongated plate **74** which is superimposed upon and fixed to the coacting surface of the shield. This plate provides a liner and is novel in that it is provided with a plurality of spaced parallel angularly or diagonally disposed paint receiving and distributing as well as spreading slots **76**. The slotted construction is shown in FIG. 3 wherein it will be observed that the slots are approximately as long as the width of the liner plate **74** and that they are in close spaced parallelism and that, what is more important, the aforementioned orifices **42** and ports **40** are lined up with the median portions of the slots. Consequently, when the paint is flowing under pressure it is distributively spread and applied to the roller in what is believed to be an evident manner. It follows that the invention well serves the purposes for which it is intended, that the features and advantages and the manner of use, being self-evident, a more detailed description is deemed to be unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A pressurized roller-type painting device comprising, in combination, an elongated hollow manually valved handle constituting a reservoir capable of receiving and dispensing a supply of paint under pressure and having a paint pick-up and supply hose communicatively joined to a trailing paint intake end of said handle, the leading end of said handle having a paint delivery hose communicatively attached thereto, a rod embodying a roller journalling shaft disposed in front of and at right angles to said leading end, said rod also embodying a rearwardly laterally directed portion providing a shank, the rearward end of said shank being coaxial with and integrally operatively joined to the leading end of said handle, a paint applying roller mounted for free rotation on said shaft and peripherally covered with an absorbent applicator sleeve, an elongated concavo-convex shield commensurate in length with the length of said roller and having its concave side opposed and proximal to and having wiping contact with a cooperating segmental surface portion of said sleeve, said concave side being provided with paint ejecting ports and complemental spreading and distributing slots, said ports registering with said slots in a manner to distributively soak rotating surface portions of said sleeve with paint, an elongated manifold fixed atop the crest of the convex side of said shield and having paint dispensing orifices communicating with said ports and slots, respectively, means operatively mounting the ends of said manifold on the respectively coacting end portions of said shaft, a paint inlet nipple carried by said manifold to which the aforementioned paint delivery hose is communicatively connected, the orifices in said manifold being longitudinally spaced apart in row alignment, said ports being likewise longitudinally spaced and arranged in a row and registering with their respectively cooperable orifices, said row of ports being located midway of and parallel to the lengthwise leading and trailing edges of said shield, said slots being relatively long compared with the size of the orifices and ports, respectively, being disposed in relatively close but spaced apart parallel relationship, and being diagonally angled to achieve adequate paint ejecting and uniform distributing results.

2. The roller-type painting device defined in and according to claim **1**, and wherein said concave side is provided with a fixed plate conforming in shape and length with said shield, said plate constituting a liner for said shield and said slots being formed within the marginal limits of and diagonally across said plate and said ports registering with median portions of the respectively cooperable diagonal slots.

3. The roller-type painting device defined in and according to claim **1**, and wherein the means operatively mounting the ends of said manifold comprises first and second brackets, said brackets having lower ends detachably mounted on coordinating end portions of said shaft and shank, respectively, and upper slotted end portions abutting and detachably and adjustably connected to the respectively cooperating ends of the manifold.

4. For use on and in association with handle-equipped rod means embodying a roller journalling shaft and a paint roller mounted for free rotation on said shaft, paint supplying and dispensing means comprising, in combination, an elongated concavo-convex roller shield having a row of close but longitudinally spaced paint dispensing ports midway between leading and trailing lengthwise edges of said shield, a concavo-convex plate conformably affixed to and substantially covering and lining a substantial portion of the concave surfaces of said shield, said liner plate having diagonal paint receiving and distributing slots extending transversely across but terminating short of said leading and trailing lengthwise edges, said slots being close together and substantially parallel with each other and said ports registering with limited median portions only of their respectively cooperable slots, a length of tubing fixed lengthwise atop the crest of the convex surface of said shield and having ends extending beyond the corresponding transverse ends of said shield, that portion of the tubing which is fixed having a longitudinal row of spaced orifices aligned with said ports, said tubing providing a paint accumulating and distributing manifold and having a paint intake nipple between the respective ends for attachment thereto of a pressurized paint delivering hose, and means located at the ends of said tubing for operatively mounting the same on coacting end portions of the aforesaid shaft, said means being located at the respective ends of said tubing and comprising first and second brackets having similarly constructed lower

end portions which are constructed and adapted to be detachably secured to coacting end portions of said rod means and slotted upper end portions which are detachably and adjustably bolted to the respectively cooperating ends of said tubing, whereby said shield can be adjustably mounted relative to an oriented coacting segment of the surface of said roller.

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LAWRENCE CHARLES, *Primary Examiner.*

U.S. Cl. X.R.

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