July 30, 1963 R. G. LELAND 3,099,034

PAINT ROLLER OF THE FOUNTAIN TYPE

Filed Jan. 29, 1962 2 Sheets-Sheet 1

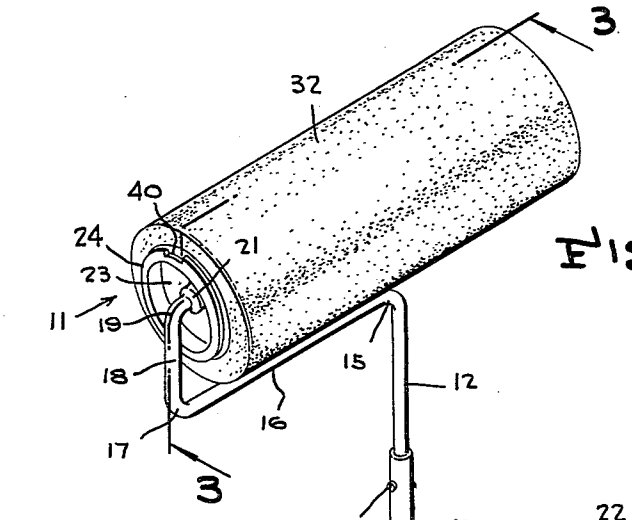


FIG-1

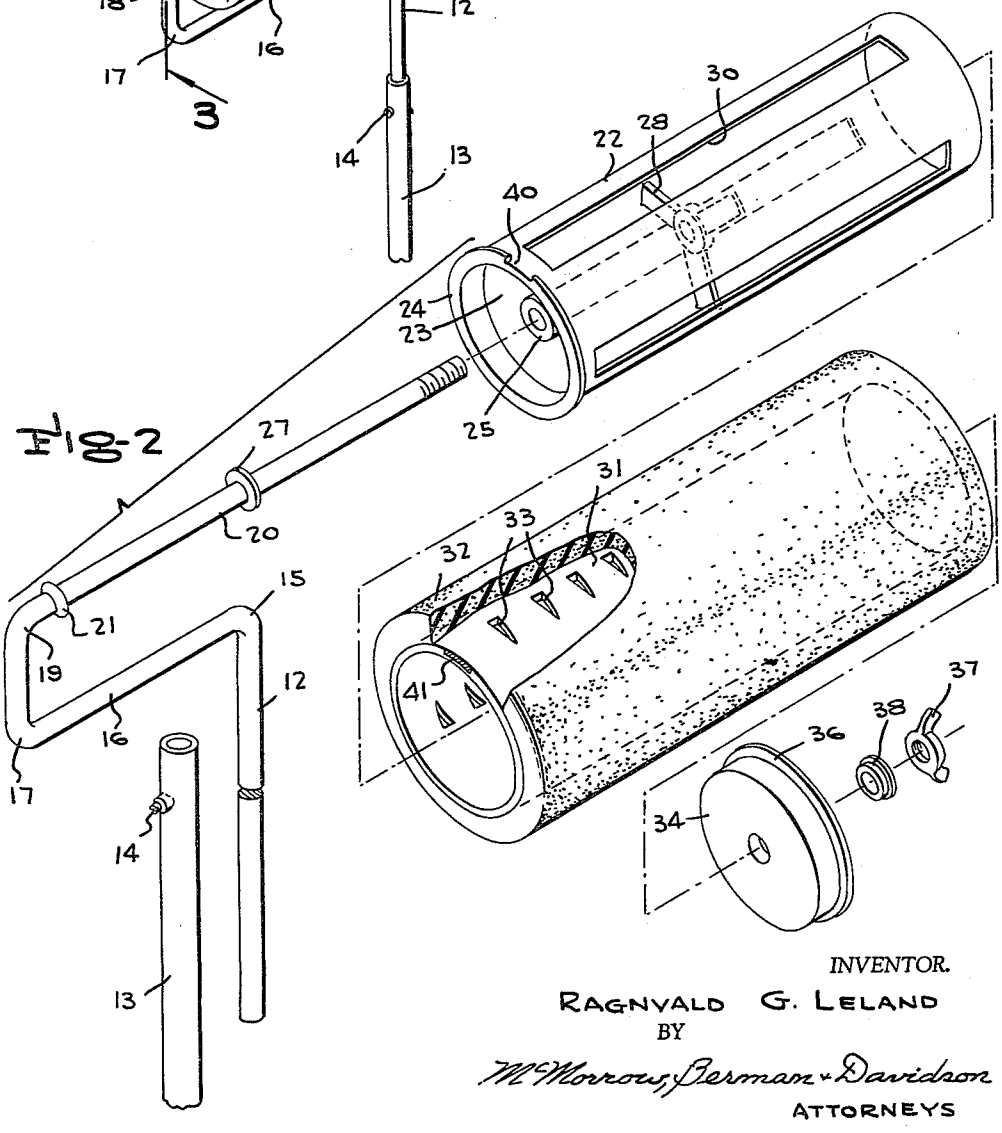


FIG-2

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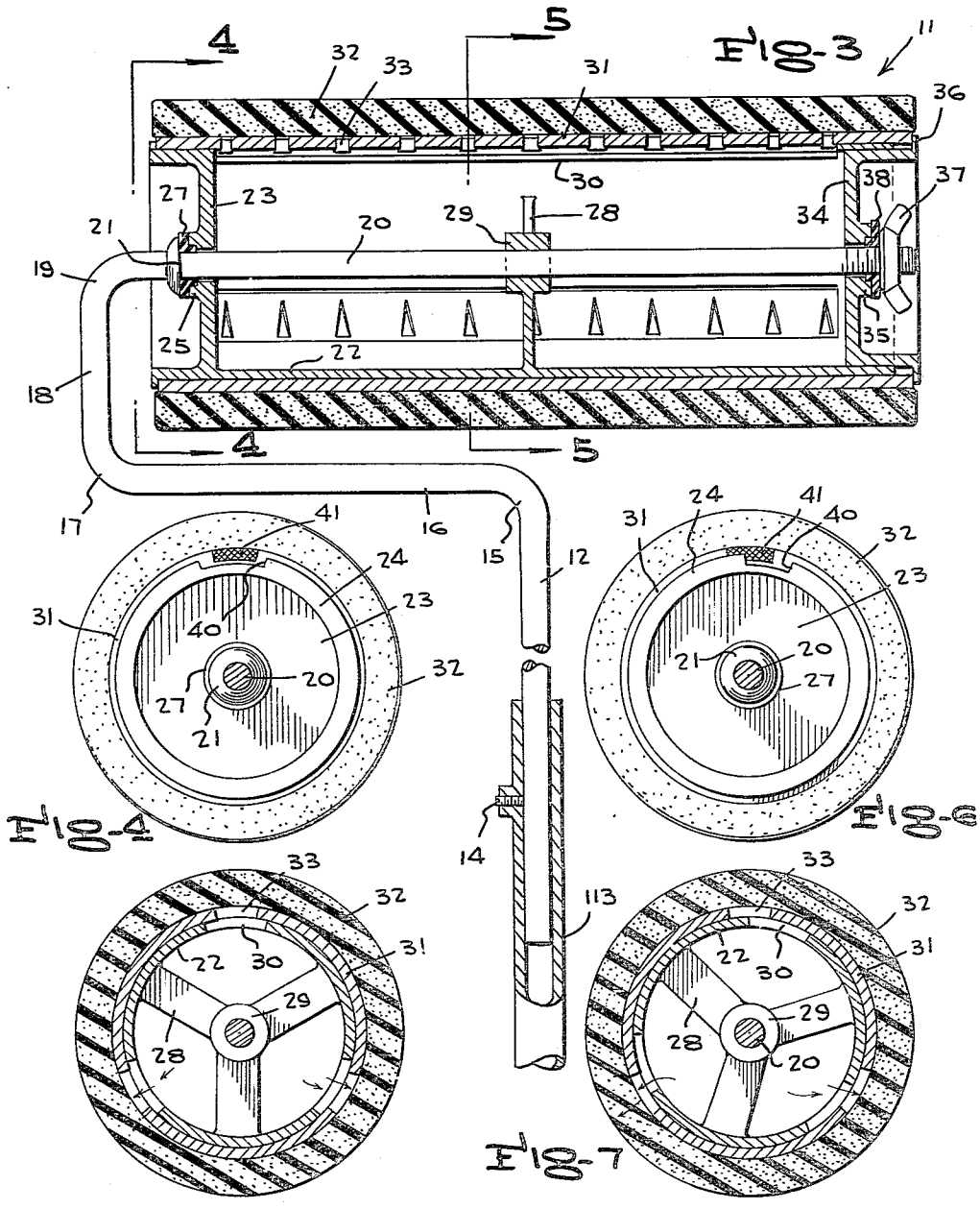


Fig-3

Fig-4

Fig-6

Fig-5

Fig-7

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PAINT ROLLER OF THE FOUNTAIN TYPE

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This invention relates to improvements in paint applicators, and more particularly to a paint roller of the fountain type.

A main object of the invention is to provide a novel and improved fountain type paint roller which is relatively simple in construction, which is easy to fill, and which is adjustable so that any desired degree of flow of paint from the interior thereof to the paint spreading surface thereof may be obtained.

A further object of the invention is to provide an improved paint applicator of the fountain type, said applicator involving relatively inexpensive components, being durable in construction, being easy to keep clean, and providing an accurately controllable rate of flow of paint therefrom.

A still further object of the invention is to provide an improved fountain type paint roller which is easy to use, which avoids leakage or loss of paint therefrom, and which is easy to refill whenever required.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

FIGURE 1 is a perspective view of an improved fountain type paint roller constructed in accordance with the present invention.

FIGURE 2 is an enlarged perspective view, with parts broken away, showing the components of the paint roller illustrated in FIGURE 1, said components being illustrated in separated positions.

FIGURE 3 is an enlarged longitudinal cross sectional view taken substantially on the line 3—3 of FIGURE 1.

FIGURE 4 is a transverse vertical cross sectional view taken substantially on the line 4—4 of FIGURE 3.

FIGURE 5 is a transverse vertical cross sectional view taken substantially on the line 5—5 of FIGURE 3.

FIGURE 6 is a vertical cross sectional view, similar to FIGURE 4, but showing a different adjustment of the degree of overlap between the slots of the paint container and the apertures of the paint spreading cylinder of the paint roller of FIGURES 1 to 3.

FIGURE 7 is a vertical cross sectional view similar to FIGURE 5 with the parts adjusted to correspond with FIGURE 6.

Referring to the drawings, **11** generally designates an improved fountain type paint roller constructed in accordance with the present invention. The paint roller **11** comprises a handle consisting of a rod-like main supporting portion **12** telescopically engaged in a suitable sleeve member **13** which may be of any desired length, the sleeve member **13** being provided with a clamping screw **14** which may be tightened to clampingly engage the rod-like main supporting portion **12**.

The handle is formed with a right angled bend at **15**, defining an arm **16**, which is also bent at right angles at **17**, whereby to define another arm **18** offset from and extending parallel to the main rod-like supporting portion **12**. The arm **18** is bent at right angles at **19** to define a shaft **20** extending parallel to the arm **16** and perpendicular to the main supporting rod-like portion **12**, but being coplanar with the elements **12**, **16** and **18**.

The shaft portion **20** is integrally formed adjacent the bend **19** with an abutment collar **21**. Designated at **22** is a cylindrical paint container formed at one end with a transverse wall **23** which is inwardly offset from the rim of the container **12**, said rim being formed with an outwardly projecting flange **24**, as is clearly shown in FIGURE 2.

End wall **23** is centrally formed with a bearing boss **25** which is centrally apertured to rotatably receive the shaft **20**. A suitable annular sealing bushing **27** of nylon, or similar durable deformable sealing material is interposed between the boss **25** and the abutment collar **21**, closely engaging on the shaft **20** and sealingly engaging against boss **25**.

The cylindrical paint container **22** is integrally formed at its intermediate portion with a plurality of inwardly extending radial struts **28** which merge with a bearing sleeve **29** rotatably receiving the shaft **20** and providing a bearing support for the container **22** on said shaft at its intermediate portion.

Container **22** is formed with a plurality of longitudinally extending slots **30** which are substantially coextensive in length with the container, as is clearly shown in FIGURE 2.

Designated at **31** is a rigid cylinder which is adjustably engaged on the cylindrical paint container **22**, closely engaging thereon, but being rotatable relative thereto. Secured on the rigid cylindrical member **31**, as by means of suitable adhesive, is an outer layer **32** of yieldable porous material, such as sponge rubber or the like, said outer layer being of substantial thickness and being adapted to serve as a paint carrying and spreading means when the roller is applied to a surface to be painted. The cylinder **31** is formed with a plurality of longitudinal rows of apertures **33**, said apertures being in the form of isosceles triangles elongated in the circumferential direction of cylinder **31**, as is clearly shown in FIGURE 2. The longitudinal rows of apertures **33** are spaced so as to be registrable with the longitudinally extending slots **30** of the cylindrical paint container **22**.

Designated at **34** is a generally circular flanged cover member which is of annular shape, as shown in FIGURE 3, and which is sealingly engageable in the end of container **22** remote from the wall **23**. The annular cover member **34** is formed with the annular central boss **35** adapted to receive the shaft **20** and being freely rotatable relative thereto. The annular cover member **34** is formed with the outwardly extending peripheral flange **36** which is engageable against the outer rim of the cylinder **31** in the manner illustrated in FIGURE 3 to transmit clamping force to said cylinder. A clamping nut **37** is threadedly engaged on the end of the shaft **20** and bears against an annular sealing washer **38** of nylon or similar durable deformable sealing material interposed between the wing nut **37** and the annular boss **35**. When the nut **37** is tightened, the cup member **34** exerts clamping force on the cylinder **31**, clamping said cylinder against the flange **24** of the paint receptacle **22**, thus holding the cylinder **31** in adjusted position relative to the container **22**, so that a desired amount of overlap exists between the apertures **33** and the slots **30**.

The flange **24** is formed with a notch **40**, and the end rim of the cylinder **31** is provided with an arcuately extending index mark **41** which is aligned with a row of apertures **33**. As shown in FIGURE 1, the notch **40** is aligned with a slot **30**, so that when the index mark **41** is centered in the notch **40**, the apertures **33** are in total registry with the slots **30**, as illustrated in FIGURES 4 and 5. However, any desired degree of registry may be obtained by rotatably adjusting the cylinder **31** relative to the container **22** and clamping these members in adjusted positions by tightening the nut **37**, for example, as illustrated in FIGURES 6 and 7.

In using the device, the container **22** is filled with paint, and the container is then closed by engaging the annular cover member **34** on the shaft **20** and securing said cover member by means of the wing nut **37**. The spreading cylinder **31** may be adjusted relative to the container **22** to provide a desired degree of overlap between the aper-

tures **33** and the slots **30**, whereby to provide a desired rate of flow of paint from the container **22** to the spreading cylinder, in accordance with the type of paint which is being used and with requirements associated with the surface to be painted.

As previously mentioned, when the nut **37** is tightened, the roller is sealed at the bearing bosses **25** and **35** by the sealing bushings **27** and **38**, said sealing bushings providing a substantially liquid-tight seal while at the same time allowing the roller to rotate freely on the shaft **20**. The device is used in the conventional manner, namely, is rolled on the surface to be painted, employing a sleeve member **13** as a gripping handle. Said sleeve member **13** may be of any desired length, depending upon the type of surface which is being painted. For example, in painting a ceiling, the sleeve member **13** may be of substantial length so that the device will extend to the ceiling without requiring the use of ladders of special scaffolding.

When the device is to be refilled, the cover member **34** is removed, providing access to the interior of the container **22**. When it is necessary to clean the paint distributing cylinder, comprising the rigid cylindrical member **31** and its adherent porous layer **32**, the cylinder **31** may be readily disengaged from the container **22** by removing the cover **34**, thus freeing the cylinder **31** for endwise removal from the container **22**. This enables the container **22** to be easily cleaned, as well as the paint spreading cylinder comprising the elements **31** and **32**.

While a specific embodiment of an improved paint roller of the fountain type has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinal slots and having outwardly projecting abutment means, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with apertures registrable with said slots, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral flange engageable against the other end of said paint spreading cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and hold the cylinder in adjusted position relative to the container.

2. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with at least one slot extending a substantial distance along its length, outwardly projecting abutment means at said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with apertures registrable with said slot, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral flange engageable against the other end of said cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against the abutment means and to hold the cylinder in adjusted position relative to the container.

3. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting abutment means at said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral flange engageable against the other end of the cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and to hold the cylinder in adjusted position relative to the container.

4. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting abutment means at said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral outwardly projecting flange engageable against the other end of the cylinder, a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and hold the cylinder in adjusted position relative to the container, and respective sealing bushings on the shaft between said abutment collar and the end of the container and between said nut and the cover.

5. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting flange means on said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said flange means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, said apertures being elongated in a circumferential direction, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral outwardly projecting flange engageable against the other end of the cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said flange means and to hold the cylinder in adjusted position relative to the container.

6. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting abutment means on said end of said container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, said apertures having the shape of triangles and being relatively elongated in a circumferential direction, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a pe-

ripheral flange engageable against the other end of the cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and to hold the cylinder in adjusted position relative to the container.

7. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting abutment means at said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, said apertures having the shape of triangles and being relatively elongated in a circumferential direction, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral outwardly projecting flange engageable against the other end of said cylinder, a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and to hold the cylinder in adjusted position relative to the container, and respective sealing bushings on the shaft between said abutment collar and the end of the container and between said nut and the cover.

8. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end thereof adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting flange means at said end of the container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said flange means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, said apertures being elongated in a circumferential direction, a circular cover suitably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral flange engageable against the other end of said cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said flange means and to hold the cylinder in adjusted position relative to the container, said handle comprising a rod-like main supporting portion, an extension sleeve telescopically receiving said main supporting portion, and means to clamp said extension sleeve to said main supporting portion.

9. A paint roller comprising a handle provided with a shaft, an abutment collar on said shaft, a cylindrical paint container rotatably mounted on said shaft with an end adjacent said collar, said container being formed with longitudinally extending slots, outwardly projecting abutment means at the end of said container, a paint spreading cylinder concentrically and adjustably mounted on said container with one end engaging said abutment means and having an outer layer of yieldable porous material, said cylinder being formed with longitudinally extending rows of apertures registrable with said slots, said apertures being elongated in a circumferential direction, a circular cover rotatably mounted on said shaft and engaged in the opposite end of said container, said cover having a peripheral outwardly projecting flange engageable against the other end of cylinder, and a nut threaded on the shaft outwardly adjacent the cover and being adapted to exert inward force on the cover, whereby to urge the cylinder against said abutment means and to hold the cylinder in adjusted position relative to the container, said outwardly projecting abutment means comprising a flange formed with a notch, and an arcuately extending index mark on the end of the cylinder adjacent said notch to indicate the degree of registration of said apertures with said slots.

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