Dec. 15, 1959 F. DE BOZZAY 2,916,755

SELF LOADING RAPID PAINTER

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Fig. 1

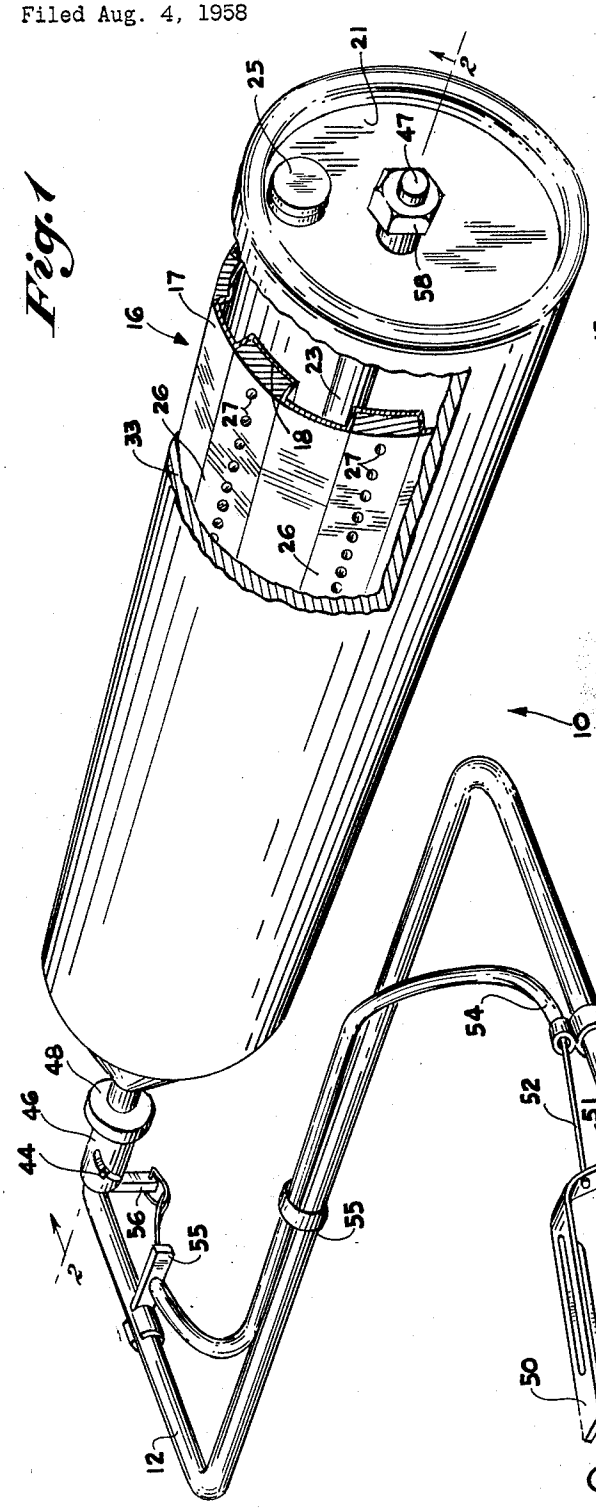
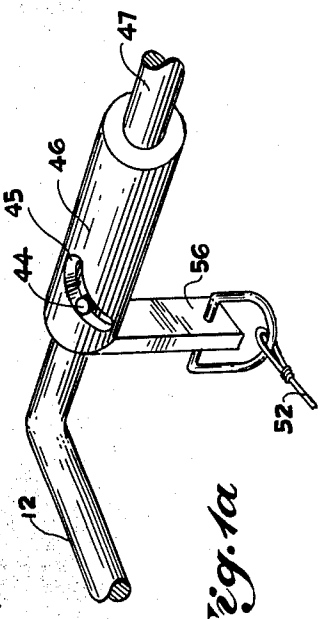


Fig. 1a



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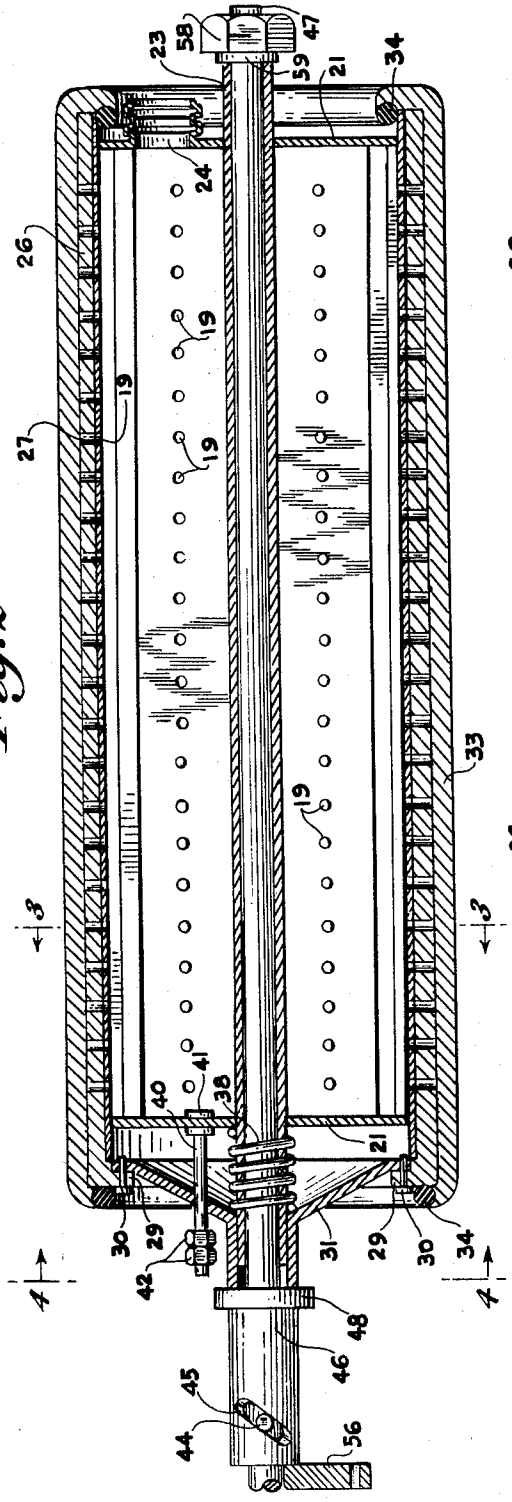


Fig. 2

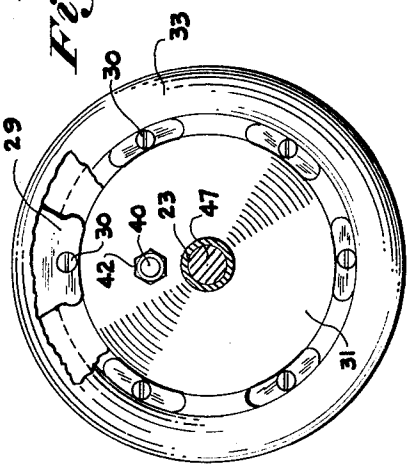


Fig. 4

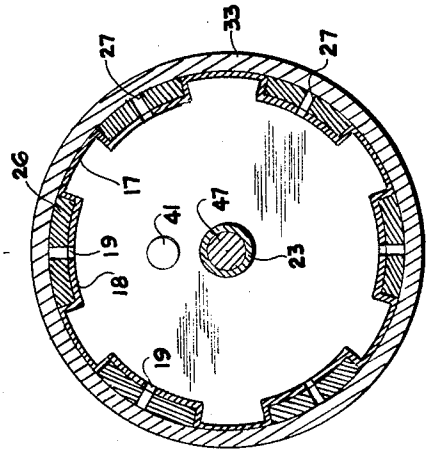


Fig. 3

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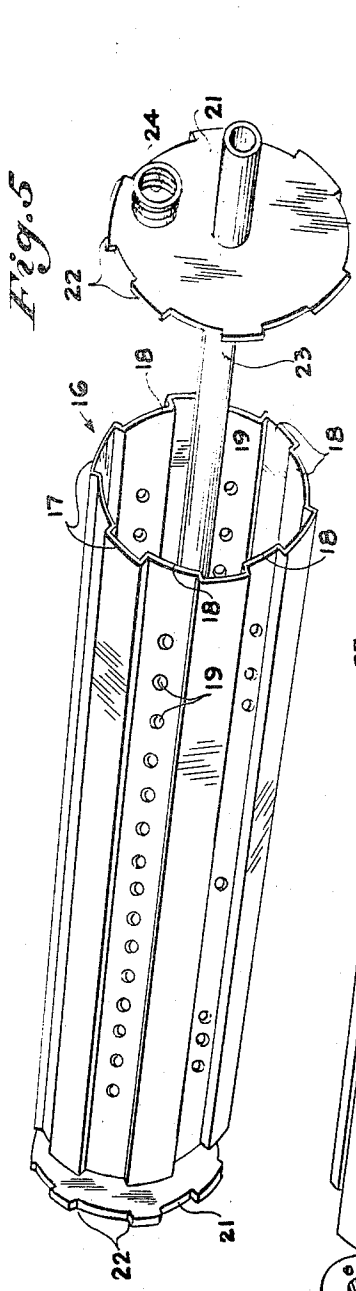


Fig. 5

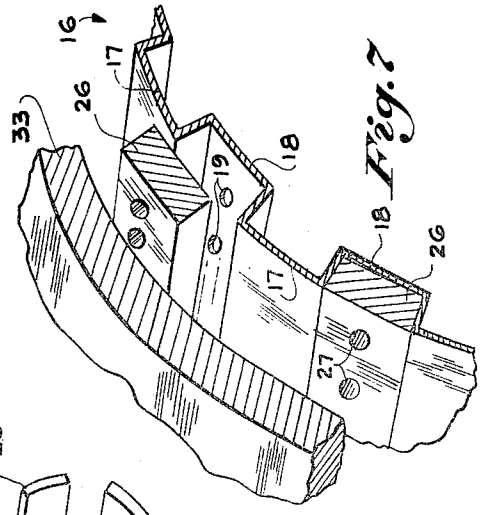


Fig. 7

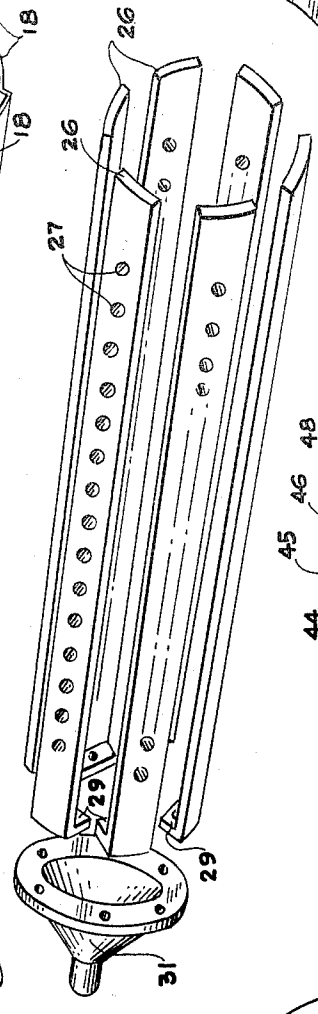


Fig. 6

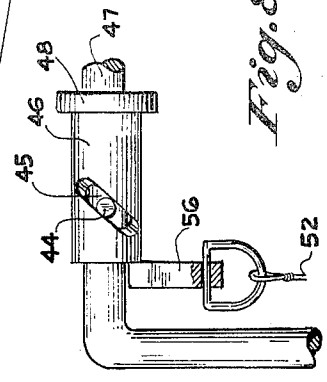


Fig. 8

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SELF LOADING RAPID PAINTER

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4 Claims. (Cl. 15—132.5)

This invention relates to painting apparatus and, more particularly, to a roller type applicator.

There has been a constant need for a paint applicator that will apply paint smoothly to a surface in a quick and efficient manner, with a minimum amount of waste, and without danger of soiling nearby objects. Accordingly, it is an object of the present invention to provide a self loading rapid applicator that is extremely simple in construction, efficient in operation, and which will provide all of the foregoing features.

Another object of the present invention is to provide a liquid coating applicator that is simple to handle, constantly ready to paint after loading, and which will fully and completely utilize all of the liquid material stored therewithin.

Still another object of the present invention is to provide a liquid coating applicator of the type described that will automatically feed liquid coating material to the applicator for smooth and uniform coating of any desired surface.

An additional object of the present invention is to provide a liquid coating applicator of the above type in which the paint stored therewithin is constantly mixed so as to further enhance the finished results attained thereby.

Still another object of the present invention is to provide a liquid coating applicator for applying various types of liquids to all types of surfaces that is extremely simple in construction, and which can be manufactured in large quantities at relatively low cost.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view, with parts broken away, of an applicator made in accordance with the present invention;

Figure 1*a* is an enlarged fragmentary perspective view of certain parts of the apparatus shown in Figure 1;

Figure 2 is a longitudinal cross sectional view taken along line 2—2 of Figure 1;

Figure 3 is a transverse cross sectional view taken along line 3—3 of Figure 2;

Figure 4 is a transverse cross sectional view taken along line 4—4 of Figure 2;

Figure 5 is an exploded perspective view of a drum forming a part of the present invention;

Figure 6 is an exploded perspective view of certain control elements forming another part of the present invention;

Figure 7 is a fragmentary exploded perspective view, in cross section, of certain parts of the apparatus shown in Figures 5 and 6 in assembled relationship; and

Figure 8 is a fragmentary plan view of certain control elements forming another part of the present invention.

Referring now to the drawing, and more particularly to Figure 1 thereof, a liquid coating applicator **10** made

in accordance with the present invention is shown to include a main U-shaped rod **12** that forms a supporting frame for the roller and is provided with a handle extension **13**. The applicator or coating roller is supported upon one rod or leg of the U-shaped frame and includes a drum **16** which is provided with an undulated surface that defines alternating crests **17** and valleys **18**. Equally spaced apart bores **19** extending through the valleys **18** of the drum provide communication with the interior of the drum which is completely closed by end walls **21** that are connected to the opposite ends of the cylindrical drum. These end walls **21** have radially extending projections **22** which fit into the undulating portions of the drum so as to provide a completely tight seal therebetween. An access opening **24** in one of the end walls **21** provides means for filling the interior of the drum with the coating liquid, such as paint or wax. A removable cap **25** retains the coating material within the drum so that it can only escape therefrom through the longitudinally spaced apart bores **19**.

Control elements are provided for selectively sealing the bores **19** and opening them to allow a desired quantity of liquid material contained within the drum to escape outwardly to be absorbed by a porous cover **33** which forms an exterior coating surface. In order to control this flow of fluid, the control elements, including bars **26** having equally spaced apart bores **27** are slidably supported within the valleys **18** of the drum. One end of each of the bars **26** is provided with a flange **29** which are attached, by means of pins or rivets **30** to a flange of a conical plate **31**. It will thus be recognized that axial longitudinal movement of the conical plate **31** relative to the drum **16** is operative to effect longitudinal sliding movement of the bars **26** to move the associated bores **27** into and out of communication with the outlet bores **19** of the drum, thus controlling the outward flow of liquid from the interior of the drum. The drum **16** also includes an integral sleeve **23** that extends longitudinally through the interior thereof and outwardly through both end walls **21**. This sleeve slidably and rotatably receives the supporting rod **47** of the U-shaped base and slidably supports the conical plate **31** thereon for reciprocating longitudinal movement. A compression spring **38** acting between the conical plate **31** and an adjacent end wall **21** of the drum normally urges these parts in opposite directions, movement in one direction being limited by the position of stop nuts **42** upon a longitudinally extending pin **40** which is slidably received through the conical plate **31** and is secured by means of an enlarged head **41** to the adjacent end wall **21** of the drum. By adjusting the position of the nuts **42**, it is possible to control the extent of movement of the parts by the spring **38** so that in the stopped position, the outlet bores **19** of the drum are out of alignment with the spaced apart bores **27** in each of the bars **26**, thus normally preventing the escape of the liquid from the interior of the drum.

The rod **47** includes a radially outwardly extending cam pin **44** which is slidably received within a segmental spiral slot **45** in a collar **46** that is longitudinally and rotatably displaceable upon the rod **47**. A washer **48** interposed between the collar **46** and the conical plate **31** provides for relative rotational movement therebetween. An actuating handle type lever **50** hingedly supported upon the handle extension **13** of the base frame by means of a pivot pin **51** is operative to control the movement of the collar **46**. A flexible cable **52** extending through a sheath **54** which is clamped to the base frame by means of spaced apart guides **55**, is connected at opposite ends to a mid section of the handle **50** and the outer end of a radially extending arm **56** which is

integral with the collar 46. Thus, by depressing the handle 50, the pull upon the cable 52 is operative to cause partial rotation of the collar 46, thus effecting longitudinal movement thereof slightly along the length of the rod 47 by the combined action of the cam pin 44 and follower slot 45. This longitudinal movement of the collar 46 effects longitudinal movement of the bars 26 which are connected to the conical plate 41, a predetermined distance to enable the bores 27 of the bars to move into alignment with the outlet bores 19 of the drum, thus allowing a quantity of fluid to escape outwardly into contact with the porous cover 33. It will be noted that this cover is removably carried upon the assembled drum and control bars by means of elastic bands 34 at the opposite ends thereof. Similarly, the entire roller assembly is maintained in assembly with the supporting rod 47 by means of a lock nut 58 and washer 59.

In actual use, the interior of the drum is filled with liquid of any desired type through the access opening 24. Thus, as the liquid is applied to the surface, additional liquid may be admitted into contact with the porous cover 33 for actuating the control handle 50 so that the roller is constantly supplied with the coating fluid, thus saving time, and allowing for a uniform application of the coating material. Since the drum is constantly rotating, the liquid contained therewithin is being mixed constantly, so that there are no streaks or differences of any kind between subsequent applications of the material.

While this invention has been described with particular reference to the construction shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claims appended hereto.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A liquid coating applicator comprising, in combination, a handle, a roller rotatably supported upon said handle, said roller having portions defining a reservoir, the exterior surface of said roller comprising a porous layer, and manually controlled means for supplying said liquid from said reservoir to said porous layer, said roller portions defining said reservoir comprising a drum having an undulating cylindrical wall with a plurality of longitudinally extending alternating crests and valleys, an end wall secured to each end of said cylindrical wall, an access opening in one of said end walls for filling the interior of said drum with fluid, a removable closure covering said access opening, said manually controlled means

comprising a plurality of bars one slidably supported within each of said valleys of said drum, a plurality of equally spaced apart bores extending through each valley portion of said drum, a plurality of equally spaced apart bores through each one of said bars, and motion transmitting means selectively displacing said bars within said valleys for moving said bores of said bars between open and closed positions into and out of alignment respectively with said bores of said drum, said porous layer overlying said bars, said handle comprising a rod, a sleeve concentrically integral with said drum slidably and rotatably receiving said rod, abutment means on said rod for bearing engagement with an end of said sleeve at one end of said drum, said motion transmitting means comprising a conical sleeve slidably supported upon said rod at the other end of said drum, each of said bars being connected in circumferentially spaced relationship with the periphery of said conical sleeve, spring means normally biasing said conical sleeve and drum apart so as to maintain the bores of said bars in said closed position, and cam means for effecting reciprocating longitudinal movement of said conical sleeve toward said roller against the action of said spring means to move the bores of said bars into said open position.

2. A liquid coating applicator as set forth in claim 1, wherein said cam means comprises a pin extending radially outwardly from said rod, a collar rotatably and slidably supported upon said rod abutting said conical sleeve, and a spiral slot in one side of said collar receiving said radial pin, whereby rotation of said collar effects simultaneous longitudinal movement thereof.

3. A liquid coating applicator as set forth in claim 2, further comprising an arm extending radially outwardly from said collar, and cable means connected to said arm for effecting rotation thereof.

4. A liquid coating applicator as set forth in claim 3, wherein said cable means comprises a flexible cable, and a lever carried by said handle for selectively tensioning said flexible cable.

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