Nov. 19, 1957 Q. W. McLENDON 2,813,292

PAINT APPLICATORS OF THE MANUALLY OPERATED ROLLER TYPE

Filed Oct. 22, 1956 2 Sheets-Sheet 1

Fig. 1.

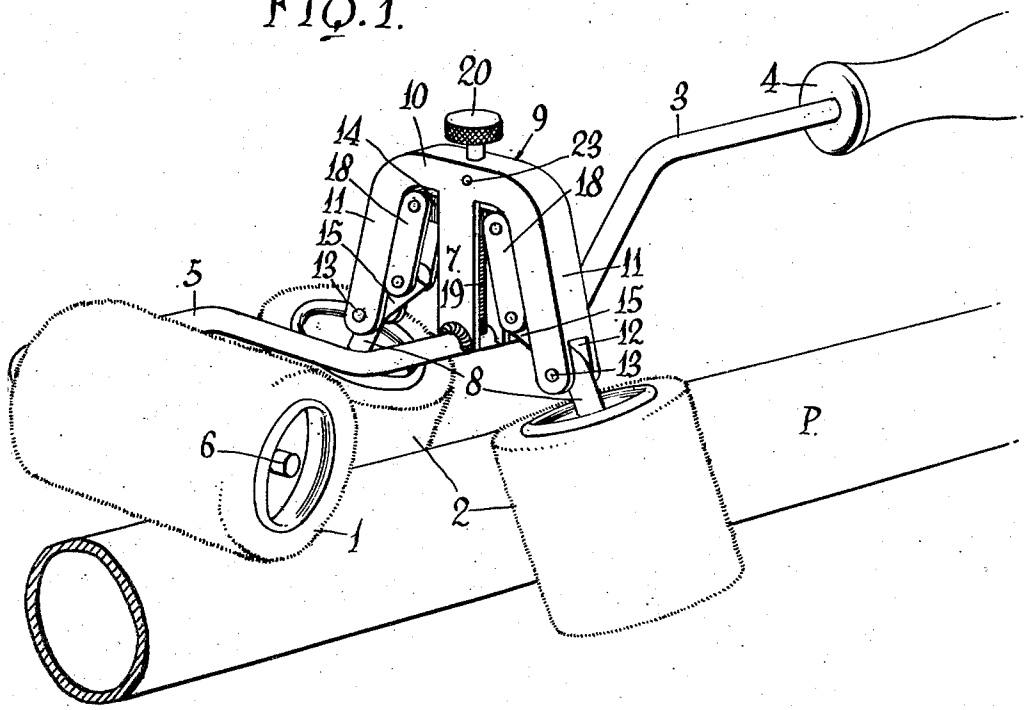
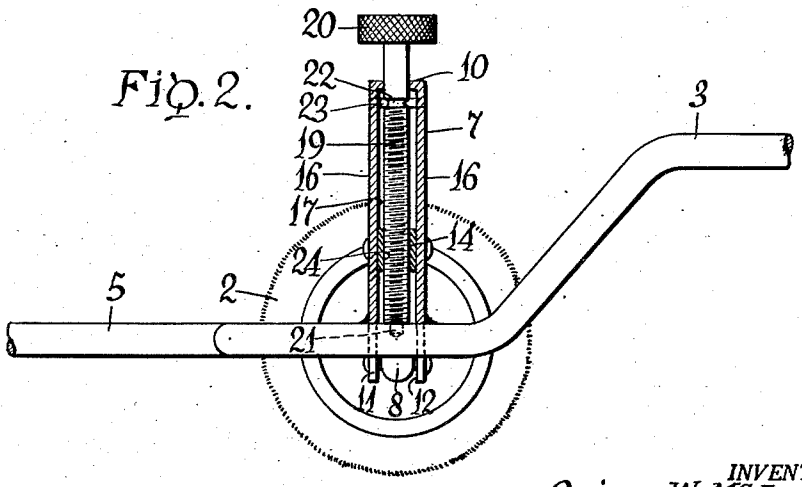


Fig. 2.



INVENTOR.
Quincy W. McLendon,
BY
John S. Powers
ATTORNEY.

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Filed Oct. 22, 1956 2 Sheets-Sheet 2

FIG. 6.

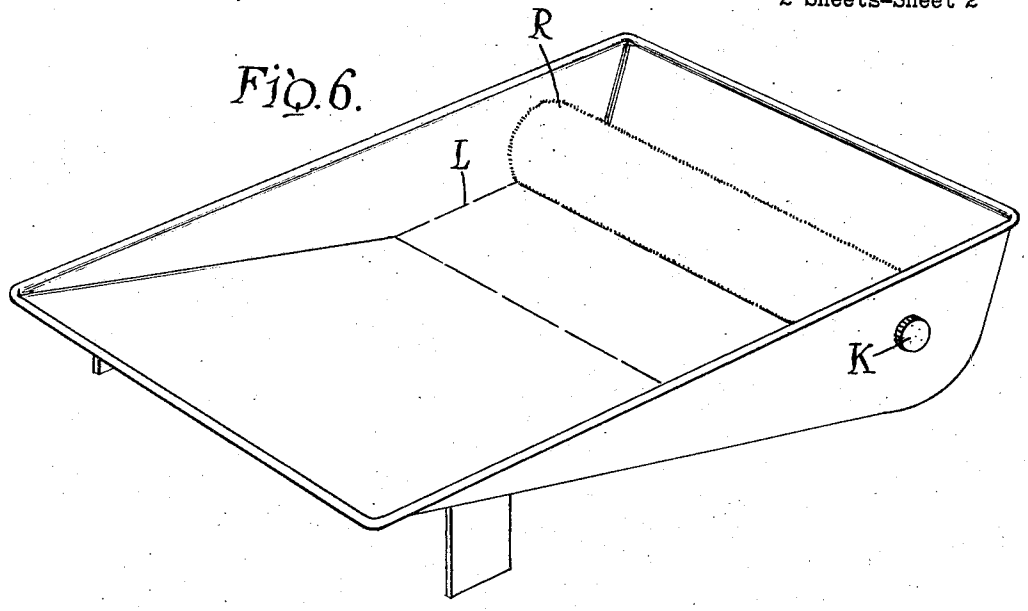


FIG. 3.

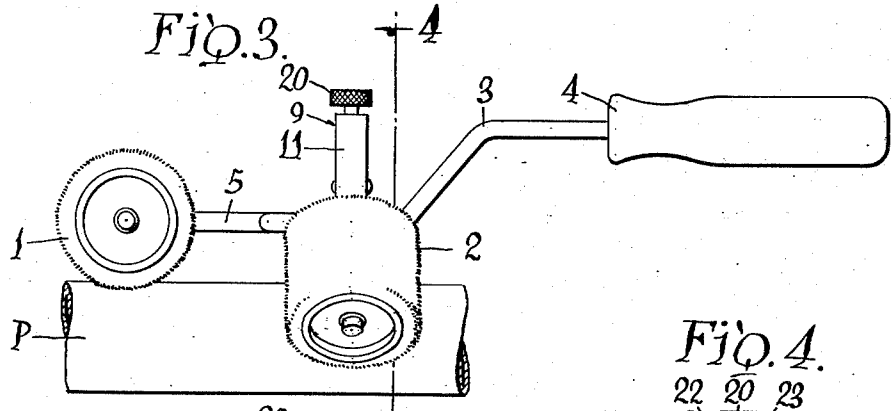
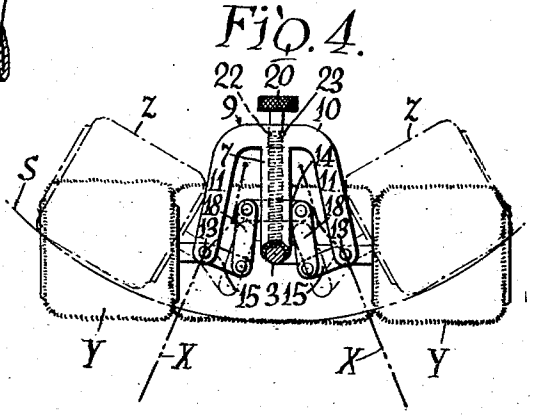


FIG. 4.



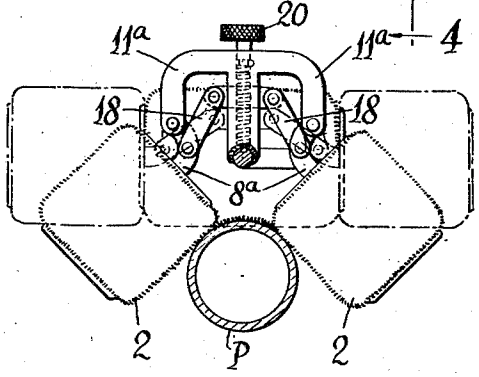


FIG. 5.

INVENTOR.
Quincy W. McLendon,
BY
Johns Powers
ATTORNEY

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PAINT APPLICATORS OF THE MANUALLY OPERATED ROLLER TYPE

Quincy W. McLendon, Marietta, Ohio

Application October 22, 1956, Serial No. 617,344

5 Claims. (Cl. 15—230)

This invention relates to improvements in paint applicators of the manually operated roller type.

As heretofore known such applicators have embodied a single roller transversely arranged with reference to an elongated longitudinally extending handle, the roller having a surface layer of yieldable and permeable paint carrying material. As compared with paint brushes the known roller applicators have had the advantages of much greater facility and convenience in use and of a great saving of time in the completion of the painting job. One field in which these advantages have been of particular importance is the external painting of pipes in situ. In such use the strokes of the applicator are lengthwise of the pipe and after a stroke has been completed the applicator is shifted to a different position along the periphery of the pipe in preparation for another stroke, the number of strokes necessary for the complete painting of a peripheral section varying with the diameter of the pipe. Of necessity the width of the coating applied by the applicator in a single stroke is quite limited, regardless of the length of the roller, as compared with the peripheral extent of the pipe. In many instances of the industrial use of pipes of relatively large diameter (or other analogous bodies of circular or otherwise curved cross section) it is essential for their protection against the corrosive effects of liquid or gaseous chemical compounds that they be protected by an internal coating of appropriate paint. The known manually operated roller applicators cannot be practically or economically used for this purpose.

The objects of the invention are: (1) an applicator of the roller type which will paint a stroke of much greater width than can be painted by the prior roller applicators, that is to say a stroke having a width approximately three times greater, and hence which will enable the complete painting of a peripheral section of the pipe with a substantially less number of strokes, thereby enabling the pipe to be painted much more rapidly and with much less physical effort; (2) an applicator which will serve the above object in connection with pipes within an extensive range of varying diameters; (3) an applicator which may be used for the painting of flat surfaces and in such use will have a painting stroke substantially as wide as the painting stroke of the prior roller applicators; (4) an applicator which may be used for the internal painting of pipes of relatively large diameter or other analogous bodies of circular or otherwise curved cross section; and (5) an applicator which may be adapted quickly and with facility for the external painting of pipes of varying diameters, the painting of flat surfaces or the internal painting of pipes of relatively large diameters.

With the above objects in view the applicator of this invention is characterized by the provision of three paint applying rollers, viz., a central roller and two lateral rollers projecting in symmetrically angular relation beyond the ends of the central roller, the major axes of the lateral rollers being adjustable angularly and symmetrically throughout a wide range relatively to one another and to the major axis of the central roller, means for the quick and facile adjustment of the angular relation of the lateral rollers, and an elongated supporting bar provided with a handle and which carries the rollers and the various associated parts. An applicator in accordance with the invention may, in respect to the angular relation of the axes of the lateral rollers, have a range of adjustment decreasingly from a painting stroke of the order of a maximum of 130° of the peripheral arc and may be made in a form which is limited in utility to the external painting of pipes and the painting of flat surfaces or in a form which is additionally available for the internal painting of pipes or analogous bodies of relatively large diameter.

In the drawings:

Figure 1 is a perspective view showing the preferred form of an applicator in accordance with the invention in operative relation to a pipe for the painting of its external surface.

Figure 2 is a vertical longitudinal sectional view showing certain details of the means for adjusting the angular relation of the lateral rollers.

Figure 3 is a side elevation of the applicator shown in Figure 1.

Figure 4 is a transverse section on the line 4—4 of Figure 3, but with the rollers shown in full lines for the painting of a flat surface and in broken lines for the painting of the internal surface of a pipe of relatively large diameter.

Figure 5 is a transverse section, in the same plane as Figure 4, showing an alternative form limited in utility to the external painting of pipes or the painting of a flat surface.

Figure 6 is a perspective view of a pan which holds the paint.

The applicator includes a central paint applying roller 1 and two lateral paint applying rollers 2. The rollers 1 and 2 are each of the same construction as the single roller used in the known manually operated applicator and have the usual surface layer of yieldable and permeable paint carrying material. The rollers and the associated parts are carried by a longitudinally extending supporting bar 3 which at its rear end has a handle 4 and at its front end is formed with an offset portion 5 of U-shaped outline having a transverse foremost leg 6 which provides an axle upon which the roller 1 is mounted.

Referring to Figures 1 to 4:

The bar 3, at a point behind the offset portion 5, carries a post 7, the major axis of which is at a right angle to the major axis of the leg 6 upon which the roller 1 is mounted. Figure 4 shows the roller 1 in a horizontal position and the post 7 in a vertical position in which it extends upward from the bar 3. The rollers 2 are mounted upon axles 8 which are carried by a bracket 9 of substantially inverted U-shape having a central bow portion 10 and opposed arms 11 which project from the ends of the bow portion 10. The arms 11 have recesses 12 at their free ends to accommodate the axles 8 which are connected to the bracket 9 by pivot pins 13, the axles 8 extending symmetrically outward from the arms 11 at any predetermined angle within the range of positional adjustment of the rollers 2.

The positional adjustment of the rollers 2 is effected by the movement of a transverse yoke piece 14 along the length of the post 7. The axles 8 are formed with extensions 15 which project inwardly from the pivots 13. The post 7 is connected to the bow portion 10 at a central point, being preferably integral with it, and has a central position between the arms 11. The post 7 is formed with opposed front and rear walls 16 which pro-

vide a vertical slot **17** in which the yoke piece **14** is accommodated, the projecting end portions of the yoke piece **14** being connected to the ends of the axle extensions **15** by links **18**.

The adjustable movements of the yoke piece **14** are effected by a screw stem **19** which extends between the walls **16** of the post **7** and projects beyond the bow portion **10**, its outer end being provided with a finger piece **20** and its inner end having a reduced extension **21** which fits in a recess in the bar **3**. The stem **19** has a swivel connection to the post **7** which holds it against displacement axially of the post and for this purpose is formed with an annular groove **22** to accommodate a securing pin **23** which extends between the walls **16**. The yoke piece **14** has a centrall located internally threaded bore **24** through which the stem **19** extends in thread meshing relation whereby when the stem is turned, and according to the direction in which it is turned, the yoke piece **14** will be moved toward or from the bow portion **10** of the bracket **9**. Such movement of the yoke piece **14** effects the angular positional adjustment of the rollers **2** which may be best suited for the particular job.

Figure 1 illustrates the use of the applicator for the external painting of a pipe P and assumes the particular positional adjustment of the rollers **2** best to accord with the diameter of the pipe. As shown in Figure 1 the roller **1** extends transversely with reference to the rollers **2** which, relatively to the roller **1**, are in symmetrically angular positions. The surfacing material of the rollers having been initially saturated with paint, the applicator is applied with suitable pressure to the pipe P and moved along its length. In this example the painting stroke produced by the three rollers is of the order of 130° of the periphery of the pipe. When the painting stroke has been completed the applicator is shifted about the periphery of the pipe to a position in which it effects another painting stroke of like peripheral extent, such peripheral shifting of the applicator being repeated until the pipe is painted throughout its peripheral and longitudinal extent.

In Figure 4 the positional adjustment of the rollers **2** as shown in Figure 1 is indicated by the dot and dash construction lines "X." The rollers **2** are adjustable from the positions "X" to the positions "Y" in which they are shown in full lines wherein their axles are in alinement and they are available for the painting of a wide stroke on a flat surface. It will, of course, be understood that the rollers **2** may be adjusted to any angular position intermediate the positions "X" and "Y" for the painting of pipes of greater diameter than that assumed for the pipe P of Figure 1.

The form of the applicator shown in Figures 1 and 4 is such that, with reference to the angle formed by the lines "X," the rollers **2** may, within a practical range, be set at a re-entrant angle as shown at "Z" for the painting of the internal surfaces, indicated by the dot and dash line "S," of pipes of large diameter or of other cylindrical bodies, for example the bodies of bubble towers, dephlegmators or pressure filters for industrial use. If the longitudinal extent of the internal surface be such that the stroke cannot be completed by the use of the handle **4** an auxiliary handle of suitable length, illustration of which is unnecessary, may be connected to the bar **3**.

Referring to Figure 5:

The form shown in this figure embodies the same essential structural characteristics and features of operation as the form shown in Figures 1 to 4, differing, however, in that the parts are formed and proportioned whereby the utility of the applicator is limited to the external painting of pipes or to the painting of flat surfaces. In this form the axles of the rollers **2** have curved extensions **8***a* which project beyond the inner ends of the rollers and at their ends are pivoted to arms **11***a* which correspond to the arms **11** of the construction shown in Figures 1 to 4. The links **18** are pivotally connected at their outer ends to the extensions **8***a* at points between their pivotal connections to the arms **11***a* and the inner ends of the rollers **2**. The means for the adjustment of the angular positions of the rollers **2** and the manner of such adjustment are the same as in the embodiment shown in Figures 1 to 4.

Referring to Figure 6:

The paint holding pan shown in this figure conforms in outline to the pans which are provided for use with the manually operated roller type paint applicators of the prior art. It differs, however, in the provision of a roller R mounted transversely at its deeper end with its lower portion submerged in the paint which is kept at the approximate level L indicated by dot and dash lines. The roller R has a surface covering of paint absorbing material and its shaft carries at one end a turning knob K. When paint is to be applied to the applicator the rollers **2** are set at a suitable angle and the rollers **1** and **2** are pressed upon the roller R and moved along its length in the same way that they are moved along the pipe P in effecting a painting stroke. In this way the covering material of the rollers **1** and **2** is saturated with paint which is drained from the roller R, none of the paint, however, having access to any part of the mechanism for effecting the angular positional adjustment of the rollers **1** and **2**. After the paint has thus been transferred from the roller R to the rollers **1** and **2** the knob K is turned to expose the saturated portion of the roller R and to submerge the portion thereof which was drained by the applicator.

In the following claims words signifying directions or positions, such as "upward," "downward," "vertical," "front" and "rear," are used as a matter of brevity and convenience with reference to the positions of the parts as shown in the drawings.

I claim:

1. A manually operated paint applicator of the roller type comprising, in combination: a longitudinally extending supporting bar having a handle at its rear end and an offset portion at its front end, a transversely extending paint applying roller supported by the offset portion, a bracket supported by the rod at a point behind the transverse roller and having two opposed arms, one at each side of the rod, two lateral paint applying rollers, an axle for each of the lateral rollers, the axles having at their inner ends extensions which project beyond the lateral rollers and are pivotally connected to the respective arms of the bracket, and manually operated means connected to the extensions of the axles for holding the axles symmetrically in positions of angularity with reference to one another and to the major axis of the transverse roller and for adjustably moving the axles to a predetermined angular position.

2. A paint applicator as set forth in claim 1 wherein the bracket is of inverted U-shape, has a central bow portion and has its arms extending downward from the bow portion, and a post is fixed to and extends upward from the supporting bar, is rigidly connected to the bow portion at a point central thereof and is centrally located between the arms.

3. A paint applicator as set forth in claim 1 wherein the bracket is of inverted U-shape, has a central bow portion, and has its arms extending downward from the bow portion, a post is fixed to and extends upward from the supporting bar, is rigidly connected to the bow portion at a point central thereof and is centrally located between the arms, the post being formed with opposed front and rear walls which provide a slot, and the manually operated means includes a yoke piece which extends transversely through the slot, projects at each side of the post and has a central threaded bore, links connect the yoke piece to the extensions of the axle and a screw stem extends through the post in thread meshing relation to the bore and has a swiveled connection to the post, the

screw stem projecting beyond the post and having a finger piece at its free end.

4. A paint applicator as set forth in claim 3 wherein the links are connected to the ends of the extensions of the axles.

5. A pain applicator as set forth in claim 3 wherein the arms are connected to the ends of the extensions of the axles.

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