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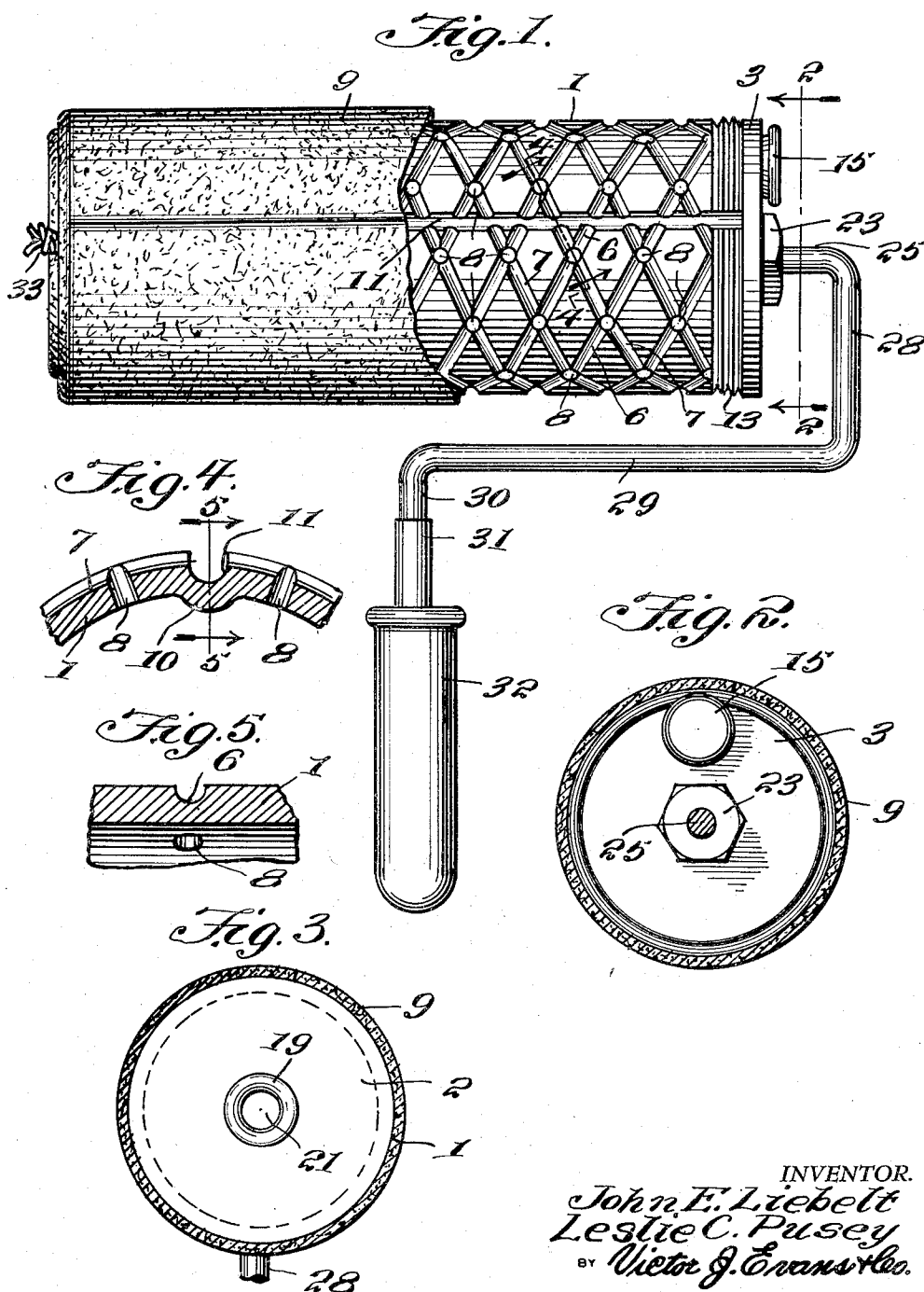
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2,563,049

SELF-DISPENSING ROLLER FOR APPLYING PAINTS

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2 Sheets-Sheet 1



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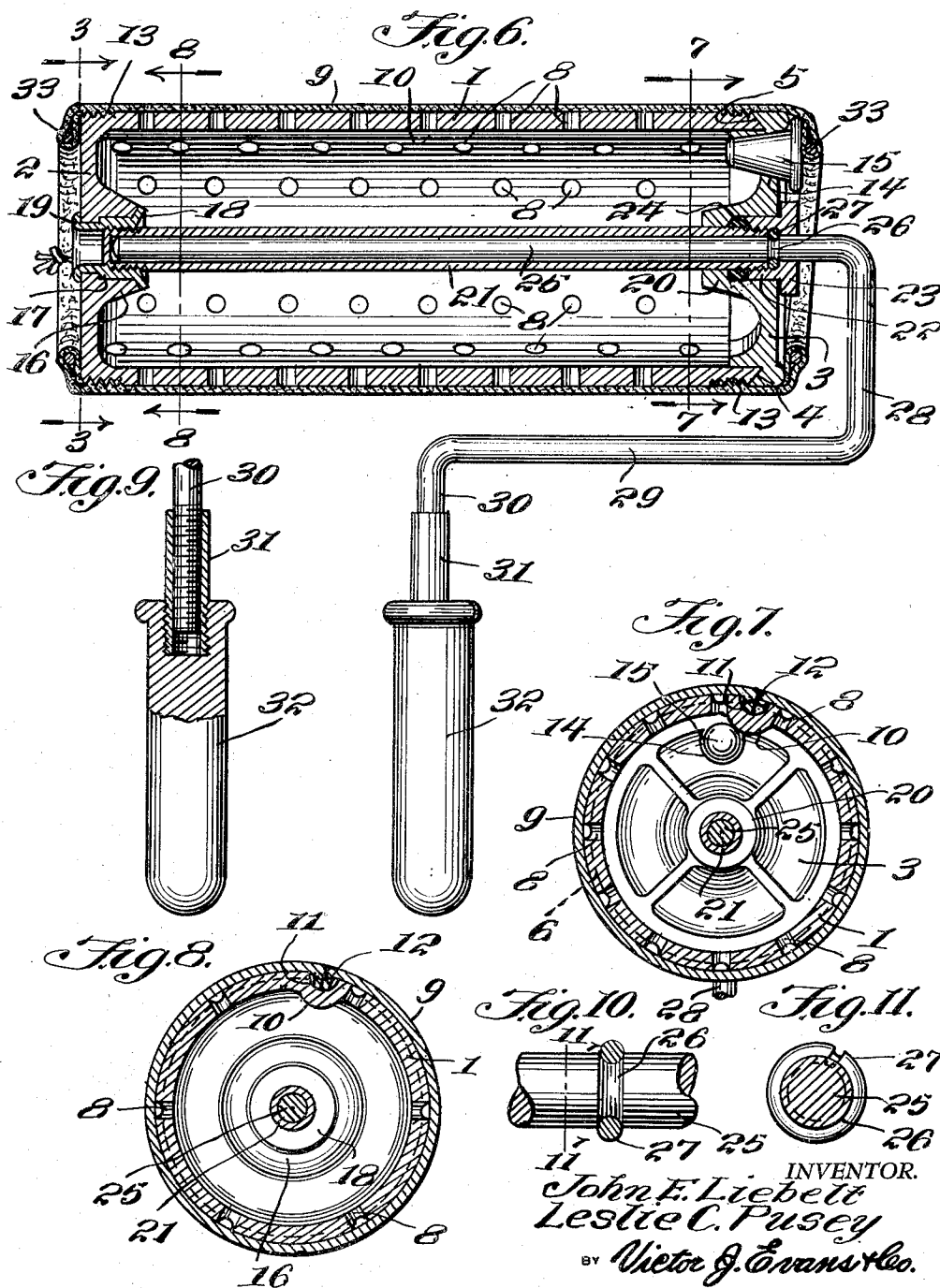
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UNITED STATES PATENT OFFICE

2,563,049

SELF-DISPENSING ROLLER FOR
APPLYING PAINTSJohn E. Liebelt and Leslie C. Pusey,
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1 Claim. (Cl. 15—132.5)

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The present invention relates to the general class of implements or appliances of the hand operated type for applying liquid coatings, and more specifically to an improved self-dispensing roller for applying paint of the fountain roller and web class, which while well adapted for applying varnish, enamel, and other liquid coatings to building structures, will hereinafter be referred to as an applicator for liquid paints.

The primary object of the invention is the provision of a manually operated implement of this character that is composed of a minimum number of parts that may with facility be manufactured with a low cost of production, the component parts may be assembled with convenience, to constitute a unitary structure that may be manipulated easily to apply a uniformly smooth coating with a minimum expenditure of time and labor.

The invention consists in certain novel features of construction and combinations and arrangements of parts involving a rotary reservoir or roller and its supporting handle-frame as will hereinafter be described in detail and more particularly pointed out in the appended claim.

In the accompanying drawings we have illustrated a complete example of a physical embodiment of our invention in which the parts are combined and arranged in accord with one mode we have devised for the practical application of the principles of the invention. It will however be understood that changes and alterations are contemplated and may be made in these exemplifying drawings and mechanical structures, within the scope of our claim, without departing from the principles of the invention.

Figure 1 is a plan view of an applicator involving our invention, part of the web or porous cover being broken away to disclose the distributing ducts and ports of the rotary reservoir or roller.

Figure 2 is a sectional end view as at line 2—2 of Fig. 1.

Figure 3 is a sectional view on the line 3—3 of Figure 6.

Figure 4 is an enlarged detail sectional view of the roller as at line 4—4 of Fig. 1.

Figure 5 is a detail sectional view showing one of the exterior ducts and a port of the roller.

Figure 6 is a longitudinal sectional view of the implement together with its supporting handle-frame.

Figure 7 is a transverse sectional view at line 7—7 of Fig. 6; and Figure 8 is a transverse sectional view at line 8—8 of Fig. 6.

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Figure 9 is a sectional detail view of the adjustable handle.

Figure 10 is a fragmentary detail view showing the means for preventing longitudinal displacement of the journal for the rollers; and Figure 11 is a transverse sectional view at line 11—11 of Fig. 10.

In carrying out our invention we employ a rotary reservoir in the nature of a tubular or cylindrical roller 1, preferably of molded plastic material, having a closed end 2 integral therewith, and a head 3 of similar material, or other suitable material, and the head is provided with an annular beveled flange 4 that fits over a complementary beveled edge 5 of the roller to insure a sealed joint.

The exterior surface of the roller is provided with a series of equally spaced right hand spiral grooves 6, and a complementary series of equally spaced left hand spiral grooves 7 that intersect, and the intersections of these grooves or distributing ducts are fashioned with orifices or ports 8 to insure an equalized distribution of the liquid paint from the interior of the roller, or reservoir, through the ports, and thence through the network of ducts to an enclosing web or porous cover 9 of the roller.

In its initial form, the web or cover is an absorbent rectangular mat, of porous material that is adapted to be permeated or impregnated with the liquid paint from the network of ducts, and the mat is wrapped around the cylindrical roller as a cover, and in the form of a cylindrical tube.

For securely uniting the porous web with the roller the latter is provided with an inner longitudinally extending rib 10 that forms an exterior joint groove 11, and the adjoining ends 12 of the mat are firmly pressed into the groove to form an attaching bead firmly embedded in the groove, and presenting a smooth exterior surface for the web or cover.

The ends of the tubular cover may be retained on the exterior of the roller, as by means of annular groove threads 13 that are equally spaced from each other and extend circumferentially of the roller. The grooves 13 also tend to seal the ends of the roller to prevent the paint from flowing out of the grooves 6 and 7 over the outer ends of the roller.

The reservoir formed within the hollow roller may be filled or replenished with liquid paint through a filling hole 14 in the head 3 of the roller, and the filling hole is closed by means of a tapered plug 15 that is frictionally held in the walls of the filling hole.

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For rotatably supporting or mounting the roller upon its supporting hand frame, the inner face of the closed end 2 of the roller is fashioned with a central countersunk boss 16 forming a socket for a bushing or ferrule 17 of metal or other suitable material, and the bushing is provided with an interior annular flange 18 and an exterior flange 19 for rigidly uniting it with the head or end 2 of the roller.

The cap or head 3 of the roller is also provided with a complementary central recessed boss 20 to receive one end of a tubular bearing or sleeve 21, the other end of which is threaded and screwed into complementary threads of the bushing 17.

For mounting the bearing sleeve in the recessed boss 20 the end of the sleeve is threaded to receive the threads of a lock nut 22 which has a head 23 for use with a wrench or other tool, and a packing ring 24 is employed in the recessed boss to seal the joint against leaks from the interior of the reservoir.

The roller is equipped with a handle frame of special design that includes an end piece 25 enclosed within and extending the length of the bearing sleeve, which forms a journal bearing for the bearing sleeve about which the roller revolves as the implement is manipulated across the surface to be painted. To prevent longitudinal displacement of the journal bearing, or the handle frame, the journal 25 is provided with an annular groove 26 in which is mounted a split ring 27 located between an end of the sleeve and within the nut 22; and the nut, which tightens the cap or head 3 on the roller, also securely mounts the journal in its bearing sleeve.

As best seen in Figs. 1 and 6, the handle-frame, in addition to the journal 25 also includes a return-bend yoke 28, and an arm 29 parallel with the journal 25, and this arm terminates in an integral shank 30 disposed radially of the roller.

An adjustable sleeve 31 having internal threads to receive the threaded end of the shank, is also provided with external threads for mounting a handle 32 rigidly on the sleeve, and it will be apparent that the handle may be adjusted on the threaded shank to lengthen or shorten the support for the handle as the roller or applicator is reciprocated for applying the liquid coating to a surface.

As the roller is manually reciprocated, or stroked, over a desired surface, and with the porous web in contact therewith, the roller re-

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volves upon its journal bearing, and the liquid paint is fed from the interior reservoir through the ports and the net-work of ducts, and thence through the porous web or cover, for uniform and equal distribution of the paint to assure a smooth and even painted surface.

Instead of retaining the ends of the tubular cover on the exterior of the roller, as previously described, drawstrings 33 may be used so that the cover is removable, and can be easily removed and replaced as desired.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

In a fountain applicator for liquid paint, the combination with a supporting handle frame including a journal, of a cylindrical roller having a porous pad and an interior reservoir, means for feeding liquid paint from the reservoir to the inner surface of the porous pad, said roller having tubular end-bosses formed on the interior surface of the ends of said roller centrally thereof, a bushing mounted in one boss, a bearing sleeve extending through the reservoir and surrounding the journal and having one end threadably connected to said bushing, a lock nut located in the other boss surrounding the journal and threaded on the sleeve, and means for retaining the journal against longitudinal displacement.

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