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E. E. THOMAS ET AL

2,647,276

SELF-EXPANDING PAINTING ROLLER WITH DETACHABLE COVERING SLEEVE

Filed March 22, 1947

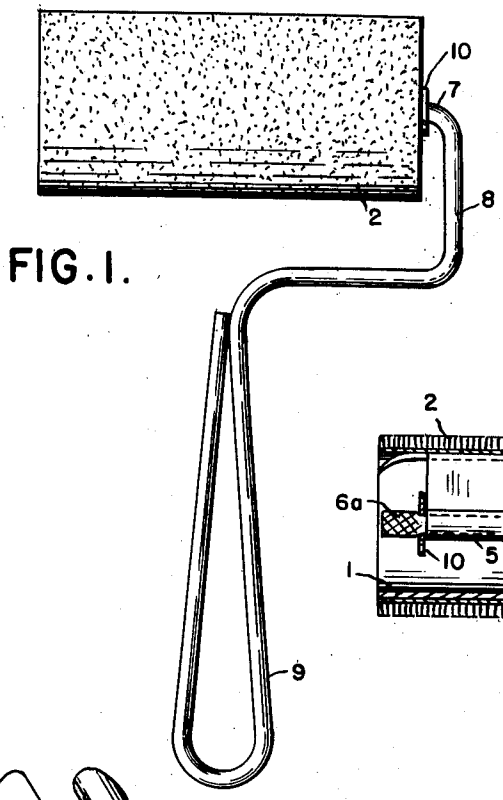


FIG. 1.

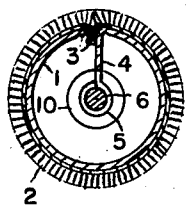
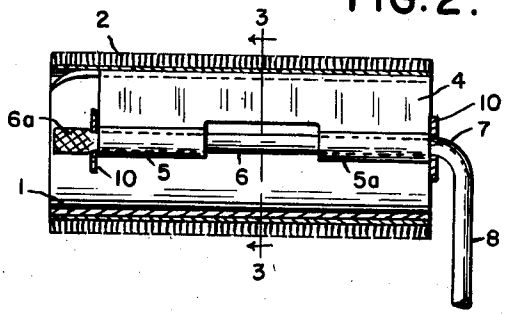


FIG. 3.

FIG. 2.



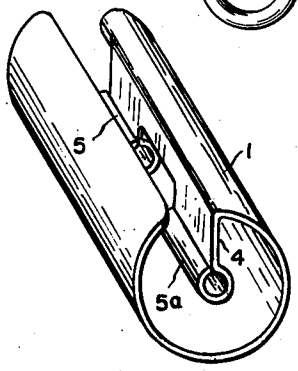


FIG. 4.

FIG. 5.

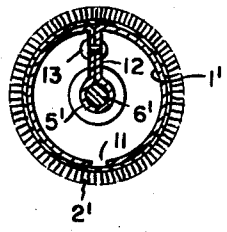
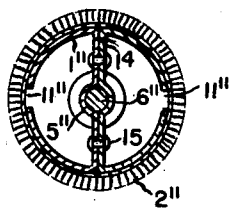


FIG. 6.



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SELF-EXPANDING PAINTING ROLLER WITH DETACHABLE COVERING SLEEVE

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Application March 22, 1947, Serial No. 736,576

1 Claim. (Cl. 15—230)

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This invention relates to roller appliances for use in painting and stippling or other coating processes. In such appliances, it is common to journal a roller on an axle member having an extension serving to form an elongated handle member occupying a transverse relation to the roller. It is also common to equip the roller with a tubular covering of fabric which serves to spread and apply paint or the like.

An object of the invention is to adapt a tubular fabric cover to be quickly applied and firmly held on a roller by forming the latter of spring sheet metal or other resilient material, shaped to an approximate tubular form but requiring a compressive force to bring its margins into proximity, so that it will exert a material expansive force after receiving a tubular fabric cover and thus cause the cover to tightly embrace the roller.

Another object is to bend a marginal portion of such a roller toward the roller axis and to form bearings on said portion at said axis for journaling the axle of the appliance.

Another object is to dispose the seam formed by the joined ends of the fabric cover between the spaced margins of the roller, so that said seam will not interfere with the intended circular form of the covered roller and will further resist any tendency of the cover to rotate on the roller.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawing, wherein:

Fig. 1 is a front elevational view of our improved appliance.

Fig. 2 is an axial sectional view of the appliance.

Fig. 3 is a cross sectional view of the covered roller, taken on the line 3—3 of Fig. 2.

Fig. 4 is a perspective view showing the expanded form of the roller, prior to engaging it by its fabric cover.

Fig. 5 is a cross sectional view of the roller in a modified form.

Fig. 6 is a cross sectional view of another modification of the roller.

In these views, the reference character 1 designates an open-ended roller formed of a sheet of metal or other suitable material bent to tubular form. Said material has a resiliency tending to spread apart the longitudinal margins of the rolled sheet, as appears in Fig. 4, whereby the roller is distorted from a true cylindrical form prior to applying its fabric cover 2. The latter is a sleeve of mohair, felt, plush, lambswool, or some other suitable fabric, the longitudinal joint of

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which sleeve is closed in any suitable manner but preferably by a stitched seam 3, and the diameter of such sleeve is such as to maintain a compression of the roller, bringing its margins into fairly close proximity, as shown in Fig. 3. The expansive effect of the compressed roller causes it to firmly grip the sleeve 2 and hold the latter in place. It is preferred to form the roller with an excess of material at one of its margins to form an arm 4 extending to the roller axis and forming a pair of spaced aligned bearings 5 and 5a within the roller end portions. Journaled in such bearings is an axle 6 having a flattened end portion 6a adjacent the bearing 5 to resist escape of the roller. Said bearing is sufficiently set back within the roller to avoid exposure of the end portion 6a beyond the corresponding roller end. Opposite end play of the roller is prevented by a right angle bend 7 in the axle 6 such bend forming an extension 8 of the axle transverse to the latter, and such extension having additional bends whereby it forms a handle 9, elongated transversely to the roller and substantially equidistantly from the roller ends. It will be noted that the seam 3 of the fabric sleeve occupies the gap between the roller margins, thus avoiding any bulging of the sleeve because of the seam and resisting any tendency of the sleeve to rotate on the roller. Ordinarily the expansive pressure of the roller will amply serve to resist rotation, but if the sleeve is inadvertently oversized or stretches in the course of considerable use, said seam may function to anchor the sleeve against rotation. Washers 10 are preferably mounted on the axle between the flattened end 6a and bend 7.

The described construction accomplishes a material economy in manufacturing both the roller and fabric sleeve, due to forming the bearings as an integral portion of the roller, elimination of any fastening between the roller margins, and elimination of any special means for retaining the sleeve in place on the roller. Another advantage is that ready removal and replacement of the fabric sleeve may be effected by merely gripping the covered roller firmly enough to relieve its pressure on the sleeve as the latter is slid off or on the roller.

In the modification shown in Fig. 5, the elongated gap 11 in the roller 1' is diagrammatically opposed to a reentrant, two-ply portion 12 of the roller, extending substantially to the roller axis and expanded at such axis to form one or more bearings 5' for an axle 6' such as has been described. The two plies 12 are held closely interengaged by one or more rivets 13. An expansive

effort exerted by resiliency of the sheet material tends to enlarge the gap 11, thereby firmly engaging the roller with the fabric sleeve 2'.

In the modification shown in Fig. 6, the roller 1'' comprises complementary halves which have abutting plates 14, held together by rivets 15 or the like, in a diametrical relation to the roller. Said halves form one or more bearings 5'' at the roller axis for journaling the axle 6''. In a diametrically opposed relation, transverse to that established by the plates 14, said halves are formed with gaps 11'', and the expansive effort of the roller tends to enlarge these gaps and effect tight gripping of the sleeve 2''.

What we claim is:

In an appliance for painting and like operations, a hollow roller and a fabric sleeve embracing such roller, the roller being formed of a resilient sheet of material with margins separatively stressed by resiliency of the sheet, whereby said roller firmly engages the sleeve, the roller being formed with an arm extending to the roller axis from one of said margins and elongated along such margin and formed with a journal bearing at the roller axis.

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STANDLY T. COUGHLAN.

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