Dec. 16, 1952 J. A. PHARRIS ET AL 2,621,507

METHOD OF MAKING A CYLINDRICAL LIQUID APPLICATOR

Filed Dec. 19, 1949 2 SHEETS—SHEET 1

Fig. 1.

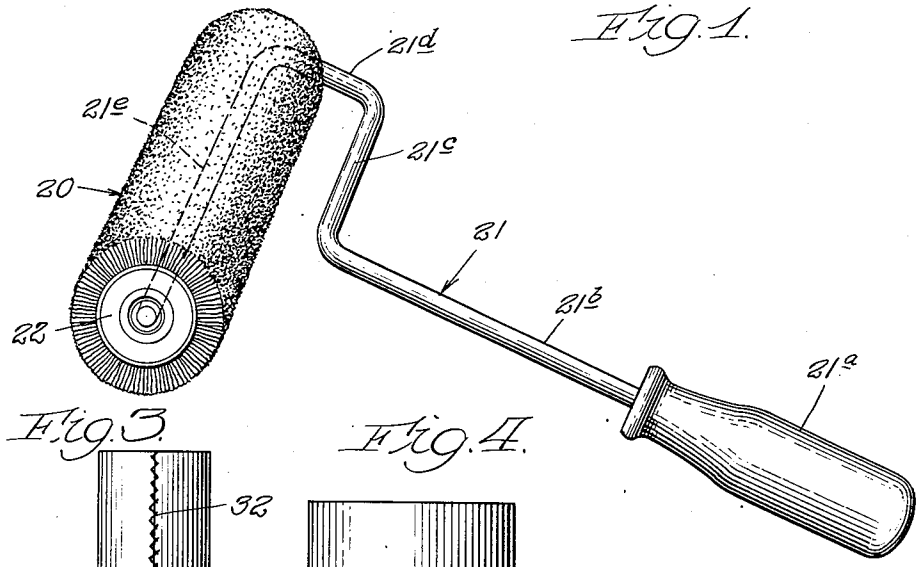


Fig. 3.

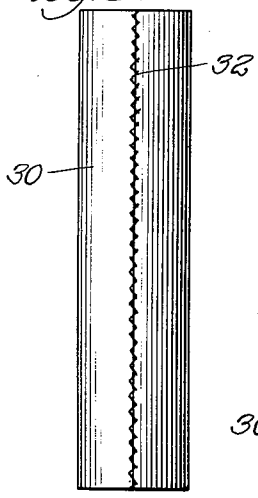


Fig. 4.

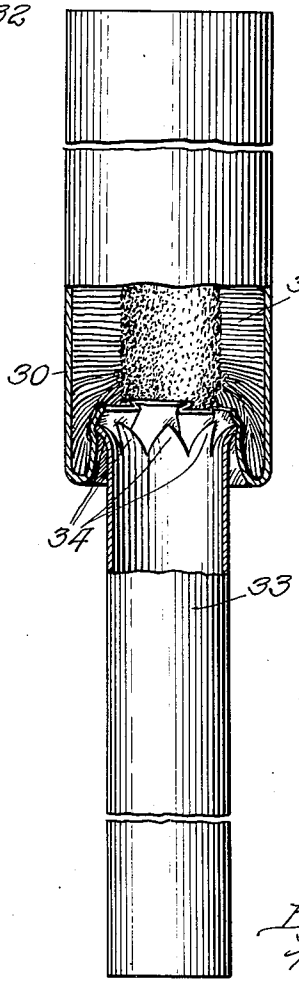


Fig. 5.

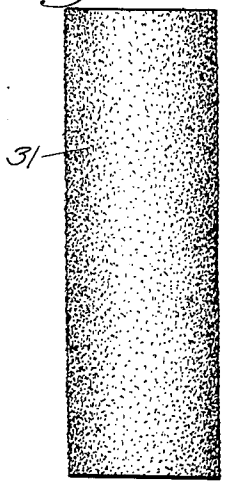
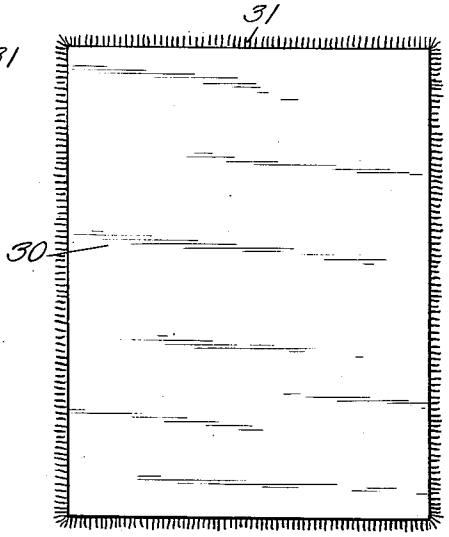


Fig. 2.



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Fig. 6.

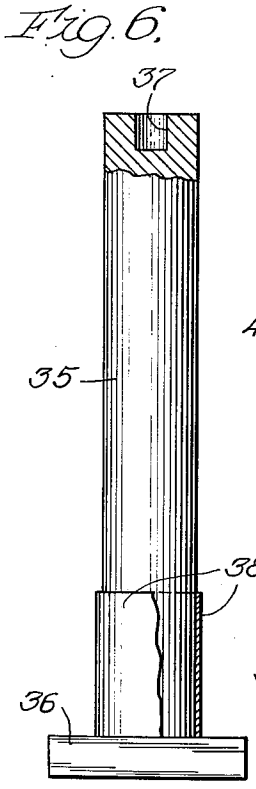


Fig. 7.

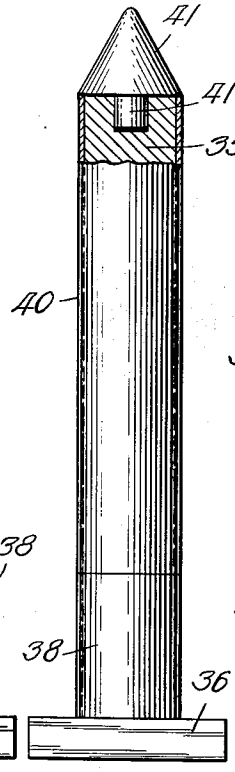


Fig. 8.

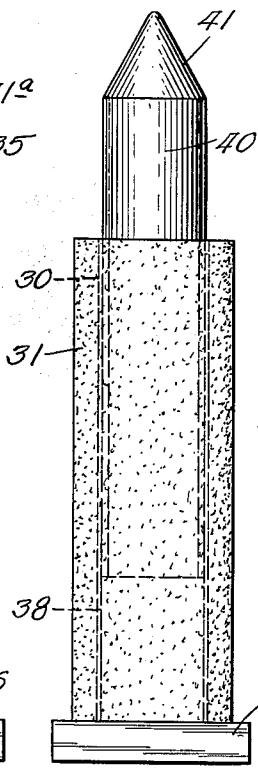


Fig. 9.

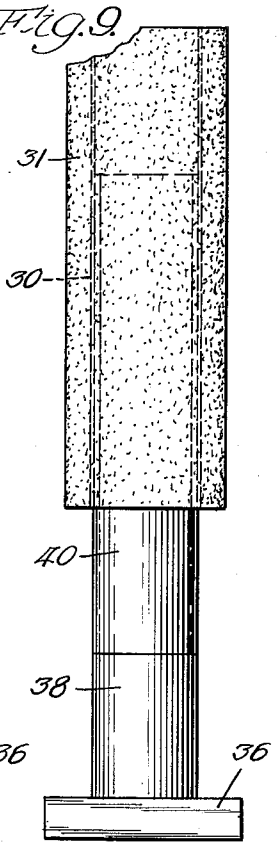


Fig. 10.

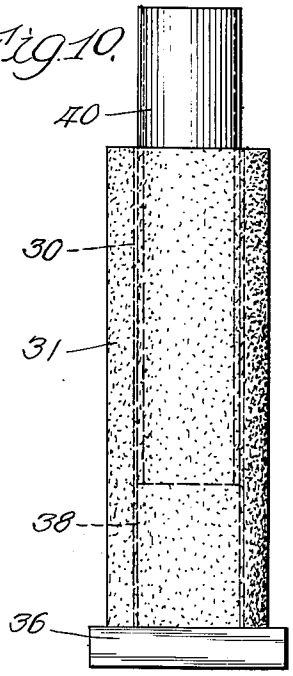
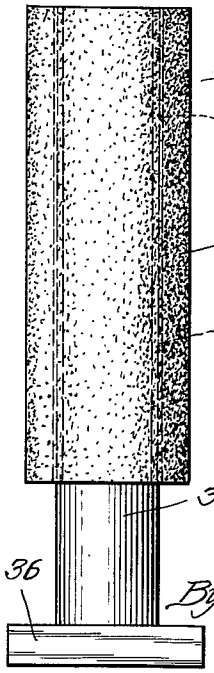


Fig. 11.



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METHOD OF MAKING A CYLINDRICAL LIQUID APPLICATOR

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Application December 19, 1949, Serial No. 133,774

6 Claims. (Cl. 69—21)

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This invention relates to a method of cementing a cylindrical member on a closely fitting core, and more particularly to a novel method of making a cylindrical liquid applicator.

One feature of the invention is that it provides an improved method whereby a flexible cylindrical member may be cemented on a closely fitting core.

Another feature of the invenion is that it provides a method whereby both ends of the core are firmly cemented to the cylindrical member despite the fact that the core fits closely in the bore of the cylindrical member.

A further feature of the invention is that the cylindrical member is slid partly over the core so that one end of the core is exposed, this end is cemented and the cylindrical member is then slid over the cemented portion of the core so that the other end of the core is exposed and this other end is cemented, and the cylindrical member is then slid back to the center of the core.

An additional feature of the invention is that the cylindrical member may be formed from a rectangular piece of lamb's wool by sewing two opposite edges together with the leather side out, turning said member inside out and flattening the seam.

Another feature of the invention is that a good bond at the edges may be insured by clamping the ends of the member to the core.

Other features and advantages of the invention will be apparent from the following specification and from the drawings, in which:

Fig. 1 is a perspective view of a paint applicator constructed in accordance with the invention and mounted on an operating handle;

Fig. 2 is a face view of the leather side of a rectangular piece of lamb's wool from which the applicator may be formed;

Fig. 3 is an elevational view of said rectangular piece after it has been formed into a cylinder;

Fig. 4 is an enlarged view partly broken away showing the cylindrical member in the process of being turned inside out;

Fig. 5 is an elevational view of the cylinder after it has been turned inside out;

Fig. 6 is an elevational view, partly in section, of a jig and spacer upon which the applicator parts may be mounted;

Fig. 7 is an elevational view, partly in section, of the apparatus of Fig. 6, showing one of the applicator parts mounted thereon;

Fig. 8 is a side elevational view of the apparatus of Fig. 7 showing both of the applicator parts thereon;

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Fig. 9 is a view similar to Fig. 8 but showing the parts in a different position;

Fig. 10 is a view similar to Fig. 9 but showing the parts in still a different position; and

Fig. 11 is a view similar to Fig. 10 showing the parts in yet a different position.

Cylindrical paint applicators of the type shown in Fig. 1 have been found to be superior to brushes for applying paint in many instances. The structure comprises a cylindrical applicator designated generally at 20 rotatably mounted on an operating handle designated generally at 21.

The handle 21 includes an enlarged gripping portion 21*a*, preferably of wood, and a rod member having a portion 21*b* extending outwardly from the gripping portion 21*a*. The rod portion first is bent at right angles to form a portion 21*c*, then is reversely bent at right angles to form a portion 21*d* parallel with the portion 21*b* and is again bent at right angles to form a mounting portion 21*e* extending parallel with the portion 21*c*. A drum 22 is rotatably mounted upon the portion 21*e*, and the applicator 20 is frictionally mounted on this drum.

The applicator 20 comprises a cylindrical member having a soft liquid applying surface, this member preferably being formed of lamb's wool mounted upon a hollow core.

In the past it has been the practice to cut a rectangular piece of lamb's wool and glue the leather side of the rectangular piece onto the core member. Applicators constructed in this manner very often came apart at the seam, and the formation of a closely fit seam or juncture of the two edges of the rectangular piece of lamb's wool was solely dependent upon the skill of the maker, so that the products were not uniform in this regard and many applicators were made with poor seams. This resulted in uneven distribution of paint on the surface of which it was applied.

We have devised and are herein disclosing and claiming a method of making a cylindrical liquid applicator resulting in a product in which the seam is uniform and which will not come apart at the seam despite continued use.

The first step in making a liquid applicator according to the novel method resides in cutting a rectangular piece of lamb's wool from a larger piece, the rectangular piece being cut on the leather side with a sharp furrier's knife to avoid cutting through the wool strands. The rectangular piece when properly cut is shown in Fig. 2, the leather side 30 facing outwardly in said figure and the wool strands 31 not being cut off

even with the edges of the leather. If desired materials other than genuine lamb's wool may be used, as for example certain synthetic materials on the market.

In the second step the rectangular piece of Fig. 2 is formed into a cylindrical member by joining two opposite longer edges together with the leather side out. The seam **32** is formed by sewing, preferably on a fur-type sewing machine. After sewing, the cover is turned inside out on a turning tool **33** having an outwardly turned serrated edge forming prongs **34**. In this operation one end of the lamb's wool cylinder first is turned in with the fingers for a short distance and the tool **33** is placed in this inwardly turned end so that the outwardly turned prongs **34** grip the leather, and the cylinder is then pulled down over the tool as shown in Fig. 4 so that the member is turned inside out from the position of Fig. 3. The lamb's wool cylinder with the wool side out is shown in Fig. 5. After the cover has been turned so that the wool side is out the cover is placed on a metal dowel and the seam is flattened with a hammer, a roller or a similar tool, so that when the applicator is rolled over a surface to apply paint or other liquid thereto the seam will not make a mark.

In cementing the cylindrical cover onto a closely fitting relatively rigid core we have found that if the core or the inner surface of the cover is entirely covered with glue or other cement and the cover is pulled down over the core, the glue will be wiped away from one end of the structure and a poor bond will be obtained between the core and the cover at this end, and in consequence of this in the past a rectangular piece of lamb's wool (rather than a cylinder with a permanent seam) has been mounted on the core. However, our novel method completely eliminates this disadvantage and results in a firm bond over the entire area where the cover contacts the core.

In making the applicator in accordance with our novel method we prefer to use the jigs shown in Figs. 6 and 7, although it will be understood that these jigs merely facilitate the operation and are not essential to the performance of the method. A jig **35** is provided on a base **36**, this jig having a hole **37** in its upper surface. This jig is longer that the core upon which the cover is to be mounted and has a diameter such that the hollow core will slide over the jig. A spacer **38** is provided, the wall of this spacer being about as thick as the wall of the core. Spacers of different lengths may be provided for making applicators of different lengths, and as seen in Fig. 6 the spacer fits closely over the jig **35**.

Having formed the lamb's wool cover into a cylinder with the lamb's wool side out and the seam flattened, a spacer of the proper length is placed upon the jig **35** as shown in Fig. 6 and the core **40** upon which the cover is to be mounted is placed upon the jig **35**, the bottom of the core abutting the top of the spacer **38**. A cone-shaped member **41** is placed atop the jig **35**, an extension **41***a* on the base of the cone fitting into the hole **37** to hold the cone in place. The flexible lamb's wool cover is slid over the cone **41** and the jig **35** and is slid over the core **40** and the spacer **38** so that one end of the core is exposed as shown in Fig. 8. This exposed end is covered with cement and the core **40** and lamb's wool cover are removed from the jig and replaced thereon in inverted position as shown in Fig. 9. If the spacer **38** comes off the jig with the cover it is replaced on the jig **35** before the core and cover are placed in the inverted position of Fig. 9.

From the position of Fig. 9 the cover is slid down over the cemented portion of the core and over the spacer so that the other end of the core is exposed as shown in Fig. 10. This end of the core is then covered with cement. The core and the lamb's wool member are again removed from the jig and again replaced thereon in inverted position as shown in Fig. 11 and the cover is slid down to the center of the core.

The unit may then be removed from the jig and rubber bands or other clamps placed around the ends of the lamb's wool cover to securely bind the ends to the core, inasmuch as looseness is most likely to occur at the ends.

While a satisfactory applicator cannot be constructed by gluing or cementing the entire surface of the core and sliding the lamb's wool cover over the core because the glue at one end would be wiped off, by gluing only a portion of the core at a time we are able to construct a very satisfactory applicator having a uniform permanent seam which cannot come apart, and in which the cover is firmly cemented to the core, particularly at the ends. After the cement has dried the applicator may be mounted on the handle, the hollow core frictionally engaging the drum **22**.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

We claim:

1. The method of cementing a cylindrical member on a closely fitting core, comprising: sliding said member partly over the core so that one end of the core is exposed; cement coating the exposed end of the core; sliding the member over the coated portion of the core so that the other end of the core is exposed; cement coating the exposed end of the core; and sliding the member back to the center of the core.

2. The method of cementing a flexible cylindrical member on a closely fitting core, comprising: sliding said member partly over the core so that one end of the core is exposed; cement coating the exposed end of the core; sliding the member over the coated portion of the core so that the other end of the core is exposed; cement coating the exposed end of the core; sliding the member back to the center of the core; and clamping the ends of said member to the core.

3. The method of making a cylindrical liquid applicator comprising a flexible cylindrical member mounted on a closely fitting hollow core, including: placing said core on a jig having a spacer thereon so that said core abuts said spacer; sliding said member in one direction over said core and spacer so that one end of the core is exposed; cement coating the exposed end of the core; sliding the member in the other direction over the coated portion of the core so that the other end of the core is exposed; cement coating the exposed end of the core; and sliding the member back to the center of the core.

4. The method of making a cylindrical liquid applicator comprising a flexible cylindrical member mounted on a closely fitting hollow core, including: placing said core on a jig having a spacer thereon so that said core abuts said spacer; sliding said member over said core and

spacer so that one end of the core is exposed; cement coating the exposed end of the core; removing said core and member from the jig and replacing them thereon in inverted position; sliding said member over the coated portion of the core and over the spacer so that the other end of the core is exposed; cement coating the exposed end of the core; and sliding the member back to the center of the core.

5. The method of making a cylindrical liquid applicator comprising a flexible cylindrical member mounted on a closely fitting hollow core, including: providing a rectangular piece of flexible material having two opposite edges joined together; placing a cylindrical spacer on a jig; placing said core on said jig abutting said spacer; sliding said piece over said core and spacer so that one end of the core is exposed; cement coating the exposed end of the core; removing said core and piece from the jig and replacing them thereon in inverted position; sliding said piece over the coated portion of the core and over the spacer so that the other end of the core is exposed; cement coating the exposed end of the core; sliding the piece back to the center of the core; and clamping the ends of said piece to the core.

6. The method of making a cylindrical liquid applicator comprising a flexible cylindrical member mounted on a closely fitting hollow core, including: providing a rectangular piece of flexible

material having two opposite edges joined together; placing a cylindrical spacer on a jig; placing said core on said jig abutting said spacer; sliding said piece over said core and spacer so that one end of the core is exposed; cement coating the exposed end of the core; removing said core and piece from the jig and replacing them thereon in inverted position; sliding said piece over the coated portion of the core and over the spacer so that the other end of the core is exposed; cement coating the exposed end of the core; removing said core and piece from the jig and again replacing them thereon in inverted position; and sliidng the piece back to the center of the core.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,209,639	Carter	Dec. 19, 1916
1,521,983	Barker et al.	Jan. 6, 1925
1,823,690	Kootz	Sept. 15, 1931
1,824,649	Angell	Sept. 22, 1931
2,478,262	Gay et al.	Aug. 9, 1949