

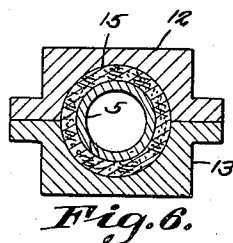
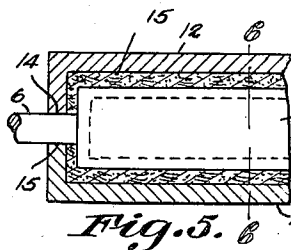
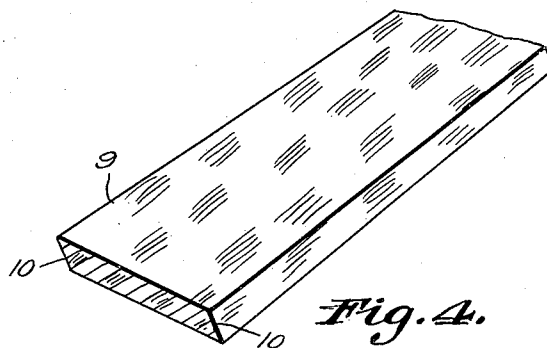
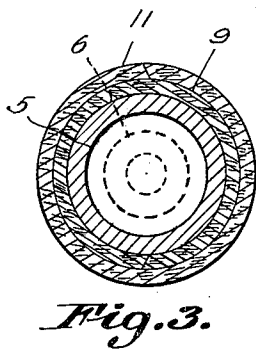
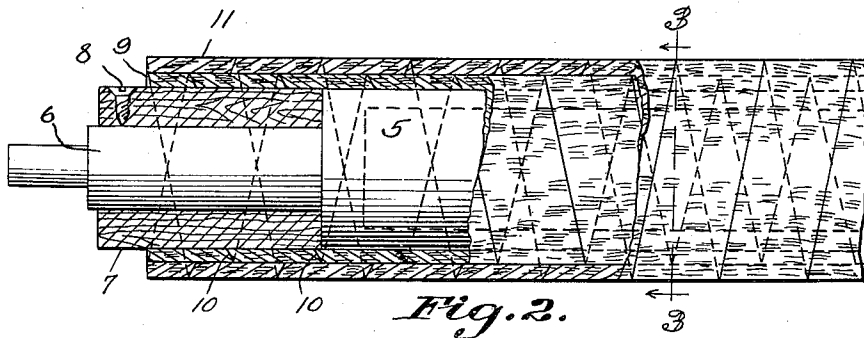
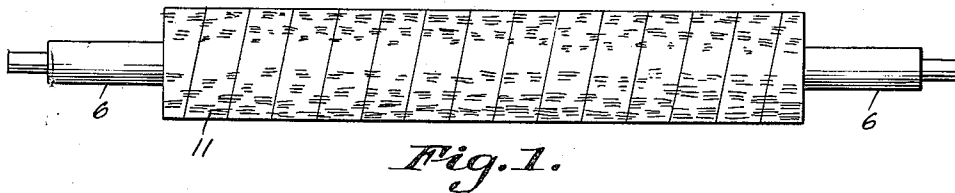
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2,501,780

CORK PRINTER'S ROLLER

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UNITED STATES PATENT OFFICE

2,501,780

CORK PRINTER'S ROLLER

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1 Claim. (Cl. 91-67.8)

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This invention relates to a printer's roller of cork-surfaced design, embodying a construction that permits application of the invention to the manufacture of such various types of rollers as ductor, vibrator, and distributor rollers, to state a few examples.

It is well known in the art to which the invention refers that the upkeep of conventional rollers is very high, with maintenance costs running very high over the period of time in which a roller can be put to effective use. For instance, rubber rollers, through long use, tend to lose their roundness, and it is necessary that they be reground and repolished, or otherwise serviced, and thus there is an almost continuous expense incurred in maintenance of such rollers.

Additionally, atmospheric conditions affect printer's rollers, as does heat and friction while running. Glue and glycerine rollers thus tend to melt, or are otherwise distorted.

The further point may be noted that in actual operation, conventional rollers have certain undesirable characteristics, as for example, they sometimes tend to slip or skid on the smooth steel ink cylinders when the press is being "jogged" or "inched." Additionally, they are inclined to collect paper lint or ink grit, and require frequent washing on this account.

I have had in mind, then, the provision of a printer's roller, especially adapted for the printing of newspapers, which will have none of these disadvantages, and which additionally, has a low initial cost of manufacture. Through a period of experimental testing extending over many years, I have found a means for constructing a printer's roller that permits it to be used without any upkeep cost whatsoever, the roller being undisturbed by atmospheric conditions, or long use. Except, of course, for the usual shaft or core, the roller is formed exclusively of cork material. The use of cork in making a printer's roller is not in and of itself new, a cork-surfaced roller being shown, for example, in my Reissue Patent 18,857, of June 6, 1933. However, so far as I am aware, a printer's roller formed exclusively of cork material, and in a novel manner to be described hereinafter that presents numerous advantages over other rollers of the same general type, is wholly novel. The cork I use in making my roller is known to the trade as composition cork and is made from the original raw cork, being finely ground and then united with binder of blown linseed oil or casein glue.

With the foregoing and other objects in view which will appear as the description proceeds,

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the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is an elevational view of a roller constructed in accordance with the invention.

Figure 2 is an enlarged fragmentary view, partly in elevation and partly in longitudinal section, showing the roller at an intermediate stage of manufacture.

Figure 3 is a section on line 3-3 of Figure 2.

Figure 4 is a fragmentary perspective view, on an enlarged scale, of a portion of a cork strip used in manufacture of the roller.

Figure 5 illustrates another method of forming a printer's roller in accordance with the invention, and is a longitudinal section through a mold, a roller held thereby being shown at an intermediate stage of manufacture.

Figure 6 is a section on line 6-6 of Figure 5.

Referring to the drawing in detail, at 5 I have designated a cylindrical metal core, usually hollow having at its ends the usual solid trunnions 6.

In forming a printer's roller in accordance with the invention, it is preferred that a block 7 first be positioned over each trunnion or journal 6. These blocks are cylindrical, and when mounted upon the trunnions, constitute extensions of the intermediate portion or core 5. Preferably, the blocks are of soft wood material, and are axially bored so as to fit properly upon the trunnions.

After the blocks have been so mounted, they are brought into an abutting relationship against the ends of the core 5, and are secured against rotation or other relative movement by means of screws 8.

Beginning adjacent the outer end of one of the blocks 7, I now wind upon the roller a strip 9 of cork material, of any desired thickness. As previously mentioned, this is composition cork, finely ground and united with a binder of blown linseed oil or casein glue. Composition cork is used because a roller's value is in its smoothness and composition cork, unlike natural or raw cork, shows no fissures or cracks. This is bonded to the blocks and core by means of an adhesive of suitable strength and having properties resistant to heat or changes in atmospheric conditions. If desired, a layer of fabric can be interposed between the core and cork strip to strengthen the bond, this being an expedient already known in

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the art. I have found, however, that an adhesive or paint will in itself provide a proper bond if it possesses the qualities mentioned.

The shape of the strip 9 in cross section is of importance, and by reference to Figures 2 and 4, it is seen that the side edges 10 of the strip are beveled, so that the strip in cross section has the conformation of a parallelogram, or more properly, a rhomboid.

The strip 9 is wound tightly from end to end of the wooden blocks and the core 5. In this connection, the sides 10 of the strip preferably are also coated with the adhesive so that the several courses of the strip will also be bonded together.

The roller is now allowed to set, until the adhesive is fully dry, and the roller is then, with strip 9 having been applied thereto as described, finished round.

A second cork strip 11 is now applied. This is of the same cross sectional configuration as strip 9. However, strip 11 is begun at the other end of the roller, with its beveled sides oppositely disposed relative to the beveled sides 10 of the first strip, as best shown in Figure 2. Strip 11 is bonded to strip 9 by means of the adhesive used, and the sides of strip 11 are also coated with the adhesive or paint for the previously stated purpose.

Other strips may be applied upon the two illustrated, but it has been found that for most purposes, two such strips will be adequate. Under some circumstances, in fact, a single strip of proper thickness may serve with full efficiency.

After the roller has again been allowed to dry, it is again finished round, and the next step in the manufacture is to spin off on a lathe those portions of the strips that overlie the blocks 7. The blocks or sleeves are then removed, thus completing manufacture of the roller.

In Figures 5 and 6 another method of making a roller in accordance with the invention is shown. A mold of steel or iron is made in co-operating halves 12 and 13. The mold is closed at its ends but for the provision of opposed recesses 14 and 15 in the respective members 12 and 13, these recesses defining openings at the ends of the mold through which the gudgeons 6 extend.

The mold is filled with the ground cork 15 in its plastic state, that is, prior to actual setting or drying of the binder used in making the composition cork. Then, it is pressed on the roller as illustrated. The composition is then dried under pressure on the roller, and when it has hardened, the mold is removed. The completed roller is now turned down to the desired diameter on an ordinary lathe.

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I have found that a roller constructed in accordance with the invention requires no refinishing during its lifetime, and throughout its lifetime maintains its resiliency fully. Additionally, the roller maintains its shape so as to be fully circular in cross section throughout its period of use, the roller remaining unaffected by atmospheric conditions. Additionally, the roller has the important advantage or characteristic of being heat-resistant, does not skid while the press on which it is used is being jogged or inched, and does not collect such foreign material as paper dust or grit from the ink used. Thus, I have been able to cut maintenance costs considerably, by reason of the complete absence of materials such as rubber, glue, or the like, that tend to affect adversely the operation of the roller over a long period of time. Additionally, in the cutting of maintenance costs, a further and great saving is achieved in that no expensive wiping cloths and cleaning solvents are required for the cork roller.

An important characteristic of the roller is the cross sectional configuration of the strips, which has the direct result of giving the roller equal resiliency from end to end, without any weak points along the length of the roller that might tend to vary the resiliency or distort the perfectly circular cross sectional shape of the roller during its life.

I believe there may be other ways of making a roller of the type described, as for example by extending the cork mix around a shaft centered in a mold, or forming transversely curved cork sheets and placing them on the core before curing.

What is claimed is:

A printer's roller comprising a core, a spirally wrapped composition cork strip of rhomboidal cross section adhesively bonded to the core, and a second cork strip also of rhomboidal cross section spirally wrapped upon the first strip in a reverse direction, the incidence of the joints of the second strip being midway between the joints of the first strip.

HERBERT J. LOWE.

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

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