Sept. 4, 1934. W. H. HEFFERNAN 1,972,382

FURNISHER BRUSH

Filed May 9, 1933

Fig. 1.

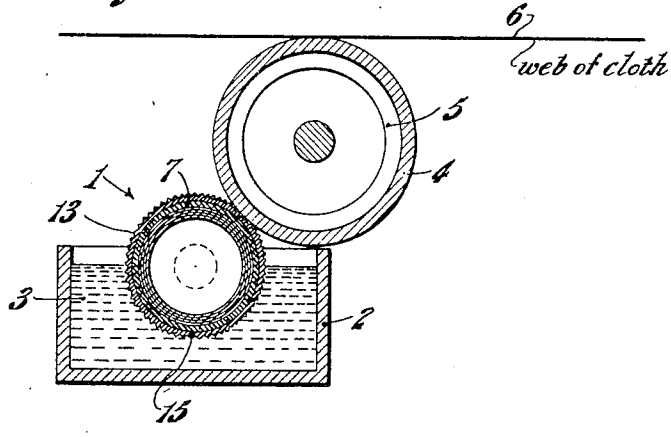
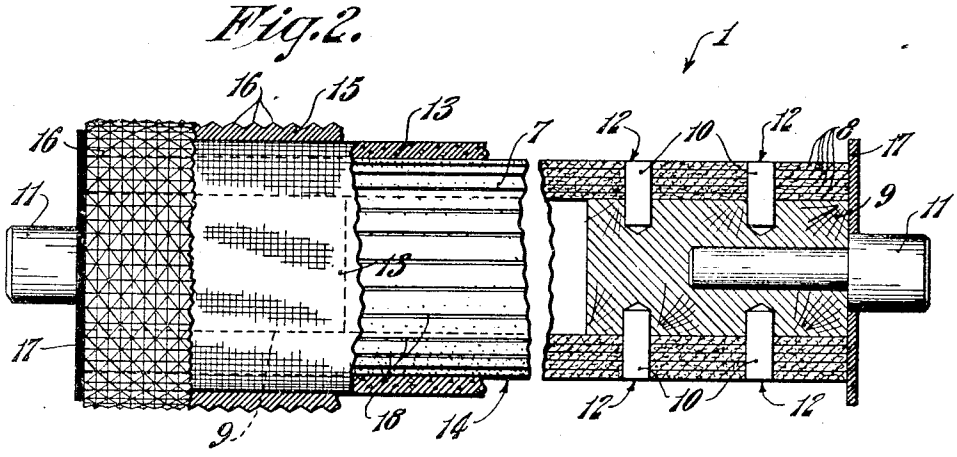


Fig. 2.



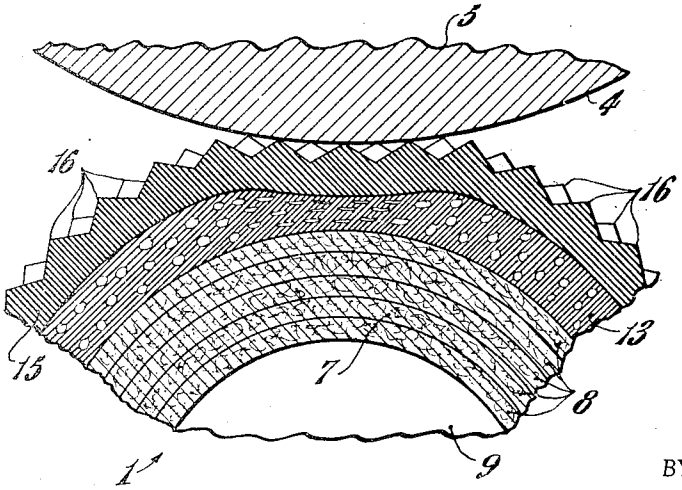


Fig. 3.

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UNITED STATES PATENT OFFICE

1,972,382

FURNISHER BRUSH

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Application May 9, 1933, Serial No. 670,113

1 Claim. (Cl. 91—67.8)

My invention relates to improvements in furnisher brushes, and more particularly to that type of furnisher brush which is designed to be used for transferring liquid coloring material from a suitable receptacle to the surface of an engraved printing roll, incorporated in machinery adapted for printing designs on cloth or paper.

An object of my invention is to provide such a roll, or brush, having a fairly rigid core, a reticulated, or serrated, outer covering, or skin, and an intermediate layer of soft resilient material, whereby displacement and distortion of the outer covering may be utilized to increase the life and wearing qualities of the brush, so that an extra pressure may be used to provide a more even distribution of the coloring matter on the engraved and printing roll, and, when desired, a greater relative surface of the furnisher brush may be brought into contact with the engraved printing roll than is possible with brushes now known to the art.

Broadly, my invention comprises a tubular roller, preferably of paper, wooden bearing members within the tubular roll at each end thereof and pinned thereto, gudgeon, or bearing, members secured in the wooden bearing members, a covering, or skin, of soft resilient material cemented to the outer surface of the tubular roll, and a reticulated, or serrated, covering, or skin, of relatively stiffer material cemented to the covering of soft resilient material.

A preferred embodiment of my invention is illustrated in the accompanying drawing, in which:—

Fig. 1 is a diagrammatic sectional view, illustrating the use of the furnisher roll.

Fig. 2 is a detail view of my furnisher roll, or brush, broken at various points to show the entire construction, and

Fig. 3 is an enlarged partial sectional view of the furnisher brush in contact with the engraved printing roll, illustrating the resiliency of the soft intermediate covering and the displacement of the outer covering.

Referring now to the drawing in detail, in which like numerals refer to like parts throughout:

The furnisher brush 1 normally operates in a tank 2 containing liquid coloring matter 3, and engages the engraved outer surface 4 of a printing cylinder 5, which is in turn in contact with a web 6 of cloth, or paper, to be printed. The brush 1 may be driven, through contact with the cylinder 5, or by separate driving means, not shown.

The furnisher brush 1 has, as a foundation, the tubular roll 7, preferably built up of laminated layers 8 of treated paper. Cylindrical plugs 9, preferably of wood, are inserted in each end of the tubular roll 7, and secured in place by pins 10. Metal gudgeons, or bearings 11, are driven into the plugs 9, and the surface of the paper tubular roll 7 is then turned smooth and true, with the ends 12 of the pins 10 flush with the surface. This tubular roll is more particularly described and claimed in my prior patent, dated September 19, 1933, numbered 1,927,439, entitled "Rolls for transferring dyes or the like". A skin, or covering 13, of soft resilient material, such as sponge rubber, is cemented to the outer surface 14 of the tubular roll 7. An outer, color carrying covering, or skin 15, preferably of harder rubber, and formed with a plurality of pyramidal-shaped projections 16, is cemented to the outer surface of the soft resilient covering 13.

Furnisher rolls, having a serrated, or reticulated, outer skin of rubber, are well known in the art, but it has been found that the insertion of an intermediate layer of soft material, such as sponge rubber, adds greatly to the life and efficiency of the furnisher brush, and results in the production of printed goods of higher quality and greater uniformity. This construction serves to automatically clean the engraved printing cylinder 5.

It should be stated that the outer ends of the cylindrical wooden plugs, or inserts 9, are covered with the disks of rubber 17, by cementing the same thereto for protecting these plugs from the solution. These disks are applied after the brush is assembled. The outer layer of the paper tube 7 is formed with scratches, or grooves 18, in order to cause the cement to firmly secure the layer of sponge rubber 13 on the paper tube.

What I claim is:—

A furnisher brush for color printing apparatus comprising a cylindrical foundation member composed of layers of paper, a resilient serrated outer covering of hard rubber for transferring the color printing material, and an intermediated layer of decidedly soft and resilient material of sponge rubber between the said member and the outer covering, inserts in the ends of the foundation member, rubber caps on the ends of the foundation member, and supporting pins in the inserts.

WILLIAM H. HEFFERNAN.