June 24, 1930. J. KOVÁCS 1,766,388

BRUSH

Filed June 28, 1928

Fig. 1.

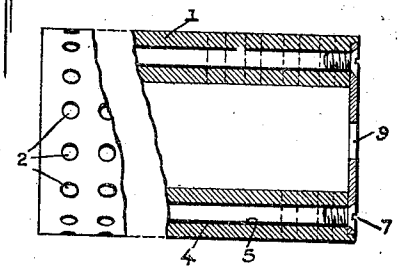



Fig. 2.

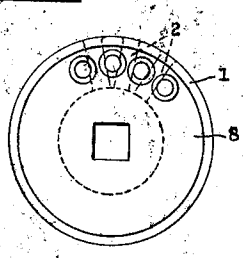



Fig. 3.

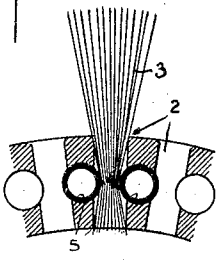



Fig. 4.




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# UNITED STATES PATENT OFFICE

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## BRUSH

Application filed June 28, 1928, Serial No. 288,919, and in Hungary July 1, 1927.

My invention relates to brushes and its chief object is to provide novel means for firmly securing the bundles in their holes in such a manner that the bundles may be easily removed and replaced when they have worn out.

With this object in view, the bundles are secured by the wedging action of tubes or rods which are so inserted in the stock that each wedging element will act on a multiplicity of bundles.

My improved fastening means is particularly adapted for cylindrical brushes subjected to a heavy wear, as those used with street-sweeping machines. A hollow metallic roller is preferably used as the stock, the holes for the bundles being drilled radially and in a plurality of straight parallel longitudinal rows. Between each pair of adjacent rows the hollow roller is longitudinally perforated, the perforations being of so large a diameter that they partially penetrate into the radial holes of both adjacent rows so that when the longitudinal perforations are filled in by tubes or rods, the bundles located in the radial holes are compressed by the wedging action of the adjacent pair of tubes or rods.

In the accompanying drawings, I illustrate a preferred embodiment of my invention by way of example. Fig. 1 is a side view partly in section of a cylindrical stock; Fig. 2 is an end view of the same; Fig. 3 shows a portion of the brush in cross section on a larger scale; Fig. 4 shows a tube provided with a point to facilitate introduction into one of the longitudinal perforations of the stock.

The cylindrical stock 1 is provided with radial holes 2 for the reception of the bundles 3. These holes 2 are arranged in longitudinal rows and between each pair of adjacent longitudinal rows longitudinal perforations 4 are formed with so large a diameter that the tubes 5 introduced into, and perfectly filling in, these perforations 4 partially penetrate into the radial holes 2 of both adjacent rows with the result that the bundles 3 preferably consisting of bass or piassaba fibres and previously located in the holes 2 are forcibly compressed and thereby firmly secured in their holes.

To facilitate the introduction of the tubes 5, they are at one end internally screw-threaded to receive a guiding point 6 as shown in Fig. 4. After the tube is introduced in place, the point 6 is removed to be used for the introduction of another tube. In the inserted tubes the points 6 are replaced by screw-bolts 7 with countersunk heads. These bolts 7 serve at the same time to secure the end plate 8 which is provided with a central rectangular opening 9 for the reception of the driving shaft not shown.

In brushes with smaller stocks rods may be used instead of the tubes 5 as wedging elements.

In order to remove the bundles 3, it suffices to drive out the tubes 5 or rods, whereby the bundles become loose and may be drawn out from their holes 2 so that worn bundles may be very easily replaced without any harm to the stock.

The invention is not limited to cylindrical brushes as the above-described fastening means may be employed with all kinds of brushes in which the bundles are grouped in longitudinal rows.

What I claim is:—

1. A brush comprising a stock provided with a multiplicity of holes grouped in longitudinal rows, and with perforations running transversely to the axes of said holes, extending to substantially the whole length of said stock and partially penetrating into said holes, brush bundles inserted in said holes and elongate bodies filling in said perforations so as to wedge said bundles in said holes.

2. A brush comprising a cylindrical stock provided with a multiplicity of radial holes arranged in longitudinal rows running paral-

lel with the axis of the cylindrical stock, and with longitudinal perforations formed between said longitudinal rows of holes so as to partially penetrate into the adjacent rows of holes, brush bundles inserted into said holes and tubes filling in said perforations so as to wedge the bundles in the holes.

In testimony whereof I have signed my name to this specification.

JÁNOS KOVÁCS.