

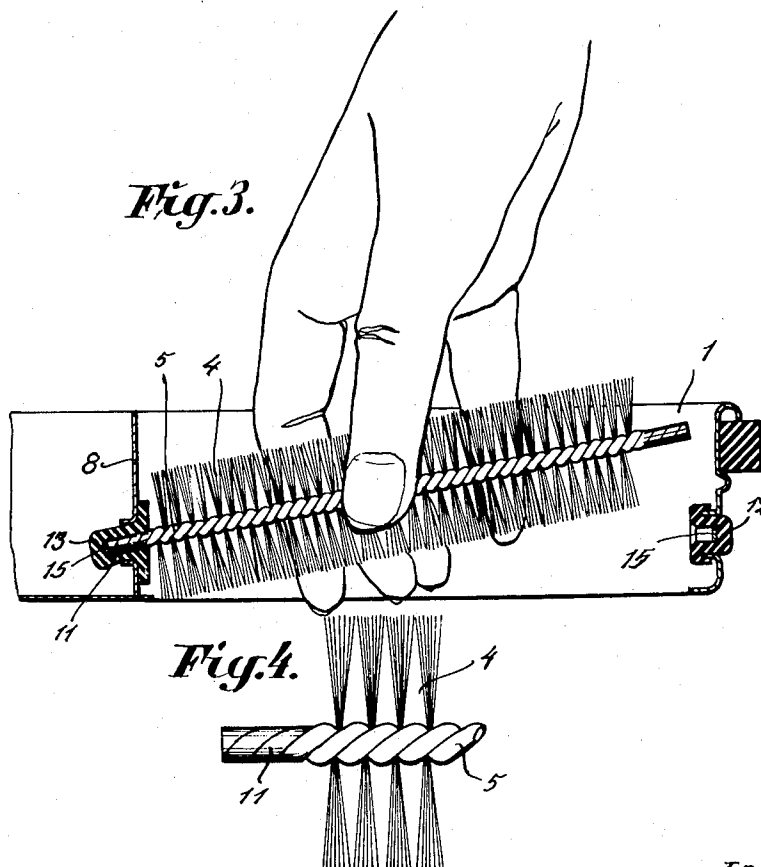
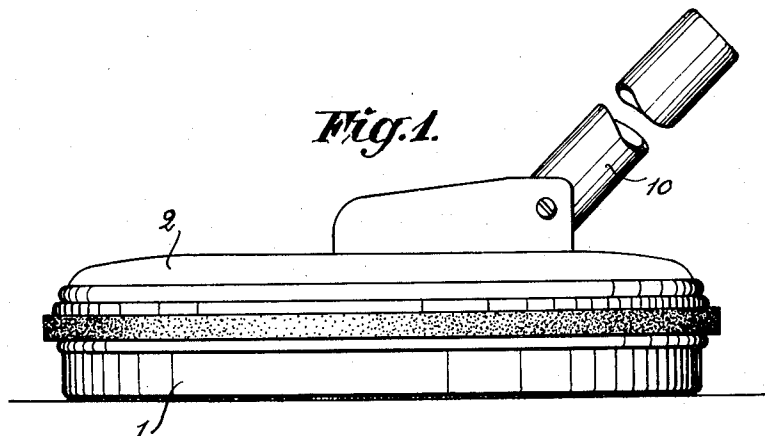
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ROTATABLE BRUSH ROLLERS FOR BRUSHING APPARATUS
OR SUCTION-CLEANER NOZZLES

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2 Sheets-Sheet 1



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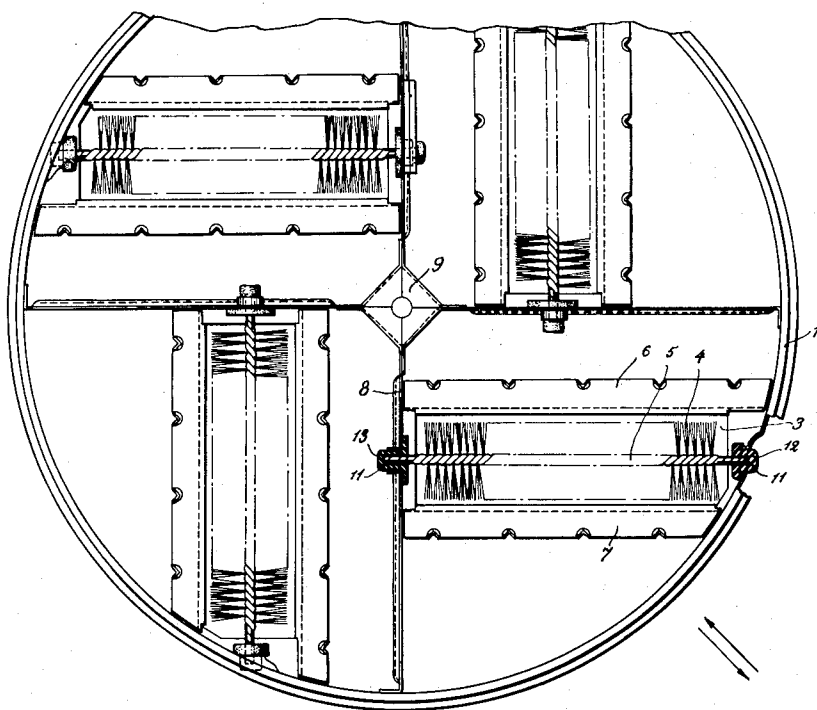
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Fig. 2.



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ROTATABLE BRUSH ROLLERS FOR BRUSHING APPARATUS OR SUCTION-CLEANER NOZZLES

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3 Claims. (Cl. 15—41)

It is known to employ rotatable brush rollers in apparatus for cleaning soft carpets. Such apparatus are described for example in the Swedish patent specifications 109,117 and 118,426. In these known apparatus the brush rollers are detachable, so that they can be removed for example to exchange them or to remove threads or hairs which have become wound around the shaft of the brush roller. The means which have been suggested for this purpose in the two patent specifications mentioned have the disadvantage, however, that they are too complex and expensive or too difficult to handle for the user.

The present invention relates to a device which is simple and inexpensive and at the same time makes it possible to detach and mount the brush roller in a very simple manner. The apparatus of this invention comprises two flexible resilient bushings one end of which is closed, which are mounted in the apparatus, the ends of the brush roller shaft being inserted into said bushings.

Suitably, the brush roller is formed of two twisted wires between which the bristles are held. In a preferred embodiment, the wires are plastically deformed at their ends so that they form two substantially cylindrical journals which are inserted into the said bushings.

An embodiment of a brushing apparatus equipped with the device according to this invention is shown by way of example on the accompanying drawing.

Figure 1 shows the apparatus in elevation.

Figure 2 shows a plan-view of the container of the apparatus without cover.

Figure 3 shows how a brush roller is inserted or removed.

Figure 4 shows one end of a brush roller.

The brushing apparatus comprises a cylindrical flat container 1 with a detachable cover 2. The container 1 has a flat bottom well rounded around its circumference. In the bottom of the container, there are formed four rectangular openings 3. In each opening, there is arranged a brush roller 4, rotatably mounted in the opening with its shaft 5 extending in the longitudinal direction of the opening. The openings are surrounded within the container by upstanding baffles 6, 7. The interior of the container is divided by partitions 8 which extend radially and normally to the longitudinal axis of each opening, into four chambers, one for each brush roller.

The cover 2 is attached to the container 1 by means of a square peg 9 fixed to the container, said peg entering into a corresponding socket (not shown) on the cover. To the cover there is attached a handle 10 which is so disposed that after attachment of the cover it is directed at an angle of about 45° to the longitudinal axes of the brush rollers so that by the use of this handle the apparatus may be propelled over a carpet in a

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direction which makes about 45° angle to the axes of the brush rollers as indicated by the arrows in Figure 2.

The shafts 5 of the brush rollers 4 are formed of two intertwisted wires between which the bristles are held. As clearly seen in Figure 4, the wires are deformed at their ends so that they form substantially cylindrical journals 11. These journals are inserted in bearing members 12, 13 of rubber or similar flexible resilient material, said bearing members being mounted in holes in the cylindrical wall of the container and the opposed partition 8 respectively. The open end portions of the bushings are considerably thicker than the closed end portion and thus are relatively more rigid for providing bearing bushings for the roller shafts.

As clearly seen in Figure 3, it is very simple with this arrangement to mount the brush roller 4 by inserting one end 11 thereof into either bearing member 12 or 13, whereby this is deformed, whereupon it is easy to insert the opposite end into the other bearing members. Similarly, on account of the flexibility of the closed end portions of the bearings it is simple to remove the brush roller.

To reduce wear of the inner surfaces of the closed end portions of the bearings 12, 13 it is possible to provide a small metal plate on the inner side of the closed end wall, as suggested at 15 in Figure 3, against which the end of the brush roller will abut.

The arrangement shown may also be utilized in brush rollers for suction-cleaner nozzles.

I claim:

1. In brushing apparatus comprising a rigid frame and at least one brush roller having a shaft journaled at its ends in opposed bearings carried by said frame, the improvement characterized by the fact that at least one of said bearings comprises a cup-shaped member attached to the rigid frame, the open end portion of said member being relatively rigid to provide a bearing bushing portion for rotatably receiving an end of said shaft, and the closed end portion being flexible and resilient and thus free for axial extension and lateral displacement, whereby the end of said shaft may be readily moved axially within the bearing and at an angle to its normal position to facilitate the mounting and removal of the brush roller.

2. The improvement as set forth in claim 1 in which the open end bushing portion is thickened to attain bearing rigidity, and the closed end portion is thinner and remains resilient and flexible for the purpose described, and a hard metal plate is disposed upon the inner side of the closed end portion of the bearing for abutment by the end of the shaft.

3. The apparatus of claim 1 in which the shaft of the brush roller consists of twisted wires between which the bristles are held, said wires being plastically deformed at their ends so as to form substantially cylindrical journals which are inserted into the bearings.

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