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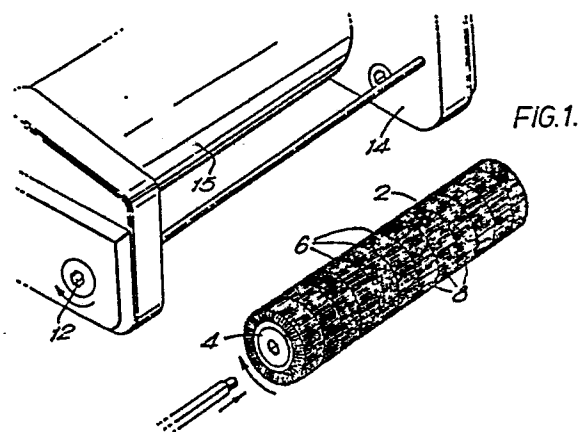
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54 Cleaning brush.

57 A cylindrical cleaning brush comprises abrasive fabric material arranged to form an outer tube 2 on an inner elongate core 4, the outer tube 2 consisting of longitudinally spaced sections 8 defined by radial cuts or divisions 6 in the fabric. In one form of construction the outer tube 2 may comprise a plurality of flaps of abrasive fabric folded over and with their opposite edges secured to the core 4 and their folds forming the outer surface of the outer tube.



CLEANING BRUSH

The present invention relates to a brush for a cleaning apparatus and is particularly concerned with a brush suitable for cleaning flat horizontal surfaces such as floors.

5 In this specification the term "cleaning" includes scrubbing, polishing, buffing or spray buffing. In addition, the term "polishing" includes depositing a suitable wax or polish onto a surface or both depositing the wax or polish and then buffing the surface to obtain the desired effect.

10 Previously proposed floor cleaning apparatus have incorporated rotary cleaning discs, brushes or pads. The brushes have been used to clean or scrub the surface, and the pad to polish or buff the cleaned surface. The problem
15 arises that a rotary brush or disc when used on an uneven surface will remove dirt from the high points and transfer it to the low points of the surface. When using a disc cleaner the pressure exerted on the surface by the disc cleaner frequently varies over the surface area of the
20 disc.

 It is an aim of the invention to alleviate the aforementioned problems, and according to the present invention there is provided a cylindrical cleaning brush comprising abrasive fabric material arranged to form an outer
25 tube on an inner elongate core, in which the fabric outer

tube consists of longitudinally spaced sections defined by radial cuts or divisions in the fabric. The fabric may be of any material suitable for the cleaning operation intended. One suitable fabric comprises a non-woven abrasive polyester/nylon mesh.

The fabric outer tube may be constructed in any convenient manner, and three suitable forms of construction are as follow:-

1. The outer tube consists of rectangular fabric flaps folded along their length so that both edges of each flap are secured to the inner core. Each of these 'loops' extends radially outwardly from the inner core and the folded edge of each loop constitutes part of the outer contacting surface of the fabric outer tube.

This construction avoids the problems found with a non-looped flat construction, of fibre shedding and fabric deformation.

2. The fabric is wrapped helically around the inner core, i.e. in a swiss-roll type of construction.

3. The fabric is in the form of a sleeve which is pulled over the inner core to make a tight fit thereon.

In each of these three constructions, the outer tube is formed of abrasive fabric material in sheet form, with a major surface of the sheet, from which the pieces are cut, forming the face which makes rubbing contact with the floor or other surface being cleaned.

One embodiment of the invention will now be described by way of example only and with reference to the accompanying drawing in which:-

FIGURE 1 is a perspective view showing one cleaning brush of invention and part of a cleaning apparatus to which the brush is to be fitted: and

FIGURE 2 is an end view of the brush of Figure 1.

- 3 -

Referring to the drawings, one cleaning brush of the invention includes an outer tube 2 of fabric material mounted on an inner core 4. This outer tube consists of a large number of rectangular fabric flaps folded along their length to form loops secured at their edges to the inner core 4, parallel to the length of the latter. The outer faces at the folded edges of the loop-flaps constitute the outer surface of the cleaning brush, and the side edges of the flats constitute the two ends of the brush. The flaps are tightly packed together around the periphery of the brush.

The outer tube 2 formed by the loop-flaps has radial cuts 6 made therein to divide the outer tube into a multiplicity of longitudinal section 8. In this example, these radial cuts are spaced at 2 cm intervals along the outer tube 2, and each radial cut 6 extends completely through the outer tube 2 so that each section 8 can deform on contact with the surface to be cleaned substantially independently of the adjacent sections.

The fabric material used in this example may comprise non-woven abrasive polyester/nylon mesh but it is to be understood that any suitable fabric material may be used for this invention. In this example the brush may have a diameter of 85 mm and a length in the range from 200 mm to 600 mm.

The inner core 4 can be made of any suitable material, such as polypropylene, and in this example has a hexagonal opening 10 in each end to align with similar openings 12 in the cleaning apparatus 14 by means of suitable bolts which are passed through the openings 12 in the opening 10 in the inner core 4.

The cleaning apparatus 14 which is shown comprises two cylindrical brushes each as shown and mounted to the apparatus parallel to and either side of a cylindrical casing 15 for the drive motor of the apparatus, which serves

to rotate the brushes in opposite directions. Any suitable brush speed may be envisaged, but high speeds are preferred, for example 650 rpm. In use, the weight of the machine is supported wholly by the two cylindrical brushes: each
5 of these contacts the floor over a narrow strip (typically 1 cm wide) running the length of the brush. Therefore the brushes make contact with the floor or other surface to be cleaned under very high pressure. An advantage of the brush constructions shown, particularly with this type
10 of cleaning apparatus is that the division of the fabric outer tube into sections 8 inhibits vibration of the brush which would otherwise be caused owing, in combination, to the density of the fabric material and the high revolution speed of the brush.

15 The loop construction of each flap ensures that the outer face of the material is in contact with the surface to be treated, giving optimum performance, and also maintains maximum durability of the material itself.

20 An advantage of this illustrated embodiment is that it creates friction with the surface to heat up the surface thereby activating polish sprayed onto the surface from a spray head of the apparatus. The brush then cleans the activated or liquified polish by buffing.

CLAIMS

1. A cylindrical cleaning brush comprising abrasive fabric material arranged to form an outer tube on an inner elongate core, in which the fabric outer tube consists of longitudinally spaced sections defined by radial cuts or divisions in the fabric.
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2. A cylindrical cleaning brush as claimed in Claim 1, in which the outer tube is formed of flaps of the abrasive fabric folded along their length and having their opposite edges secured to the inner core.
- 10 3. A cylindrical cleaning brush as claimed in Claim 2, in which said edges of each flap are aligned generally lengthwise of the brush.
4. A cylindrical cleaning brush as claimed in Claim 1, in which the outer tube is formed from a piece of said
15 fabric material wrapped helically around the inner core.
5. A cleaning apparatus comprising at least one cylindrical cleaning brush as claimed in any preceding claim.
6. A cleaning apparatus comprising two cylindrical cleaning brushes each as claimed in any one of claims 1
20 to 4, arranged to support the entire weight of the apparatus in use thereof.
7. A cleaning apparatus as claimed in Claim 6, including a drive motor for driving said brushes in opposite rotary directions.

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FIG. 1.

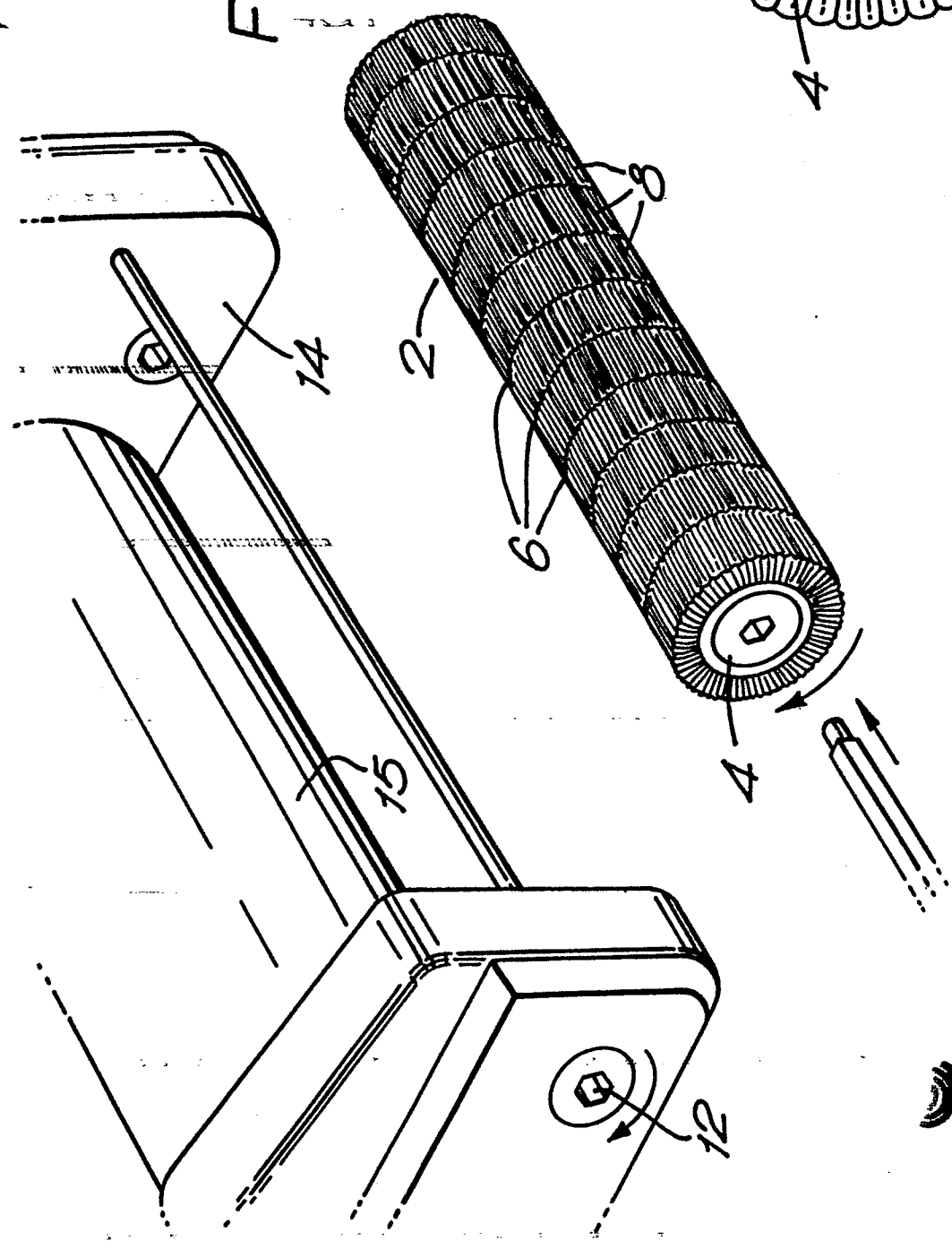


FIG. 2.

