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(54) **Removable support for mop type cloths**

(57) The present invention refers to a removable support for "mop" type cloths.

In particular, the present invention concerns a removable support for a mop cloth, comprising a support disc (3) and a removable disc (2), said removable disc (2) being able to be coupled with said support disc (3), characterised in that said removable disc (2) comprises a plurality of pyramid or cone-shaped projections (10) able to be coupled by shape coupling with corresponding hollow projections (18) present on said support disc (3).

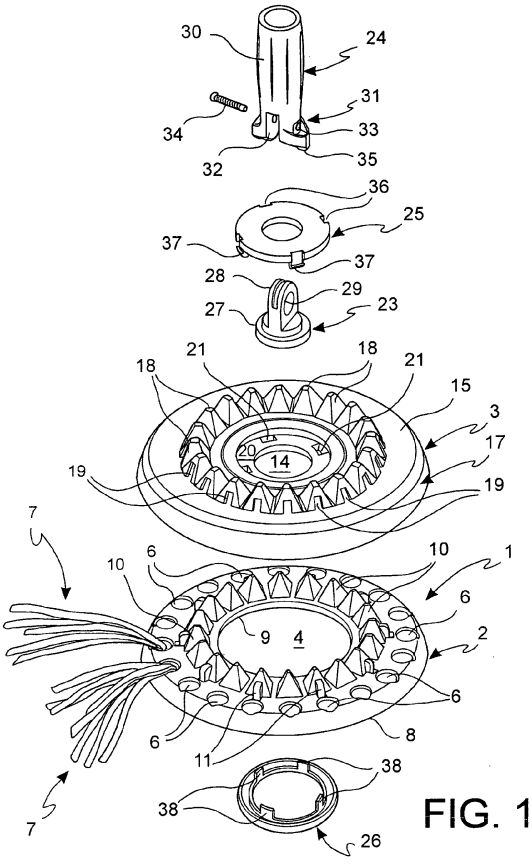

FIG. 1

EP 2 430 963 A2

Description

[0001] The present invention refers to a removable support for "mop" type cloths.

[0002] The use of mop cloths made from non-woven fabric, microfibre or cotton yarn, for cleaning household surfaces and for industrial cleaning is now very common.

[0003] The cloth mop can be of different types: the so-called "flat mop" consisting of a rectangular-shaped cloth from which a plurality of strings of fabric or non-woven fabric comes out; and the classic mop or cylindrical mop, indeed consisting of a cylindrical portion from which strips of fabric or non-woven fabric come out in concentric circles. Whereas the "flat mop" is normally used for cleaning industrial surfaces, the cylindrical mop, which is smaller, is intended for domestic use.

[0004] The aforementioned cylindrical cloth mop is permanently fixed to a bush which has a seat in which an end of a handle is inserted. When, after use, it is necessary to wash the cloth mop, the user takes care of detaching the bush from the handle so as to be able to conveniently wash the cloth mop. It is therefore important that the separation of the cloth mop from the handle and its reassembly after washing are simple and fast.

[0005] The present invention concerns a removable support for a mop cloth as outlined in the attached claims and in the rest of the description, in which the removal of the support of the cloth mop and its subsequent reassembly are particularly simplified.

[0006] Further characteristics and advantages of the present invention shall become clearer from the description of some embodiments, given in the rest of the description as an indication and not for limiting purposes, with reference to the following figures:

Figure 1 represents an exploded perspective view of the removable support for a mop cloth according to the present invention;

Figure 2 represents a cross-section view of a detail of the support according to the invention.

[0007] With reference to the figures, the removable support for a mop cloth, wholly indicated with reference numeral 1, comprises a removable disc 2, that can be coupled with a support disc 3.

[0008] The removable disc 2 has a central opening 4, which gives it the shape of a ring, a lower face (not visible in the figures), an upper face 5, an outer periphery 8 and an inner periphery 9.

[0009] Near to the outer periphery 8 of the upper face 5 of the removable disc 2 a plurality of seats 6 is arranged, for example in the form of concave pits, intended to receive a bunch of strings 7 made from non-woven fabric or another material from which a cloth mop is normally made. The strings 7 are fixed on one end inside said seats 6, for example through gluing. In figure 1, for example, only two seats 6 have strings 7, but it should be noted that a bunch of strings 7 is associated to all the seats 6, so as to constitute in their entirety a crown-shaped cloth mop.

[0010] In one embodiment, such strings 7 are made from 100% microfibre and there are between 400 and 700 of them, preferably around 600.

[0011] The upper face 5 of the removable disc 2 also has, near its inner periphery 9, a plurality of pyramid-shaped projections 10, which in the example shown in figure 2 are hollow, so as to be obtained through moulding with a minimum waste of material, but which could also be solid in other embodiments. In figure 1 the number of pyramid-shaped projections 10 is equal to the number of seats 6, but there is nothing to prevent such a number from being lower.

[0012] In the embodiment shown in the figures, the pyramid-shaped projections 10 have four faces, but in other embodiments they could be pyramids with three faces or with five or more faces. In another embodiment, such projections 10 can be cone-shaped or substantially cone-shaped.

[0013] At least two, preferably at least three, more preferably at least four projections 10 have a tooth 11 along a face of the pyramid or along the side surface of the cone.

[0014] In one embodiment, such a tooth 11 extends from the base of the projection 10 with a substantially vertical profile 12 and joins to the side surface thereof, roughly half way up, with a rounded profile 13.

[0015] The removable disc 2 is intended to be coupled by shape-coupling with the support disc 3.

[0016] The support disc 3 has an upper face 15, a lower face 16, a central portion 14, depressed with respect to said upper face 15, and an annular portion 20 arranged between said central portion 14 and said upper face 15 and at an intermediate level between said portions, so that, in section, the assembly forms a profile with a double step. The central portion 14, in the drawings, is circular-shaped, but it can have any shape (square, triangle, etc.).

[0017] The outer edge 17 of the support disc 3 is countersunk towards the bottom, so as to couple with the edge of the removable disc 2.

[0018] The upper face 15 of the support disc 3 has a plurality of hollow projections 18 with shapes and sizes such as to receive by shape coupling the projections 10 of the removable disc 2. Therefore, the hollow projections 18 will have the shape of a pyramid with three, four or more faces, or cone-shaped or substantially cone-shaped.

[0019] The hollow projections 18 are arranged aligned with the projections 10 of the removable disc 2 and there are the same number or more than the number of the projections 10.

[0020] The hollow projections 18 have an opening 19, arranged on their side surface, which extends in a position corresponding to the teeth 11 of the projections 10 of the removable disc 2 and it has a shape and dimensions such as to receive said teeth 11 and as to allow an engagement between the vertical profile 12 of a tooth 11 and the corresponding edge of the opening 19. In such

a way there is substantially a snap-engagement between a projection 10 of the removable disc 2 and a corresponding hollow projection 18 of the support disc 3.

[0021] The number of openings 19 of the hollow projections 18 will be at least the same as the number of teeth 11, but it could also be greater. In one embodiment, all the hollow projections 18 have an opening 19, so as to not require a particular orientation by the user during assembly.

[0022] The annular portion 20 of the support disc 3 has a plurality (four in the figures) of holes 21, for example rectangular-shaped holes.

[0023] The removable support for a mop cloth according to the present invention also comprises a device 22 for fastening to a handle or grip (not shown).

[0024] Such a fastening device 22 comprises an articulation element 23 able to be associated with a sleeve 24, an upper attachment ring 25 and a lower stop ring 26.

[0025] The articulation element 23 has a base 27 of dimensions such as to be able to be housed in the central portion 14 of the support disc 3. The base 27 comprises an articulation portion 28 that extends at the top and has a through hole 29 arranged transversally.

[0026] The sleeve 24 comprises a hollow cylindrical portion 30, having a suitable size so as to house one end of a handle, and a hinge portion 31, comprising a longitudinal slit 32 -which divides the hinge portion 31 into two parallel members and is intended to be arranged straddling the articulation portion 28 of the articulation element 23 - and a transversal hole 33 that passes through the two parallel members, intended to be passed through by a pin 34.

[0027] The two parallel members of the hinge portion 31 end at the bottom with a pair of teeth 35, the function of which shall become clearer in the rest of the following description.

[0028] The attachment ring 25 comprises, along its periphery, a series of notches 36, the number and position of which corresponds to the number and position of the holes 21 arranged on the support disc 3.

[0029] Respective hooked teeth 37 project below said notches 36, said teeth being intended to snap-engage with said holes 21 of the support disc 3.

[0030] The stop ring 26 comprises a series of tongues 38, which extend upwards and are arranged aligned with the holes 21 of the support disc 3, so as to be able to be inserted in said holes.

[0031] The size of the holes 21 is such as to be able to house both a hooked tooth 37 of the attachment ring 25 and a tongue 38 of the stop ring 26 in radial coupling.

[0032] The fastening device 22 is assembled with the support disc 3 in the following manner.

[0033] The articulation portion 28 of the articulation element 23 is inserted through the hole of the attachment ring 25, therefore the sleeve 24 is arranged straddling said articulation portion 28, so as to align the transversal hole 33 with the through hole 29 of the articulation element 23. The pin 34 is thus inserted through the aligned holes, so as to form a hinge. In such a manner, the attachment ring 25 is held in position between the sleeve 24 and the articulation element 23, but still allowing the respective rotation of the latter with respect to the attachment ring 25.

[0034] At this point, the attachment ring 25 is snap-engaged - through the hooked teeth 37 - into the holes 21 of the support disc 3. Subsequently, the stop ring 26 is positioned from below, inserting the tongues 38 into the respective holes 21, in radial engagement with the hooked teeth 37. The tongues 38 thus provide for keeping the hooked teeth 37 pressed against the edge of the holes 21, preventing them from being released.

[0035] Finally, the removable disc 2 is positioned, said disc having the cloth mop fixed to it, thanks to the engagement of the projections 11 with the hollow projections 18 of the support disc 3.

[0036] The fastening device 22 allows articulation in all directions, both by rotation of the disc and by inclination of the handle around the hinge formed by the pin 34. The teeth 35 press against the upper surface of the base 27 of the articulation element 23 when the handle is in the vertical position, keeping this position for as long as it is desired. If, on the other hand, it is desired to incline the handle, a limited force should be applied which makes it possible for the teeth 35 to be disengaged. This is easy thanks to the fact that the material from which the various parts of the device are made is a plastic material, and therefore not excessively rigid.

[0037] If, on the other hand, it is desired to wash the cloth mop after use, it is sufficient to disengage the teeth 11 from the respective openings 19, thus removing the removable disc 2, which can be inserted, as usual, directly into the washing machine.

[0038] The present invention makes it possible to remove and rearrange the cloth mop in a fast and simple manner. Indeed, the pyramid or cone shape of the projections 10 and of the hollow projections 18, which form its seat, is facilitated by the actual shape of such projections, which constitutes an aid for mutual insertion.

[0039] It should be clear that only some particular embodiments of the present invention have been described, to which a man skilled in the art can carry out all modifications necessary in order to adapt it to particular applications, without for this reason departing from the scope of protection as defined in the attached claims.

Claims

1. Removable support for a mop cloth, comprising a support disc (3) and a removable disc (2), said removable disc (2) being able to be coupled with said support disc (3), **characterised in that** said removable disc (2) comprises a plurality of pyramid or cone-shaped projections (10) able to be coupled by shape coupling with corresponding hollow projections (18) present on said support disc (3).

2. Support according to claim 1, wherein at least two, at least three, or else at least four projections (10) of the removable disc (2) have a tooth (11) along a face of the pyramid or along the side surface of the cone; and wherein said hollow projections (18) of the support disc (3) have an opening (19), arranged on their side surface, which extends in a position corresponding to the teeth (11) of the projections (10) of the removable disc (2) and it has a shape and dimensions such as to receive said teeth (11) and to engage with them.

3. Support according to claim 2, wherein said tooth (11) extends from the base of the projection (10) with a substantially vertical profile (12) and joins to the side surface thereof, roughly half way up, with a rounded profile (13).

4. Support according to any one of claims 1 to 3, wherein there are the same number or more of said hollow projections (18) with respect to the number of projections (10).

5. Support according to any one of claims 2 to 4, wherein there are the same number or more of openings (19) of the hollow projections (18) with respect to the number of teeth (11).

6. Support according to any one of claims 1 to 5, wherein said projections (10) are shaped like a pyramid with three, four, five or more faces.

7. Support according to any one of claims 1 to 6, wherein said removable disc (2) has a central opening (4), an upper face (5), an outer periphery (8) and an inner periphery (9), near to said outer periphery (8) on the upper face (5) a plurality of seats (6) being arranged in which a bunch of strings (7) made from non-woven fabric or another material suitable for a mop cloth is fixed.

8. Support according to any one of claims 1 to 7, wherein said support disc (3) has an upper face (15), a lower face (16), a central portion (14), depressed with respect to said upper face (15), and an annular portion (20) arranged between said central portion (14) and said upper face (15) and at an intermediate level between said portions and in which the outer edge (17) of the support disc (3) is countersunk towards the bottom, so as to couple with the edge of the removable disc (2).

9. Support according to any one of claims 1 to 8, wherein said support also comprises a device (22) for fastening to a handle or grip, comprising an articulation element (23) able to be associated with a sleeve (24), an upper attachment ring (25) and a lower stop ring (26).

10. Support according to claim 9, wherein said articulation element (23) has a base (27) of dimensions such as to be able to be housed in the central portion (14) of the support disc (3) and it comprises an articulation portion (28) that extends at the top and has a through hole (29) arranged transversally; and wherein said sleeve (24) comprises a hollow cylindrical portion (30), having a suitable size to house an end of a handle, and a hinge portion (31), comprising a longitudinal slit (32), which divides the hinge portion (31) into two parallel members intended to be arranged straddling the articulation portion (28) of the articulation element (23), and a transversal hole (33) that passes through the two parallel members, intended to be passed through by a pin (34).

11. Support according to claim 10, wherein the two parallel members of the hinge portion (31) end at the bottom with a pair of teeth (35).

12. Support according to any one of claims 9 to 11, wherein the annular portion (20) of the support disc (3) has a plurality of holes (21); and wherein the attachment ring (25), along its periphery, comprises a series of notches (36), the number and position of which corresponds to the number and position of the holes (21) arranged on the support disc (3), below said notches (36) extending respective hooked teeth (37), intended to snap-engage with said holes (21) of the support disc (3).

13. Support according to any one of claims 9 to 12, wherein said stop ring (26) comprises a series of tongues (38), which extend upwards and are arranged aligned with the holes (21) of the support disc (3), so as to be able to be inserted into said holes, the size of the holes (21) being such as to be able to receive both a hooked tooth (37) of the attachment ring (25) and a tongue (38) of the stop ring (26) in radial coupling.

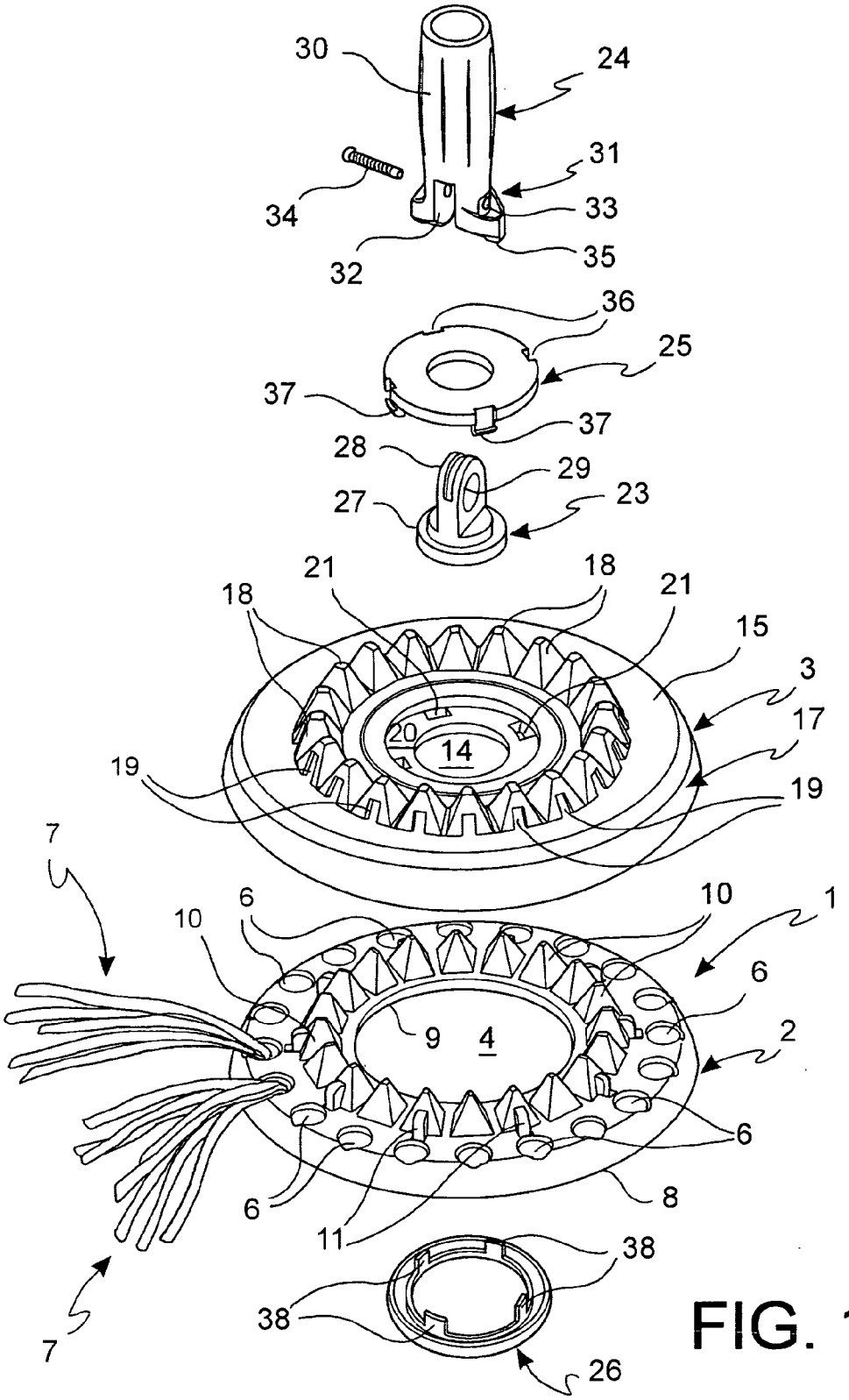
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FIG. 1

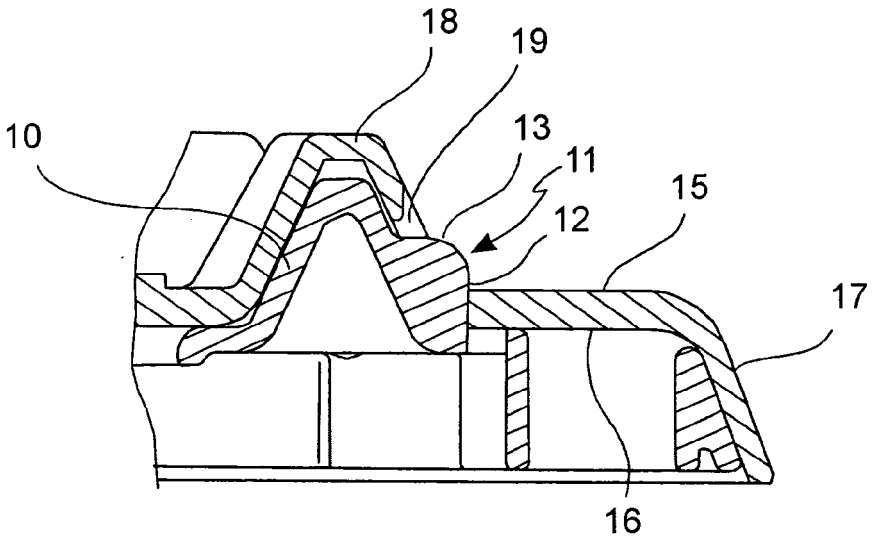

FIG. 2