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(54) **SCRUB HEAD**

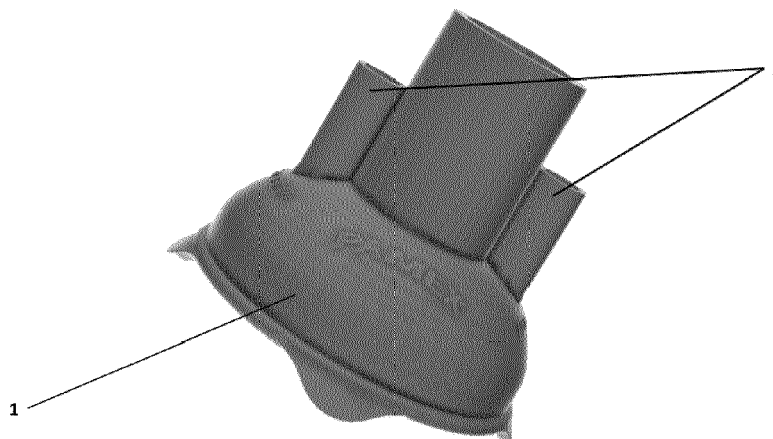
(57) The present invention relates to a scrub head comprising at least one main body with a concave or substantially concave shape, comprising connection means for connecting to a longitudinal element at one of the ends thereof; and a plurality of textile elements that are mechanically attached to the main body by means of a supporting element, wherein

- the supporting element is U-shaped or substantially

U-shaped, configuring at least two legs;

- and the main body comprises at least two housings configured to house the two legs of the supporting element and fasten the supporting element to the main body by the concave portion of the main body, such that the supporting element is concealed or substantially concealed with respect to the outer perimeter of the main body.

Figure 1



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Description

TECHNICAL FIELD

[0001] The present invention belongs to the field of cleaning tools, more specifically to floor cleaning tools, such as mops, and more specifically to floor cleaning tools comprising an exchangeable head with a plurality of textile elements used for scrubbing and/or drying surfaces.

BACKGROUND OF THE INVENTION

[0002] Currently, mops are widely known comprising at least one longitudinal element connected at one of the ends thereof to a head comprising a plurality of textile elements used to clean and dry the surfaces covered.

[0003] These textile elements comprise high liquid absorption power, however, none of them is capable of achieving a descaling of the dirt, due to the low mechanical strength thereof.

[0004] For this reason, numerous documents belonging to the state of the art have been aimed at achieving scrub heads exhibiting substantial improvements during descaling operations to achieve a better finish with the dirt that is most difficult to remove.

[0005] For example, document ES1138465 is known, which describes a head for a mop head, with a lower assembly part made up of a spherical or substantially spherical soft body, formed by a mass of polyurethane foam or similar, which will be covered by a flexible and absorbent laminar material which, on the face thereof that is facing the upper part, exhibits a stem with a polygonal section ending in a pyramidal top that assembles and fastens the mop and is coupled to the upper portion thereof.

[0006] Document ES0290667 also belongs to the state of the art, wherein a head for a mop head is described, which is characterised in that the mop head is assembled in the body of the head by means of a coupling part consisting of a central stem with a polygonal cross section ending in a pyramidal top, and radial arms, which is placed at the centre of the winding of a cloth band, the arms thereof being inserted into holes made in the aforementioned winding.

[0007] Document ES1209989 is also known, which describes a head with additional fastening means between the different strips of textile material, having the advantage of aiding in the retention of said strips, being joined together, achieving a head configuration that is more efficient and long-lasting.

[0008] Document ES1078469 also belongs to the state of the art, in which a head for mops is described wherein the strips of textile material, made from a flexible laminar material, which are comprised of two microfibre cords, and between each one of them a material with descaling properties is incorporated.

[0009] Lastly, we can also find document ES1214419,

which describes a scrub head comprising two lower extensions topped off with harpooned nails, and a cover with windows configured for inserting the previous extensions, anchoring being achieved by using the nails, a means of reinforcing the head itself being achieved, with a compact and strong configuration.

[0010] However, in the previous documents, and in those remaining documents belonging to the state of the art and/or that we can find on the market, the fastening means are always on the outer portion of the scrub head, such that when a pressure that is not very high is applied, contact is caused between the aforementioned fastening means and the surface being cleaned, causing discomfort during cleaning and possibly causing damage to the surface itself.

[0011] None of the previous documents achieve a true descaling of the dirt either, since the improvements in the anchoring or in the configuration of the textile elements do not meet the cleaning needs, since they do not allow the use of strong elements that make it possible to repeatedly pass over the dirt present on the surfaces, achieving the desired descaling.

DESCRIPTION OF THE INVENTION

[0012] The scrub head proposed by the invention is therefore configured as a notable novelty within its field of application, since as it is implemented, the aforementioned objectives are satisfactorily and exhaustively achieved, the characterising details that make it possible and distinguish it being conveniently included in the final claims accompanying this description.

[0013] The present invention proposes a scrub head that exhibits an advantage in the cleaning and absorption of said surfaces through improvements introduced in the attachment assembly between the plurality of longitudinal textile elements and the scrub head itself, which make it possible to avoid contact between the surface being cleaned and the fastening means, preventing damage thereto during cleaning operations.

[0014] At the same time, an improvement in the fastening of the textile elements to the scrub head is proposed, such that a greater compaction thereof is enabled, improving the efficiency of the scrubbing and drying of the surfaces.

[0015] To achieve this, the scrub head will comprise a main body, in the form of a concave structure or inverted cup, which configures a more pronounced concavity than those existing on the market, such that the greatest grouping of the textile elements that make up the mop is achieved, improving the general properties of the product itself.

[0016] And additionally, it will comprise a supporting element, by way of a holding clip for the textile elements, which is connected to the head by the lower, or inner, portion of the cup. The supporting element may be U-shaped or substantially U-shaped, and will fit into at least two windows located in the main body of the head, such

that a mechanical fastening of the supporting element is achieved, which will fasten the textile elements to the main body itself.

[0017] In this way, a greater compaction of the textile elements is achieved, which will improve the cleaning and absorption capacities of the complete assembly.

[0018] The present invention also proposes a scrub head that achieves a complete descaling of the dirt present on the surfaces covered, while improving the cleaning and absorption of said surfaces through improvements introduced in the assembly formed by the plurality of longitudinal textile elements.

[0019] To achieve this, the incorporation of elements in the head that enable the descaling of the dirt that is most adhered thereto is proposed, which make it possible to attack the dirt embedded in the surfaces.

[0020] Additionally, and to improve the descaling of the dirt, the head will comprise at least one protrusion on the outer perimeter thereof, which will be made of the same material as the mop head, i.e., of a plastic material or with similar features, with sufficient mechanical strength so as to be used against surfaces during descaling tasks.

[0021] In other words, according to the invention, these protrusions will be used to directly attack the dirt embedded in the surfaces, using them by way of scrapers, achieving a complete descaling.

[0022] In this way, the descaling features of the scrub head are improved, allowing the removal of the dirt that is most adhered to the surfaces that are being cleaned.

[0023] The scrub head and the assembly of elements described represent an innovative structure with structural and constitutive features heretofore unknown, reasons which, taken together with its usefulness, provide it with sufficient grounds for obtaining the requested exclusivity privilege.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] To complement the description provided herein, and for the purpose of helping to make the features of the invention more readily understandable, said description is accompanied by a set of drawings constituting an integral part of the same, which by way of illustration and not limitation represents the following:

Figure 1 shows a view of the main body

Figure 2 shows a view of the supporting element.

Figure 3 shows a perspective view of another preferred embodiment of the invention.

List of references and figures:

[0025]

1. Main body
2. Supporting element
3. Housings for the supporting element
4. Protrusion

PREFERRED EMBODIMENT OF THE INVENTION

[0026] In the following detailed description of the preferred embodiments, reference is made to the accompanying drawings which form part of this specification and in which specific preferred embodiments are shown by way of illustration in which the invention may be carried out. These embodiments are described in sufficient detail to enable those skilled in the art to carry out the invention, and it is understood that other embodiments may be used and logical structural, mechanical, electrical, and/or chemical changes may be performed without departing from the scope of the invention. To avoid details that are not required to enable those skilled in the art to carry out the detailed description, it should therefore be taken in a non-limiting sense.

[0027] Specifically, the present invention proposes a scrub head comprising a main body 1, concave or substantially concave in shape, comprising connection means for connecting to a longitudinal element at one of the ends thereof, such as a stick, and a plurality of textile elements mechanically attached to the main body 1 by means of a supporting element 2, which is characterised in that:

- the supporting element 2 is U-shaped or substantially U-shaped, configuring at least two legs,
- and the main body 1 comprises at least two housings configured to house the two legs of the supporting element 2 and fasten the supporting element 2 to the main body 1 by the concave portion of the main body 1, such that the supporting element 2 is concealed or substantially concealed with respect to the outer perimeter of the main body 1.

[0028] In other words, the supporting element 2 will be inside the concavity of the main body 1, such that at no time during the cleaning operation, the supporting element 2 can come into contact with the surface being cleaned. With this, the plurality of textile elements is the only one making direct contact with the aforementioned surface.

[0029] It is also established that the supporting element 2 will be used to achieve a mechanical attachment between the main body 1 and the plurality of textile elements, such that they remain attached to the main body throughout the cleaning tasks, without allowing a possible detachment.

[0030] In a preferred embodiment, the concavity of the main body 1 is comprised between 45° and 60° opening, such that, together with the compact morphology of the supporting element 2, a compact configuration of the textile elements is achieved, significantly improving the operation of cleaning and absorption of liquids from the surfaces covered with the head object of the present invention.

[0031] In another preferred embodiment of the inven-

tion, as Figure 3 schematically represents, the present invention proposes a scrub head comprising at least one main body 1, with connection means for connecting to a longitudinal element at one of the ends thereof, such as a stick or extension element; and also comprising a plurality of textile elements, mechanically attached to the main body 1, which will be characterised in that the main body 1 comprises a concave or substantially concave shape, in the shape of an inverted cup, and comprises on the outer perimeter thereof at least one protrusion 4, configured by way of descaling element for the dirt that is adhered to the surfaces.

[0032] In this way, by incorporating the protrusions 4 to the main body 1, an element is achieved that can be used to remove the dirt directly, by rubbing or directly attacking the dirt using said protrusions 4.

[0033] Preferably, these protrusions 4 will be made of the same material as the main body 1, although in a non-limiting manner, since any material comprising sufficient mechanical features so as to achieve the stated objective of removing the dirt by direct attack of the protrusions 4 may be used.

[0034] In another preferred embodiment, the protrusions 4 will have the shape of a rounded lip, such that the objective of descaling dirt is achieved, but without damaging the surface to be cleaned, since it will not comprise sharp edges that could cause damage to the surface.

[0035] Having sufficiently described the nature of the present invention, as well as the ways of implementing it, it is not considered necessary to extend its explanation for any person skilled in the state of the art to understand its scope and the advantages which derive from it, specifying that, within its essential nature, it can be carried out in other embodiments that differ in detail from the one provided by way of example, and which are also covered by the requested protection, provided that they do not alter, change or modify the fundamental principle thereof.

Claims

1. A **scrub head** comprising at least one main body (1) with a concave or substantially concave shape, comprising connection means for connecting to a longitudinal element at one of the ends thereof; and a plurality of textile elements that are mechanically attached to the main body (1) by means of a supporting element (2), **characterised in that**

- the supporting element (2) is U-shaped or substantially U-shaped, configuring at least two legs;
- and the main body (1) comprises at least two housings configured to house the two legs of the supporting element (2) and fasten the supporting element (2) to the main body (1) by the concave portion of the main body (1), such that the

supporting element (2) is concealed or substantially concealed with respect to the outer perimeter of the main body (1),

2. The **scrub head** according to claim 1 **characterised in that** the concavity of the main body (1) is between 45° and 60° opening.
3. The **scrub head** according to any of the preceding claims, **characterised in that** it comprises at least one protrusion (4) on the outer perimeter thereof.
4. The **scrub head** according to claim 3, **characterised in that** the protrusion (4) is made of the same material as the main body (1).
5. The **scrub head** according to claim 3 or 4, **characterised in that** the protrusion (4) comprises a shape by way of a rounded lip.

Figure 1

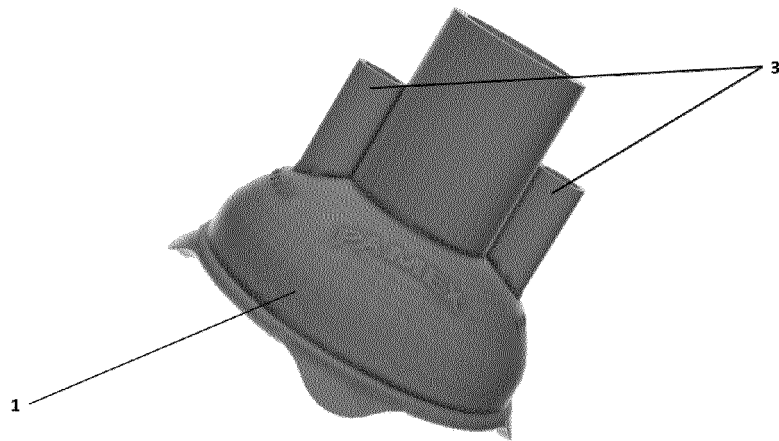


Figure 2

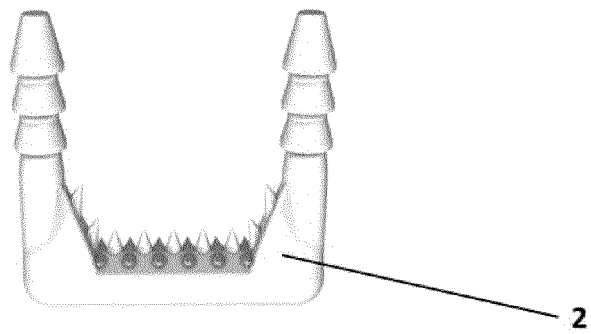
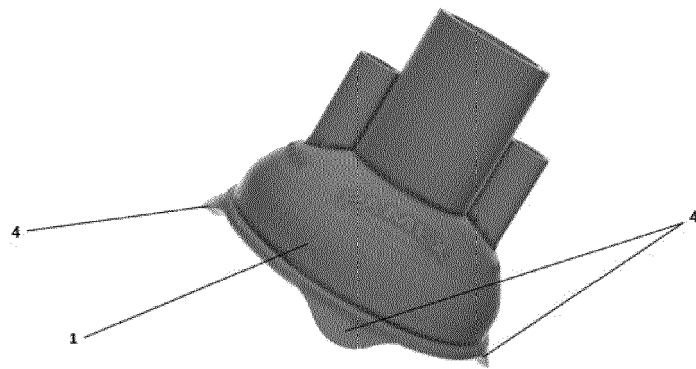


Figure 3





EUROPEAN SEARCH REPORT

Application Number

EP 22 38 2580

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 524 479 A (WRIGHT PAUL O [US]) 25 June 1985 (1985-06-25) * columns 3-5; figures *	1,2	INV. A47L13/252 A47L13/46
X	ES 1 209 989 U (ENTIDAD MAYA S L [ES]) 16 April 2018 (2018-04-16) * pages 5,6; figures 1,2 *	1-5	
X	EP 0 537 963 B1 (UNILEVER PLC [GB]; UNILEVER NV [NL]) 13 September 1995 (1995-09-13) * columns 3,4; figure 2 *	1-5	
X	WO 2010/136958 A1 (MESSINA CARMELA [IT]) 2 December 2010 (2010-12-02) * page 5, line 25 - page 11, line 16; figures 1,2 *	1-4	
X	WO 2009/127957 A1 (GIORI DI GIORI PAOLO & C S N C [IT]; GIORI PAOLO [IT]) 22 October 2009 (2009-10-22) * pages 3-7; figures *	1-4	TECHNICAL FIELDS SEARCHED (IPC)
X	EP 1 727 457 B1 (3M INNOVATIVE PROPERTIES CO [US]) 21 May 2008 (2008-05-21) * paragraphs [0013] - [0023]; figures 1-9 *	1-4	A47L
X	US 3 996 638 A (SCAROLA LEONARD J) 14 December 1976 (1976-12-14) * columns 2,3; figures *	1,2	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 November 2022	Examiner Lopez Vega, Javier
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 38 2580

09-11-2022

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4524479 A	25-06-1985	NONE	
ES 1209989 U	16-04-2018	NONE	
EP 0537963 B1	13-09-1995	BR 9203962 A	27-04-1993
		DE 69204795 T2	18-04-1996
		EP 0537963 A1	21-04-1993
		ES 2078664 T3	16-12-1995
		GR 3018269 T3	29-02-1996
		JP H05199974 A	10-08-1993
		TR 27184 A	29-11-1994
		ZA 927919 B	14-04-1994
WO 2010136958 A1	02-12-2010	CN 102458207 A	16-05-2012
		EP 2434934 A1	04-04-2012
		ES 2465069 T3	05-06-2014
		IT 1395704 B1	19-10-2012
		WO 2010136958 A1	02-12-2010
WO 2009127957 A1	22-10-2009	NONE	
EP 1727457 B1	21-05-2008	AT 395861 T	15-06-2008
		BR PI0508283 A	07-08-2007
		CN 1942131 A	04-04-2007
		EP 1727457 A1	06-12-2006
		ES 2306121 T3	01-11-2008
		PL 1727457 T3	31-10-2008
		US 2007169292 A1	26-07-2007
		WO 2005087076 A1	22-09-2005
US 3996638 A	14-12-1976	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 1138465 [0005]
- ES 0290667 [0006]
- ES 1209989 [0007]
- ES 1078469 [0008]
- ES 1214419 [0009]