(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 384 806 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
10.10.2018 Bulletin 2018/41

(21) Application number: **16868070.0**

(22) Date of filing: **12.07.2016**

(51) Int Cl.:
A46B 7/02 *(2006.01)*

(86) International application number:
PCT/ES2016/070523

(87) International publication number:
WO 2017/089631 (01.06.2017 Gazette 2017/22)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

(30) Priority: **27.11.2015 ES 201531320 U**

(71) Applicant: **Macias Roncero, Jorge**
28818 Madrid (ES)

(72) Inventor: **Macias Roncero, Jorge**
28818 Madrid (ES)

(74) Representative: **Pérez Gómez de Zamora, Carlos**
Velazquez, 114, 2 Izd
28006 Madrid (ES)

(54) IMPROVED SWEEPING BRUSH

(57) An improved sweeping brush, of the type including a long handle or stick and a brush with bristles or filaments distributed on its bottom surface in order to sweep a surface is disclosed. The brush is constituted by three brush bodies, one of them defining an essentially rectangular central brush body whose ends are shaped by respective lugs, and two lateral brush bodies whose corresponding ends are housed in said lugs, the lateral brush bodies being able to be unfolded in the manner of wings projecting outwards from the central body (1) an angle of 180° with respect to the corresponding central transverse axes of the lugs.

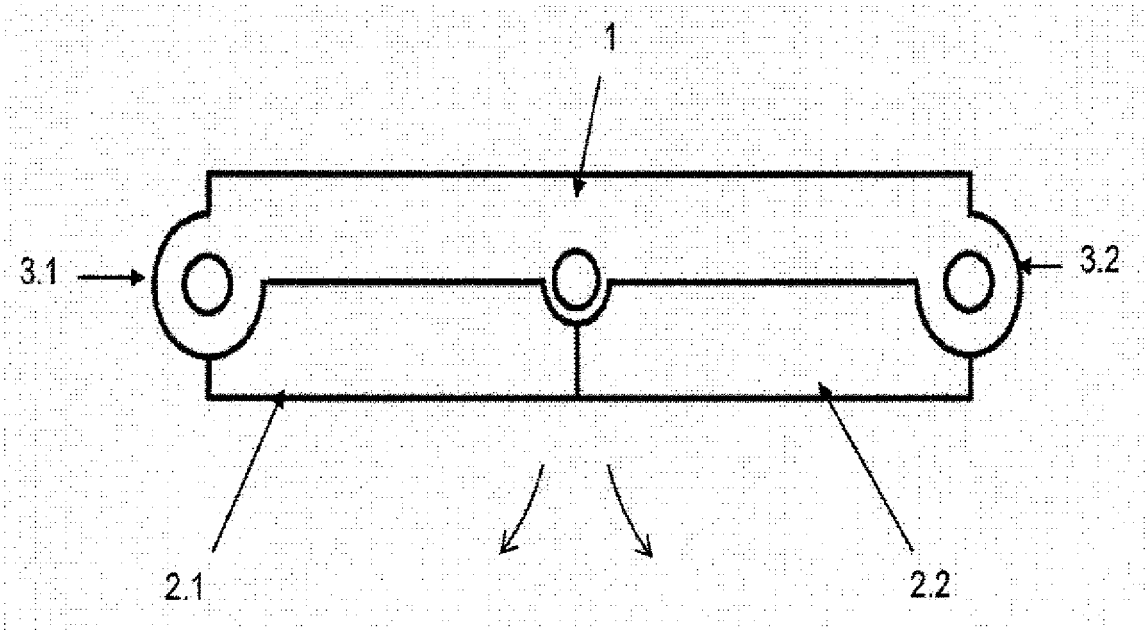

Figure 1

EP 3 384 806 A1

Description

[0001] The present invention relates to an improved sweeping brush, of the type including a long handle or stick and a brush with bristles or filaments distributed on its lower surface in order to sweep a surface.

[0002] In particular, the sweeping brush of the invention makes it possible to increase the length of the brush itself by unfolding two lateral wings disposed therein by means of a joint at each of its ends.

[0003] Sweeping brushes of the aforementioned type of very different sizes, which allow surface sweeping, are well known. Thus, for example, sweeping brushes are known which vary essentially on their work surface, such as garden brushes or household brushes. In fact, for the sweeping of surfaces that vary from a few square meters to large surfaces, brushes of different sizes are usually used, with different work surfaces, which implies that it is necessary to store more than one brush, with the consequent problem of space and the cost that this need to dispose of brushes of different lengths implies.

[0004] The present invention solves the aforementioned disadvantages, by providing an improved sweeping brush that includes two laterally unfoldable brush wings on the brush body, which increase the working surface of the brush by almost twice.

[0005] For this, the sweeping brush of the invention is shaped essentially in three brush bodies coupled together, one central and two lateral, the lateral brush bodies being able to be unfolded in order to increase the work surface.

[0006] Next, the invention is described based on an embodiment thereof and with reference to the attached figures, in which:

Fig. 1: schematic top view of the brush body in folded position;

Fig. 2: schematic top view of the brush body in unfolded position;

Fig. 3: schematic perspective view of the sweeping brush in unfolded position.

[0007] With reference to Figure 1, the brush of the invention is constituted by three brush bodies (1, 2.1, 2.2), one of them defining an essentially rectangular central brush body, in the figure the body (1) and two lateral brush bodies (2.1, 2.2), the lateral brush bodies being able to be unfolded to increase the work surface.

[0008] This brush body (1) has in its upper part a hole for housing a corresponding brush handle, for example a threaded hole for screwing a brush handle therein.

[0009] As seen in Figure 1, the ends of the central body (1) are shaped by respective extensions or lugs (3.1, 3.2) in the longitudinal direction of the body (1). These lugs (3.1, 3.2) accommodate corresponding ends of the lateral brush bodies (2.1, 2.2) so that they can unfold in the manner of wings projecting outwards from the central body (1) an angle of 180°, leaving these lateral bodies (2.1, 2.2), once unfolded, aligned with the central body (1).

[0010] For this purpose, both lugs (3.1, 3.2) house a spring latching mechanism cooperating with a corresponding push-button and unfoldably fixing the lateral brush bodies (2.1, 2.2). This spring latching system allows, when released, the side brush bodies (2.1, 2.2) to rotate 180° with respect to the corresponding central transverse axes of the lugs (3.1, 3.2) unfolding from the central body (1). Similarly, the lateral bodies (2.1, 2.2), when folded, perform the same rotation in the opposite direction, coupling and fixing to the central body (1).

[0011] In addition, lateral bodies (2.1, 2.2) are designed in correspondence of form with the central body (1), so that they remain coupled to said central body (1) both in its folded and unfolded condition.

[0012] Thus, for example, the sweeping brush is of the type in which the stick receiving hole is displaced from the center of the central body (1) projecting outwardly from it, such as shown in the figures, the free ends of the lateral bodies (2.1, 2.2) assume a curved shape to conform, in folded condition, to the shape of said hole (see figure 2).

[0013] Conventionally, the three brush bodies (1, 2.1, 2.2) include on their lower surface bristles or filaments projecting perpendicularly to enable sweeping.

[0014] In an embodiment of the invention, the brush bodies (1, 2.1, 2.2) are hollow in order to decrease the production cost and to lighten the sweeping brush.

Claims

1. An improved sweeping brush, of the type including a long handle or stick and a brush with bristles or filaments distributed on its bottom surface in order to sweep a surface, **characterized in that** the brush is constituted by three brush bodies (1, 2.1, 2.2), one of them defining an essentially rectangular central brush body (1) whose ends are shaped by respective lugs (3.1, 3.2), and two lateral brush bodies (2.1, 2.2) whose corresponding ends are housed in said lugs (3.1, 3.2), the lateral brush bodies (2.1, 2.2) being able to be unfolded in the manner of wings projecting outwards from the central body (1) an angle of 180° with respect to the corresponding central transverse axes of the lugs (3.1, 3.2).

2. An improved sweeping brush according to claim 1, **characterized in that** both lugs (3.1, 3.2) house a spring latching mechanism cooperating with a corresponding push-button and unfoldably fixing the lateral brush bodies (2.1, 2.2).

3. An improved sweeping brush according to claim 1, **characterized in that** the lateral bodies (2.1, 2.2)

are designed in correspondence of form with the central body (1), so that they remain coupled to said central body (1) both in its folded and unfolded condition.

4. An improved sweeping brush according to claim 3, **characterized in that** the lateral bodies (2.1, 2.2), once unfolded, are aligned with the central body (1).

5. An improved sweeping brush according to claim 1, **characterized in that** the three brush bodies (1, 2.1, 2.2) include on their lower surface bristles or filaments projecting perpendicularly to enable sweeping.

6. An improved sweeping brush according to claim 1, **characterized in that** the brush bodies (1, 2.1, 2.2) are hollow.

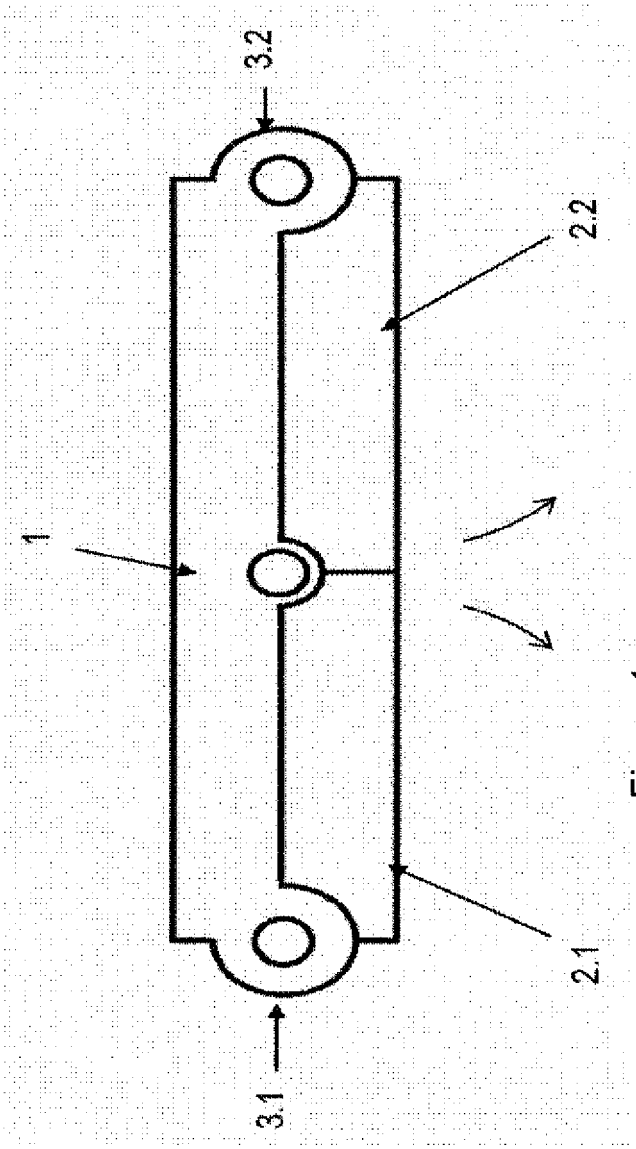

Figure 1

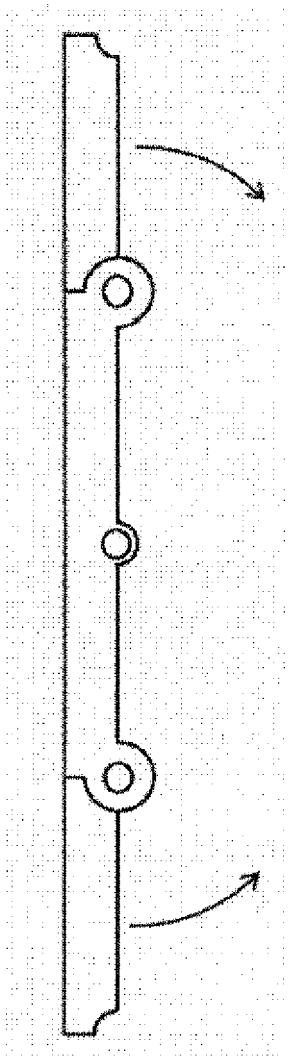

Figure 2

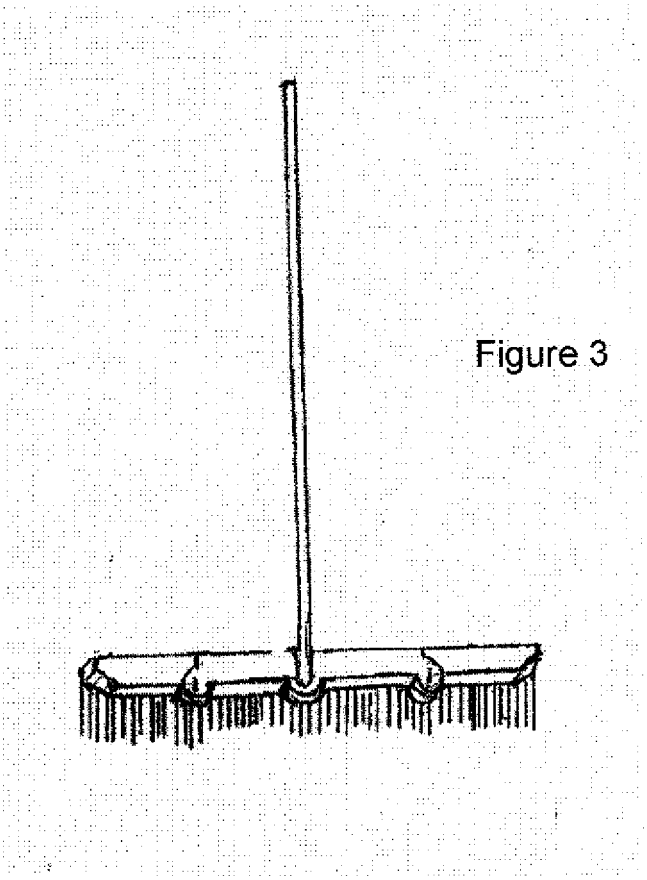

Figure 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2016/070523

A. CLASSIFICATION OF SUBJECT MATTER

A46B7/02 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A46B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES,WPIAP,TCM, TXPE,TXPUS, TXPSP, TXPWOEA, XPESP, XPESP2, NPL,INTERNET

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005044648 A1 (JONES TERRY G ET AL.) 03/03/2005, Abstract, figures 1, 4,5, paragraphs [0005], [0035]-[0038]	1,3-6
Y		2
Y	US 8321988 B1 (RANDALL GREGORY) 04/12/2012, Figures 1-3, columns 3-4.	2
A	EP 0412060 A1 (F I M M DI SPINELLI ING ENRICO) 06/02/1991, Abstract and figures.	1-6
A	AU 2012216522 A1 (EVANS WAYNE) 21/03/2013, Figures and claims.	1-6

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance.
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure use, exhibition, or other means.
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents , such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16/12/2016	**(21/12/2016)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer A. Barrios de la Fuente Telephone No. 91 3496868

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2016/070523

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
US2005044648 A1	03.03.2005	WO2005023074 A2	17.03.2005
		WO2005023074 A3	02.02.2006
		US7178190 B2	20.02.2007
		US2006254011 A1	16.11.2006
		US7350258 B2	01.04.2008
		EP1662959 A2	07.06.2006
		CN2801301Y Y	02.08.2006
		CA2537557 A1	17.03.2005
US8321988 B1	04.12.2012	NONE	
EP0412060 A1	06.02.1991	IT218364Z Z2	05.05.1992
AU2012216522 A1	21.03.2013	AU2012101971 A4	24.11.2016

Form PCT/ISA/210 (patent family annex) (January 2015)