



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
01.01.2014 Bulletin 2014/01

(51) Int Cl.:
A47L 13/142 ^(2006.01) **A47L 13/255** ^(2006.01)
B25G 3/28 ^(2006.01)

(43) Date of publication A2:
05.09.2012 Bulletin 2012/36

(21) Application number: **12157849.6**

(22) Date of filing: **02.03.2012**

(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

(72) Inventors:
• **Pellacini, Roberto**
43010 Parma (IT)
• **Berti, Enzo**
30031 Venice (IT)

(30) Priority: **04.03.2011 US 201113041267**

(74) Representative: **McCartney, Jonathan William**
Haseltine Lake LLP
Redcliff Quay
120 Redcliff Street
Bristol BS1 6HU (GB)

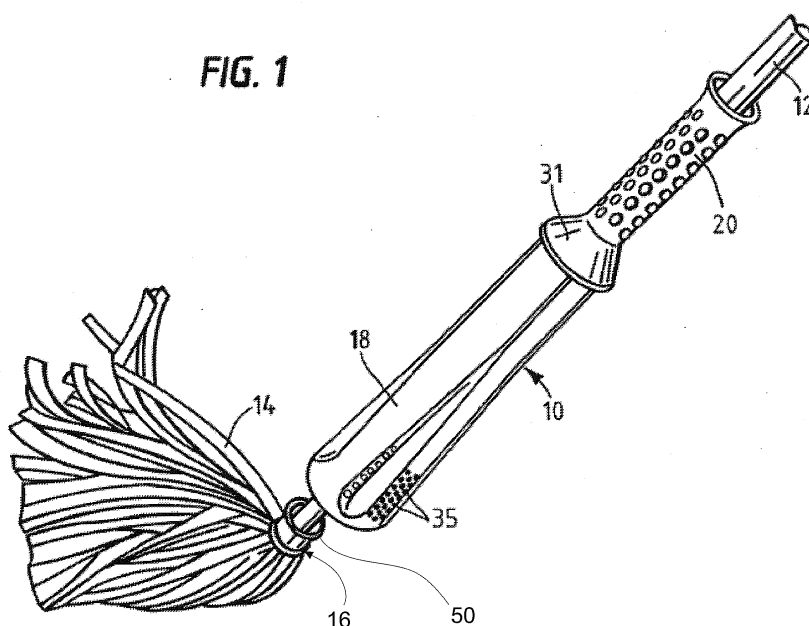
(71) Applicant: **THE LIBMAN COMPANY**
Illinois 61910 (US)

(54) **Cleaning implement**

(57) Novel cleaning implements and novel components of cleaning implements are provided. Aspects relate to novel wringers (18) having convex regions with a plurality of drain exits (35). In some embodiments, concave regions (1634-1640) are also provided. The concave regions (1634-1640) are substantially devoid of any drain exits. An upper portion of the wringer (18) may be

substantially cylindrical or conic-cylindrical and a lower portion may be neither cylindrical nor conic-cylindrical. The bottom perimeter of the bottom may define a square-like shape. Further aspects relate to novel connection assemblies (50). Certain assemblies (50) may have a top portion with a vertical wall that is configured to position mop fibres (14) along a vertical axis.

FIG. 1





EUROPEAN SEARCH REPORT

Application Number
EP 12 15 7849

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	EP 1 180 341 A2 (FREUDENBERG CARL KG [DE]) 20 February 2002 (2002-02-20) * paragraphs [0017] - [0025]; figures 8,13-31 *	1,2,15	INV. A47L13/142 A47L13/255 B25G3/28
A	FR 2 873 053 A1 (LEBORGNE SA [FR]) 20 January 2006 (2006-01-20) * pages 1-3 *	1,2,15	
A	US 4 593 430 A (SPANGLER ANTHONY G [US] ET AL) 10 June 1986 (1986-06-10) * column 1, line 55 - column 2, line 53 *	1,2	
A	US 2009/025163 A1 (SPECHT PAUL B [US] ET AL) 29 January 2009 (2009-01-29) * paragraphs [0003] - [0006] *	1,2,15	
A	NL 2 000 800 C1 (LIN MING-HSIEN [TW]) 10 February 2009 (2009-02-10) * the whole document *	1,2,15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47L B25G
<p>1 The present search report has been drawn up for all claims</p>			
Place of search Munich		Date of completion of the search 23 July 2013	Examiner Martin Gonzalez, G
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	

EPO FORM 1503 03.82 (P04C01)



Application Number

EP 12 15 7849

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

see additional sheet(s)

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 12 15 7849

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 2

Connection assembly between handle and mop head of a
cleaning implement with slidably configured wringer

2. claims: 3-15

Slidable wringer of a cleaning implement comprising said
slidably configured wringer

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

EP 12 15 7849

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.

23-07-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1180341	A2	20-02-2002	AU 751747 B2 29-08-2002
		AU 2484601 A	11-10-2001
		CA 2336517 A1	02-09-2001
		EP 1180341 A2	20-02-2002
		US 6427280 B1	06-08-2002
FR 2873053	A1	20-01-2006	NONE
US 4593430	A	10-06-1986	NONE
US 2009025163	A1	29-01-2009	CA 2638304 A1 26-01-2009
		US 2009025163 A1	29-01-2009
NL 2000800	C1	10-02-2009	NONE

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82