

Title (en)

REMOVABLE ROTATABLE AGITATOR WITH A TAB CONFIGURED TO BE GRIPPED BY A USER

Title (de)

HERAUSNEMBARES DREHBARES REINIGUNGSGORGAN MIT EINER LASCHE ZUM GREIFEN DURCH EINEN BENUTZER

Title (fr)

AGITATEUR ROTATIF AMOVIBLE AVEC UNE LANGUETTE CONÇUE POUR ÊTRE SAISIE PAR UN UTILISATEUR

Publication

EP 4212079 A1 20230719 (EN)

Application

EP 23159789 A 20160128

Priority

- US 201562110232 P 20150130
- US 201514739915 A 20150615
- US 201514744438 A 20150619
- US 201514801185 A 20150716
- US 201514812734 A 20150729
- US 201514867599 A 20150928
- EP 22153318 A 20160128
- EP 16744107 A 20160128
- US 2016015370 W 20160128

Abstract (en)

A surface cleaning head for a vacuum. The surface cleaning head comprises: a cleaning head housing (110, 710) having a front end portion, a rear end portion, laterally disposed sides, an upper portion and a bottom portion; an agitator chamber (120, 720) located in the front end portion (112) of the cleaning head housing, the agitator chamber having a top opening (117) through the upper portion of the cleaning head housing and a bottom opening (119) through the bottom portion of the cleaning head housing, and wherein the agitator chamber includes a nondriven side and a driven side; an agitator drive mechanism (150, 750) including a splined drive member (770) at the driven side of the agitator chamber and an agitator drive motor (752) drivingly coupled to the splined drive member; an external cover (122, 722, 2422, 2522, 2622, 2722, 2822, 2922) configured to be mounted to the cleaning head housing for covering the top opening of the agitator chamber such that the external cover forms a top portion of the agitator chamber, wherein the external cover is completely removable from the cleaning head housing; and a rotatable driven agitator (130, 730) removably mounted within the agitator chamber such that the rotatable agitator contacts a surface through the bottom opening of the agitator chamber, wherein the rotatable agitator is accessible and removable through the top opening of the agitator chamber when the external cover is removed. The rotatable agitator (130, 730) comprises: an agitator body (131, 531, 631, 731); an end cap (790); a splined driven member (780); and at least one agitator element (136, 536).

IPC 8 full level

A47L 9/04 (2006.01); **A47L 5/30** (2006.01)

CPC (source: CN EP KR)

A47L 5/30 (2013.01 - EP KR); **A47L 9/04** (2013.01 - CN); **A47L 9/0411** (2013.01 - EP); **A47L 9/0444** (2013.01 - EP KR); **A47L 9/0455** (2013.01 - EP KR); **A47L 9/0461** (2013.01 - CN); **A47L 9/0477** (2013.01 - EP KR)

Citation (applicant)

US 7329294 B2 20080212 - CONRAD WAYNE ERNEST [CA]

Citation (search report)

- [A] JP H10127542 A 19980519 - HITACHI LTD & JP 2823013 B2 19981111
- [A] EP 2289381 A2 20110302 - TECHTRONIC FLOOR CARE TECH LTD [VG]
- [A] WO 2011158596 A1 20111222 - MITSUBISHI ELECTRIC CORP [JP], et al
- [A] US 5960514 A 19991005 - MILLER DANIEL R [US], et al

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 4008228 A1 20220608; EP 4008228 B1 20230308; AU 2016211450 A1 20170921; AU 2016211450 B2 20200820; CA 2975385 A1 20160804; CA 2975385 C 20210629; CN 109152502 A 20190104; CN 109152502 B 20220225; CN 114504267 A 20220517; CN 114504267 B 20230818; DE 202016009173 U1 20230614; EP 3250102 A1 20171206; EP 3250102 A4 20190213; EP 3250102 B1 20220126; EP 4212079 A1 20230719; ES 2911275 T3 20220518; ES 2943708 T3 20230615; JP 2018503473 A 20180208; JP 2021118911 A 20210812; JP 7248734 B2 20230329; JP 7251919 B2 20230404; KR 102293191 B1 20210825; KR 20170125832 A 20171115

DOCDB simple family (application)

EP 22153318 A 20160128; AU 2016211450 A 20160128; CA 2975385 A 20160128; CN 201680020710 A 20160128; CN 202210050729 A 20160128; DE 202016009173 U 20160128; EP 16744107 A 20160128; EP 23159789 A 20160128; ES 16744107 T 20160128; ES 22153318 T 20160128; JP 2017540638 A 20160128; JP 2021078012 A 20210430; KR 20177024440 A 20160128