

Title (en)
Doctor units for cleaning or coating purposes

Title (de)
Schabervorrichtung und Rakelvorrichtung

Title (fr)
Dispositifs de raclage pour nettoyage ou enduction

Publication
EP 2113608 A2 20091104 (DE)

Application
EP 09154835 A 20090311

Priority
DE 102008001265 A 20080418

Abstract (en)

The scraping device (1) comprises a scraper blade (2) for cooperating with a movable surface (6), a holding device for the scraper blade, a device (5) for generating a contact pressure for pressing the scraper blade on the movable surface, and a device (8) for indirectly detecting one of the pressing force and/or contact pressure of indirectly characterizing parameters over a partial area of the extension of the scraper blade. The detection device has piezoelectric sensors arranged over the length of the scraper blade, which considerably corresponds to the extension of the scraper blade. The scraping device (1) comprises a scraper blade (2) for cooperating with a movable surface (6), a holding device for the scraper blade, a device (5) for generating a contact pressure for pressing the scraper blade on the movable surface, and a device (8) for indirectly detecting one of the pressing force and/or contact pressure of indirectly characterizing parameters over a partial area of the extension of the scraper blade. The detection device comprises piezoelectric sensors arranged over the length of the scraper blade, which considerably corresponds to the extension of the scraper blade in a width direction of the movable surface. The scraper blade comprises two scraper blade sections, which are arranged adjacent to each other over the length of the scraper blade. One of the scraper blade sections has piezoelectric sensor under the formation of a measuring frame. The scraper blade sections have different lengths. The piezoelectric sensors are arranged at one of the scraper blade sections. The piezoelectric sensors arranged over the length of the scraper blade and/or the scraper blade sections are respectively arranged with equal distance (c) from a blade end of the scraper blade acting on the movable surface and are respectively arranged to each other with variable distance (a 1, a 2) viewed in the longitudinal direction of the scraper blade. The piezoelectric sensors are arranged at a blade upper side that is aligned away from a contact area at the movable surface and/or a blade lower side that is turned to the contact area at the movable surface, are arranged within the extension of the contact area at the movable surface, are arranged on the blade upper surface, are arranged in recesses arranged on the blade upper surface, have a circular shape, whose extension is equally dimensioned in two vertical directions to each other, have an elongate shape whose extension is differently dimensioned in two vertical directions to each other, are relatively arranged to each other parallel in relation to its larger extension, and are arranged at an angle (α) of 90[deg] to the longitudinal direction of the scraper blade. An individual support area bearing the piezoelectric sensor at the scraper blade and/or scraper blade sections is uncoupled by the remaining support areas and/or free areas from the sensor. The scraper blade and/or scraper blade sections have open-edged recesses or cuts on both sides of the sensors. The sensors are individually or groupwisely mutually coupled with a data acquisition device and/or an evaluation device. The coupling is carried out as electrical coupling, is wireless, has line connections and are designed as infrared connection or radio communication. The data acquisition device and/or evaluation device are formed by a controller and/or a regulator and a computer. An independent claim is included for a doctor blade device.

Abstract (de)

Die Erfindung betrifft eine Schabervorrichtung (1), umfassend eine Schaberklinge (2) zum Zusammenwirken mit einer bewegbaren Oberfläche (6), eine Halteeinrichtung (3) für die Schaberklinge, eine Einrichtung (5) zur Erzeugung eines Anpressdruckes zur Anpressung der Schaberklinge (2) an die bewegbare Oberfläche (6) und eine Einrichtung (8) zur wenigstens mittelbaren Erfassung einer die Anpresskraft und/oder den Anpressdruck über zumindest einen Teilbereich der Erstreckung der Schaberklinge (2) wenigstens mittelbar charakterisierenden Größe. Die Erfindung betrifft ferner eine Rakelvorrichtung, umfassend eine Klinge zum Vergleichmäßigen eines Mediums auf einer bewegbaren Oberfläche, eine Halteeinrichtung für die Klinge, eine Einrichtung zur Erzeugung eines Druckes zur Positionierung der Klinge gegenüber der bewegbaren Oberfläche und eine Einrichtung zur wenigstens mittelbaren Erfassung einer die Anpresskraft über zumindest einen Teilbereich der Erstreckung der Klinge wenigstens mittelbar beschreibenden Größe. Die Einrichtung (8) zur wenigstens mittelbaren Erfassung einer die Anpresskraft und/oder den Anpressdruck wenigstens mittelbar charakterisierenden Größe umfasst zumindest einen piezoelektrischen Sensor (9, 9.1 bis 9.n, 9.1, 9.21, 9.22, 9.31 bis 9.3n, 9.41, 9.42, 9.5).

IPC 8 full level
D21G 3/00 (2006.01); **D21H 23/34** (2006.01)

CPC (source: EP)
D21G 3/005 (2013.01); **D21H 25/10** (2013.01)

Citation (applicant)
• EP 1259377 B1 20040317 - SIMONETTI ALFRED [CH]
• EP 1244850 B1 20070509 - METSO PAPER INC [FI]
• EP 1584745 B1 20061220 - JOH CLOUTH GMBH & CO KG [DE]

Cited by
CN103194927A; CN107012735A; CN104551875A; WO2012013857A1; WO2010116027A1; WO2012130910A1

Designated contracting state (EPC)
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 SE SI SK TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)
EP 2113608 A2 20091104; EP 2113608 A3 20091209; DE 102008001265 A1 20091022

DOCDB simple family (application)
EP 09154835 A 20090311; DE 102008001265 A 20080418