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

(11) Publication number: **0 476 413 A3**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: **91114781.7**

(51) Int. Cl.5: **E04H 4/16**

(22) Date of filing: **02.09.91**

(30) Priority: **21.09.90 US 586425**

(43) Date of publication of application:
25.03.92 Bulletin 92/13

(84) Designated Contracting States:
DE ES FR GB IT

(88) Date of deferred publication of the search report:
17.06.92 Bulletin 92/25

(71) Applicant: **Rief, Dieter J.**
8016 Mitchell Drive
Rohnert Park, CA 94928(US)

(72) Inventor: **Rief, Dieter J.**
8016 Mitchell Drive
Rohnert Park, CA 94928(US)
Inventor: **Frentzel, Herman E.**
424 Bee Street
Sansalito, CA 94965(US)
Inventor: **Wright, Jerauld G.**
56, The Sparks Street Mall, Suite 100
Ottawa, Ont. K1P 5A9(CA)
Inventor: **Sebor, Paul**
45 Highcliff Way, Northcliff Ext.
Johannesburg 2195(ZA)

(74) Representative: **Körner, Ekkehard, Dipl.-Ing.**
Patentanwalt Maximilianstrasse 58
W-8000 München 22(DE)

(54) **An automatic swimming pool cleaner.**

(57) A suction head (1) for a swimming pool cleaner comprising a housing (2) which is open at its lower side and has inclined bristles (9) attached to its lower edge for supporting on a surface to be cleaned. The housing (2) has a rotary sleeve (4) mounted to its top for connection of a suction hose in turn to be connected to a water suction pump. Said sleeve opens (4) in a chamber (32) within the housing (2) in which a vibratory element (11) is pivotally mounted, said element (11) having a crescent or air-foil shape. By a flow of water sucked through said chamber (32), the vibratory element (11) is automatically brought into a vibrating movement which imparts pulsations on the suction head (1). Thereby, the inclined bristles (9) are bent and straightened repetitively, resulting in a forward thrust moving the suction head over the surface to be cleaned. At least one foot is disposed in the housing (2) which is cyclically displaced vertically by a driving mechanism driven by the movement of the vibratory element (11) and returned by return springs (29). Said foot cyclically lifts off the suction head (1) at one side, resulting in a rotational movement of the suction head (1) about a vertical axis so as to change the direction of forward movement of the suction head.

EP 0 476 413 A3

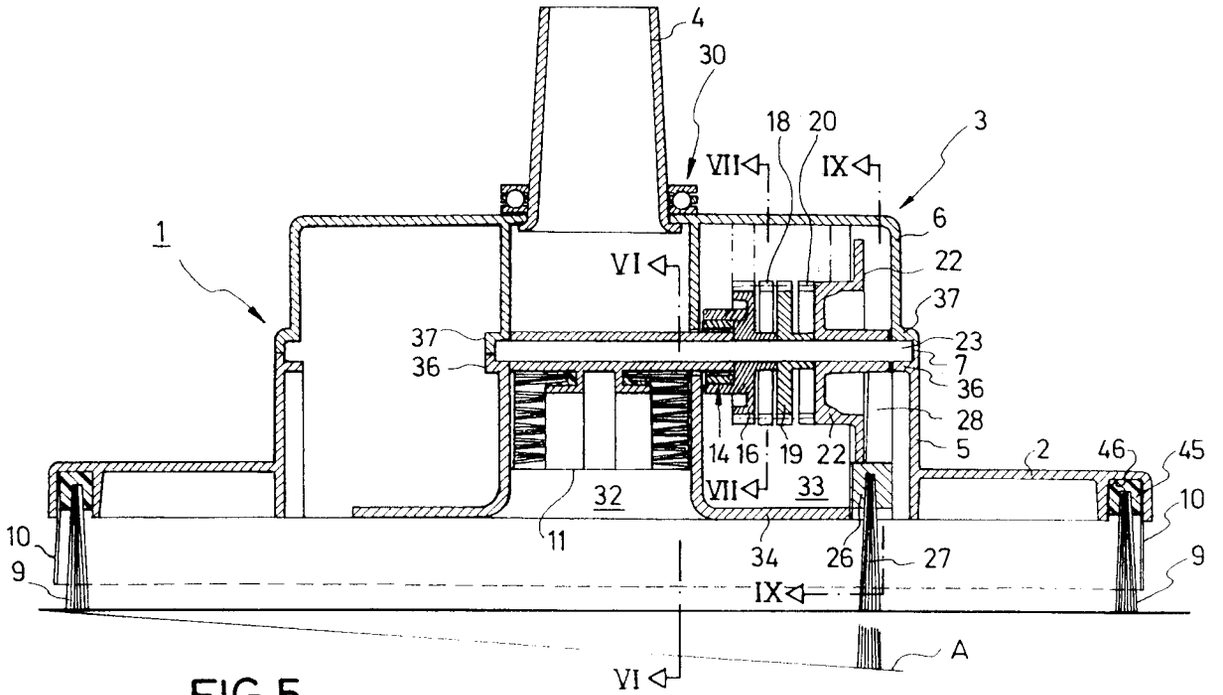
4
30
18
20
3
VII
IX
1
6
VI
22
37
37
23
36
7
36
28
14
16
19
22
5
2
46
45
32
VII
33
10
10
11
34
26
27
9
9
IX
A
VI

FIG.5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 11 4781

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,X	US-A-4 351 077 (H.J. HOFMANN) * Abstract; figure 1 *	1	E 04 H 4/16
D,A	US-A-4 275 474 (R.C. WOODARD) * Abstract; figure 1 *	1	
X	DE-A-2 620 119 (F.L.O.J. CHAUVIER) * Page 7, lines 12-20; figure 5; claims 1,15,17,23 *	1,12,13,19	
Y		2,5,15,18,22	
Y	DE-A-3 320 922 (PEACOCK IVESTMENTS (PROPRIETARY) LTD) * Claims 1-3,5; figures 1,4 *	2,5,15,18,22	
A		12,13,17,19	
A	FR-A-2 520 422 (SA TUBSUD AUTOMATION) * Claims 1,2; figure 1 *	1-3,8,9,11-13,15,19-21	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	FR-A-2 584 442 (F. PUECH) * Claims 1,2,5-8; figures 6-8 *	2	E 04 H 4/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16-03-1992	HENKES R.H.A.

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 (P0401)