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(71) Applicant (for all designated States except US): **ECOLAB INC.** [US/US]; Ecolab Center, 370 N. Wabasha Street, St. Paul, US 55102 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MEHUS, Richard** [US/US]; 6332 2nd Avenue South, Richfield, MN 55423 (US). **BATCHER, Thomas, J.** [US/US]; 1948 Crown

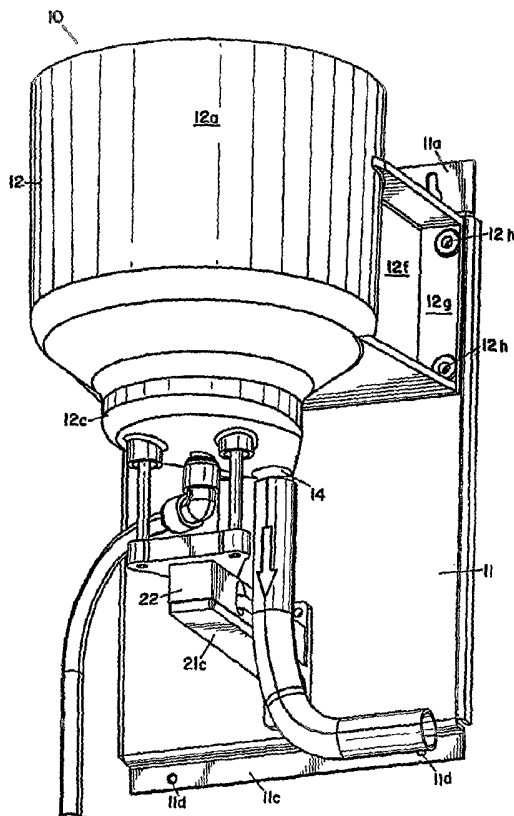
Point Drive, Mendota Heights, MN 55118 (US). **MC-CARRICK, Henry, J.** [US/US]; 40243 Rolling Hills Road, Valley Center, CA 92089 (US). **JOHNSON, Royce, D.** [US/US]; 2714 East 86th Street, Inver Grove Heights, MN 55076 (US).

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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR MASS BASED DISPENSING



(57) Abstract: A method and apparatus for dispensing of a product based on weight as a load cell (22) which supports a structure holding the product (20a) to be dispensed. The weight of the product (20a) that is dispensed is determined by use of a controller (23). A dispenser (200) dispenses an amount of concentrate using a diluent to form a use solution. The dispenser (200) includes a housing (201) having a cavity. A product holder (210) is positioned to support the concentrate in the cavity of the housing (201). A load cell housing (207) is operatively supported by the housing (201). More than one load cell (240) is positioned in the load cell housing (207). The product holder (210) is supported on the more than one load cell (240), wherein weight of the concentrate is determined. A dispenser (200) dispenses an amount of concentrate in a container (204) using a diluent to form a use solution. A dispenser includes a housing (201). A product holder (210) is positioned to support the container (204) with the concentrate in the cavity of the housing (201). The product holder (210) carried by a scale (240), wherein weight of the concentrate is concerned. A moveable container holder (215) is moveable between a first position and a second position. The container holder is positioned between the housing (201) and the container (204). A cover (216) is operatively connected to the container holder (215) at a connection. A cam surface is adjacent the housing (201). The cover (216) has a cam (216d) for contacting the cam surface (201a), wherein when the cover (216) is moved from a closed position to an open position, the connection moves upward, thereby carrying the container holder (215) and the container (204) which are moved upward lifting the container (204) off of the product holder (210).



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/014667

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01F1/00 B01F15/04 B01F15/00 G05D11/13

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)

IPC 7 B01F G05D A47L D06F C02F A01C A47K

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 100 39 408 A (AWECO APPLIANCE SYS GMBH & CO) 20 December 2001 (2001-12-20)	1-4,10, 11,18, 19, 21-24,42
A	paragraph [0023] - paragraph [0025] figure	5-9, 12-17, 20, 25-34, 41,44-47
X	----- US 5 885 446 A (MCGREW JR HENRY E) 23 March 1999 (1999-03-23) column 5, line 40 - line 65 column 6, line 14 - line 28 figures	1,21
A	----- -/-	2-20, 22-34, 41-47



Further documents are listed in the continuation of box C.



Patent family members are listed in 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 such 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

22 October 2004

Date of mailing of the international search report

16. 02. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Real Cabrera, R

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/014667

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 826 661 A (VAN DIJK DECEASED LAMBERTUS P ET AL) 2 May 1989 (1989-05-02) cited in the application the whole document	1-34, 41-47
A	----- US 2003/043688 A1 (WALTER BERT ET AL) 6 March 2003 (2003-03-06) the whole document -----	1-34, 41-47

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/014667

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-34, 41-47

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ US2004/ 014667

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-34,41-47

Apparatus and method for controlling the ratio of solvent
and concentrate in a solution

2. claims: 35-40

Design of a load cell

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/014667

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