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(54) **Dishwashing apparatus including a flip-top solid detergent dispenser.**

(57) A dishwashing apparatus (1) designed in such a manner as to have one incoming waterline (79). Solid additive sources, including rinse aid (24) and detergent, are situated in containers mounted on top of the dishwashing apparatus (1), thus saving space. Said additive sources are sprayed with water and fed through product nozzles by means of a pump (15) in order to form additive solutions. Said dishwashing apparatus (1) saves rinse water containing rinse aid and chlorine sanitizer at the end of a complete cycle and reuses it during the beginning of the second complete cycle thus saving on hot water, rinse aid and sanitizer.

A flip-top detergent dispenser (30) comprising a base means (31) having a funnel-shaped interior, a nozzle (22) positioned within the interior of said base means, and a detergent container support means (32) connected by a hinge means (33) to said base means (31). Said detergent container support means (32) is designed to hold only a particular shaped detergent container (23), thus helping to insure that only suitable detergent products are used in the warewashing apparatus. The flip-top detergent dispenser (30), mounted on top of the dishwashing apparatus (1), is designed so that the detergent container (23) can be inserted into and removed from the detergent holder support means (32) only in

an upright position to prevent dripping of detergent solution onto the user.

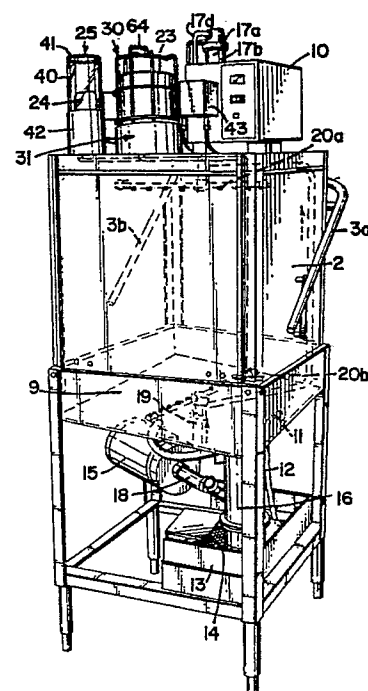


FIG.1

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EUROPEAN SEARCH REPORT

Application number

EP 88 10 6459

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.4)
X	US-A-2 296 055 (RAY) * The whole document * --	1, 2	A 47 L 15/23 A 47 L 15/44
Y	US-A-2 718 481 (TUTHILL) * The whole document * --	1	
A		4	
Y	US-A-2 288 791 (CULLITON) * The whole document * --	1	
A	US-A-2 747 588 (BONNER) * The whole document * --	1, 4	TECHNICAL FIELDS SEARCHED (Int. Cl.4) A 47 L D 06 F
A	US-A-2 038 260 (ASH) * Page 2, left-hand column, lines 1-8; figure 1 * --	1, 5	
A	US-A-2 738 323 (TEPAS Jr.) * Column 3, lines 29-32; figure 1 * -- ./.	1	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12-07-1991	Examiner SCHARTZ/KELLNER
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			



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

X LACK OF UNITY OF INVENTION

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

1. Claims 1-5: Dishwasher with improved water access means and disposition of a solid additive container.
2. Claims 6-13: Dispenser apparatus; constructional details.

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



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. 4)
A	US-A-2 820 701 (LESLIE) * Figure 1 * --	1	
A	US-A-4 218 264 (FEDERIGHI) * The whole document * --	1, 4	
A	US-A-3 903 909 (NOREN et al.) * The whole document * --	1, 4	
A	US-A-4 187 122 (QUERY) --		
D, A	US-A-4 020 865 (MOFFAT et al.) --		
X	US-A-3 595 438 (L.R. DALEY et al.) * The whole document * --	6, 8	
A	US-A-4 569 781 (P.J. FERNHOLZ et al.) * Column 9, line 32 - column 16, line 16; figures 1-9 * -- ./.	6, 8	
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			



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. 4)
A	US-A-4 462 511 (F.J. FULMER et al.) * Abstract; figure 3 * -----	6	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
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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			