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(71) Applicant: **Ando, Iwao**
Hachioji-Shi, Tokyo (JP)

(72) Inventor: **Ando, Iwao**
Hachioji-Shi, Tokyo (JP)

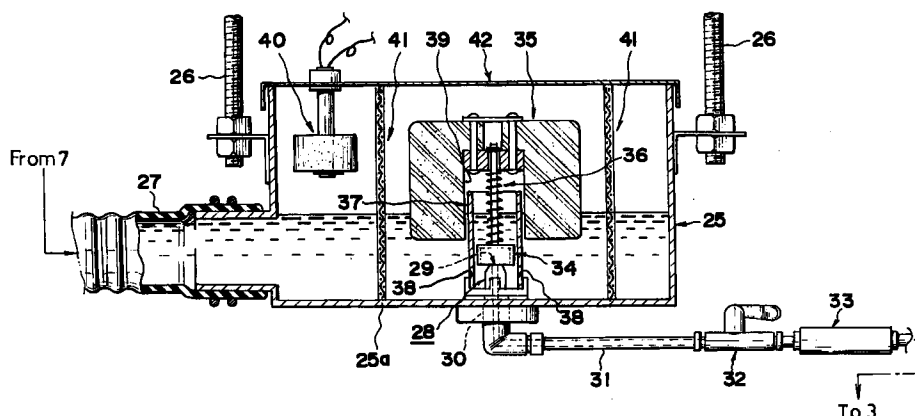
(74) Representative: **Hague, Alison Jane**
Frank B. Dehn & Co.,
European Patent Attorneys,
179 Queen Victoria Street
London EC4V 4EL (GB)

(54) **Automatic draining apparatus and automatic draining system using the same**

(57) An automatic draining apparatus comprises a float (35) which is floating on the liquid surface in a receiving tank (25) receiving liquid from a liquid source (7), a suction nozzle (28) having a liquid inlet port (29) located in liquid in said receiving tank (25) and connected to a vacuum tank (3) evacuated so as to keep the inside thereof at a specified degree of vacuum, a liquid inlet port open-to-close valve (34) being attracted toward said liquid inlet port (29) according to downward movement of said float (35) by a lowering of the liquid level in said receiving tank (25), and guide means (37, 47, 51 and 57) which regulate the path of movement of

said liquid inlet port open-to-close valve (34) so that said liquid inlet port (29) is opened or closed according to upward and downward movement of said float 35. In an alternative apparatus, liquid is evacuated from a tank (63) under the pressure of air being introduced into the tank (63) from an air supply source (70), and electrical or electromagnetic valves (65, 66, 72, 74, 91) controlling the communication of the tank (63) with a liquid source (7), air supply source (70), drain outlet passage (67) and vent (73) are controlled according to the level of liquid in the tank detected by level detecting means (66).

FIG. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 3128

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.6)
A	US-A-5 271 237 (POPELKA ET AL) * column 5, line 21 - column 6, line 2; figures 1-5 *	1-8,23	F24F13/22 F25D21/14 F16T1/00
A	US-A-5 293 894 (FLEISCHMANN) * column 5, line 57 - column 6, line 49; figures 2-5 *	2-8	
A	US-A-4 633 673 (MORRISON ET AL) * abstract; figure 1 *	1,23	
A	US-A-5 085 244 (FUNK) * the whole document *	1,23	
X	US-A-5 042 518 (SINGHE) * column 2, line 5 - line 11 *	9-16,21	
Y	* column 4, line 60 - column 5, line 43; figure 1 *	17,19, 20,22	
Y	GB-A-2 255 163 (KABUKISHI KAISHA TOSHIBA) * abstract; figures 1,2 *	17,19, 20,22	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	PATENT ABSTRACTS OF JAPAN vol. 7, no. 283 (M-263) [1428] , 16 December 1983 & JP-A-58 158435 (MATSUSHITA DENKI SANGYO K.K.), 20 September 1983, * abstract *	9,18	F25D F24F F16T
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 1 October 1996	Examiner DE SENA, A
<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>			

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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:

See sheet B

- ☒ 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 respects 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



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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 1-8,23 : Automatic draining with vacuum tank.
- 2-Claims 9-22 : Automatic draining with positive pressure tank.