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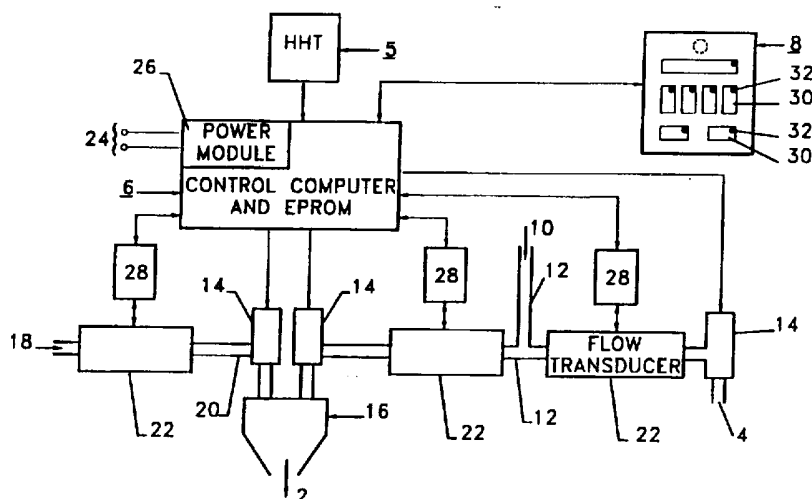
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: IMPROVEMENTS IN OR RELATING TO THE DISPENSING OF FLUIDS



(57) Abstract

A system for dispensing mixed beverages has a processor (6) to control the liquid dispensed at an outlet (2) in dependence upon the demand of a user as input to a keypad (8). Carbonated water is fed to the outlet (2) by way of tubing (12) and a syrup concentrate is also fed thereto by way of a tubing (20). The water and syrup is mixed in the correct quantities by way of respective proportional valves (14) which adjust the quantity or flow rate of the two constituents fed through a mixing chamber (16) in accordance with flow rate readings provided to the processor (6) by respective flow transducers (22). The flow transducers (22) measure the speed of flow ultrasonically and are able to provide flow rate readings at a rate of 50 per second. The proportional valves (14) are able to adjust the quantities fed to the mixing chamber (16) at a similar rate such that the mix can be reliably determined even if there are transitory pressure drops or viscosity changes in the system.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 93/01579

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC: Int.C1.5 B 06 B 1/06		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.C1.5	B 06 B	H 04 R
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	US,A,3365593 (ROOF ET AL) 23 January 1968 see column 1, line 68 - column 2, line 22; figure 1 ---	1
A	IEEE TRANSACTIONS ON ULTRASONICS, FERROELECTRICS AND FREQUENCY CONTROL vol. 35, no. 2, March 1988, NEW YORK US pages 175 - 184 LEWIN ET AL 'Wide-band piezoelectric polymer acoustic sources' see page 179, column 1, line 3 - page 179, column 2, line 22; figure 9 ---	1
A	US,A,4577132 (OHIGASHI ET AL) 18 March 1986 see column 15, line 21 - column 15, line 33 -----	1
¹⁰ 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 "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		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
14-12-1993	04. 03. 94	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	ANDERSON, A	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB93/01579

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

1. Claims 1-7,18
2. Claims 8-12,19
3. Claims 13-15,20
4. Claims 16,17,21

For further information please see form PCT/ISA/206 mailed 04.01.94.

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 claim#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.:

1-7,18

Remark on Protest

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

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9301579

SA 77532

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 21/02/94. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A- 3365593		None	
US-A- 4577132	18-03-86	None	