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[Continued on next page]

(54) Title: HOT/COLD BEVERAGE DISPENSER AND METHOD

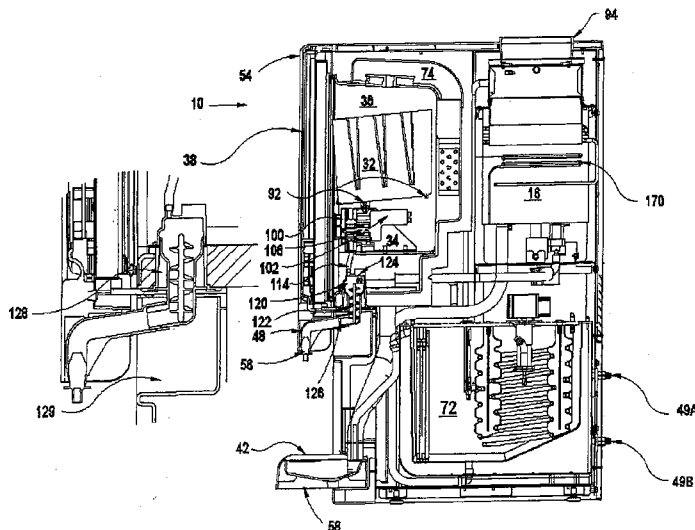


Fig. 2

(57) Abstract: A beverage dispenser for dispensing either a hot or cold beverage, for example tea, from a common mixing chamber and a method for making and/or operating the same is disclosed. The dispenser has a source of hot water, usually a heater, and a source of water, a refrigeration system to cool the water and one or more sources of flavor. The hot or cold water, or both can be provided to the common or same, mixing chamber and mixed assisted with a static and/or dynamic mixer and then dispensed. The last portion of the water is used to rinse for the next beverage. Flavor or syrup pump current is sensed to provide the appropriate amount of flavor concentrate to a known quantity of water to form a beverage of appropriate strength or syrup.

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SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
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**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US 12/30457

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(8) - A23F 3/00 (2012.01)  
 USPC - 426/232; 222/129.4; 426/519; 426/593  
 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)  
 USPC: 426/232; 222/129.4; 426/519; 426/593

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 USPC: 426/232; 222/129.4; 426/519; 426/593

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 PubWest (USPT,PGPB,EPAB,JPAB); GooglePatent; GoogleScholar; Search terms: dispenser beverage flavor mixer static dynamic mixer flavors water (flush OR clean)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2008/0206429 A1 (GUERRERO et al.); 28 August 2008 (28.08.2008); Fig. 1-3; para. [0046], [0050]-[0053], [0058], [0062], [0063], [0079].	1-11, 22, 44-47, 49-61, 94-95
Y	US 6,554,165 B2 (COTE); 29 April 2003 (29.04.2003); entire document, especially col. 1, ln. 10-30; col. 5, ln. 20-40; col. 7, ln. 43-57.	1-11, 22, 44-47, 49-61, 94-95
Y	US 2007/0205220 A1 (RUDICK et al.); 06 September 2007 (06.09.2007); para. [0034], [0042], [0049].	2,44,51,52,94,95
Y	US 7,151,892 B2 (LI et al.); 19 December 2006 (19.12.2006); col. 1, ln. 32-46; col. 3, ln. 27-67.	8, 58, 95
Y	US 5,072,853 A (SHANNON); 17 December 1991 (17.12.1991); col. 1, ln. 15-24; col. 4, ln. 1-25.	11,22,45-47,61,95
Y	US 5,483,989 A (LIM); 16 January 1996 (16.01.1996); col. 2, ln. 31-39, col. 4, ln. 33-44	5,45-47,55
Y	US 5,312,017 A (SCHROEDER et al.); 17 May 1994 (17.05.1994); col. 1, ln. 21-35; col. 3, ln. 20-47.	45-47,95
Y	US 2006/0000363 A1 (STREETER et al.); 05 January 2006 (05.01.2006); para. [0035], [0038].	45-47,95
A	US 2009/0107342 A1 (PISCAER et al.); 30 April 2009 (30.04.2009); Fig. 1; para. [0028].	1-11, 22, 44-47, 49-61, 94-95

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search 24 August 2012 (24.08.2012)	Date of mailing of the international search report <b>07 SEP 2012</b>
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: <b>Lee W. Young</b>  PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US 12/30457

**Box No. 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 No. 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:

The following claim groups were found:

Group I: Claims 1-11, 22, 44-47, 49-61, 94, 95

Group II: Claims 12-21, 62-72

Group III: Claims 23-35, 73-85

Group IV: Claims 36-43, 48, 86-93, 96, 97

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

---see additional box---

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 additional fees, this Authority did not invite payment of additional fees.
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.:  
1-11, 22, 44-47, 49-61 and 94-95

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 12/30457

---Continued from Box III---

Group I: is drawn to a beverage dispenser for dispensing hot and cold beverages, common mixing chamber, a source of cold water, a non pressurized source of hot water, a source of flavor, means for said sources of flavor, hot and/or cold water for selectively supplying the same to the common mixing chamber, said common mixing chamber containing a mixer for mixing the selected hot water and/or cold water with said flavor to form a batch of beverage, and means for discharging the mixed batch of beverage from the dispenser.

Group II: is drawn to a beverage dispenser for dispensing a beverage, a common mixing chamber, a source of water, a source of flavor, means for said sources of water and flavor for selectively supplying the same to the common mixing chamber, said common mixing chamber containing a mixer for mixing the selected water with said flavor to form a batch of beverage.

Group III: is drawn to a beverage dispenser for dispensing a beverage, a mixing chamber, a source of water, a source of flavor, means for said sources of flavor and water for supplying the same to the mixing chamber to form a batch of beverage, said dispenser having a pump for delivering said flavor to said mixing chamber, said pump being driven by a gear box, said gear box being driven by a pump electric motor, means for measuring electric current of said pump electric motor, the flow rate of delivery of said flavor being approximately proportional to said electric current, and means for discharging the mixed batch of beverage from the dispenser at a desired Brix.

Group IV: is drawn to a beverage dispenser for dispensing a beverage, a mixing chamber, a source of water, a source of flavor, means for supplying flavor from said sources of flavor and a known quantity of water from said source of water to the mixing chamber for forming said beverage, means for delivering flavor at a constant rate to said known quantity of water as said water flows into said mixing chamber and in an amount to give a beverage of a desired Brix, and means for discharging the mixed beverage from the mixing chamber and dispenser.

The inventions listed in the above-mentioned groups do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups I-IV lack unity of invention, because even though the inventions of these groups require the technical features of a common mixing chamber, a source of water, a source of flavor, means for said sources of flavor and water for selectively supplying the same to the common mixing chamber, these technical features are not special technical features as they do not make a contribution over the prior art in view of US 7,789,273 B2 to Kadyk et al. (hereinafter Kadyk) (07 September 2010), which discloses a common mixing chamber (col 3, ln 39-40), a source of water (col 3, ln 37-38), a source of flavor (col 3, ln 36-37), means for said sources of flavor and water for selectively supplying the same to the common mixing chamber (col 3, ln 36-46).

Groups I, III, and IV lack unity of invention, because even though the inventions of these groups require the technical feature of means for discharging the mixed batch of beverage from the dispenser, this technical feature is not a special technical feature as it does not make a contribution over the prior art in view of Kadyk, which discloses means for discharging the mixed batch of beverage from the dispenser (col 5, ln 15-18).

Groups III and IV lack unity of invention, because even though the inventions of these groups require the technical feature of a beverage at a desired brix, this technical feature is not a special technical feature as it does not make a contribution over the prior art in view of Kadyk, which discloses a beverage at a desired brix (col 5, ln 37-56; col 6, ln 20-31).

Groups I and II lack unity of invention, because even though the inventions of these groups require the technical feature of a common mixing chamber containing a mixer for mixing the selected water with said flavor to form a batch of beverage, this technical feature is not a special technical feature as it does not make a contribution over the prior art in view of US 2008/0206429 A1 to Guerrero et al., (hereinafter 'Guerrero') (28 August 2008) (which discloses a common mixing chamber containing a mixer for mixing the selected water with said flavor to form a batch of beverage (para [0036], [0054] whipping chamber). It would have been obvious to one of skill in the art to use the mixer, as disclosed by Guerrero, in a beverage mixer and dispenser, as disclosed by Kadyk, to optimize the properties of the beverage, such as further mixing or frothing of the beverage.

Groups I-IV therefore lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.