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(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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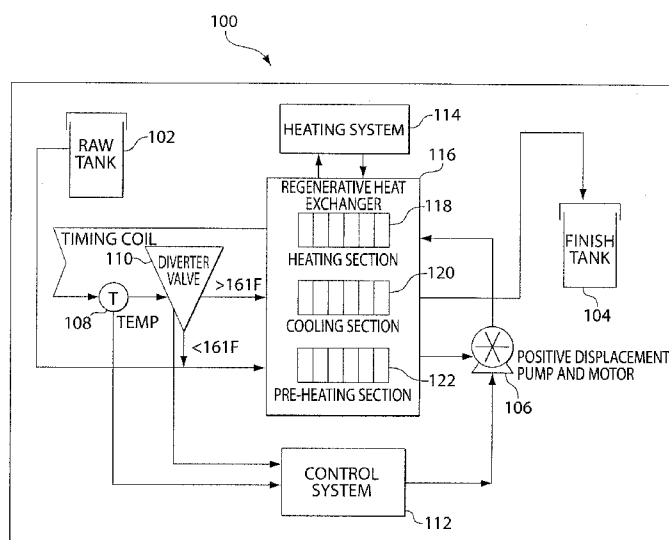
(54) **Title:** SYSTEM AND METHOD FOR PASTEURIZING MILK

Fig. 1

(57) **Abstract:** Systems and methods are provided for pasteurizing milk or other fluids, and for cleaning and disinfecting processing passageways prior to and after the milk processing. The disclosed pasteurization systems and methods have very low impact on the characteristics of raw, unpasteurized milk (e.g., texture, flavor, and/or nutritional value). For example, some systems and methods utilize a pump that operates at a very low flow rate (e.g., about 1 gallon per minute (GPM)) to prevent mechanical adulteration of the raw milk. Disclosed systems and methods for cleaning and disinfecting the fluid passageways also utilize a low-flow rate, and can use the same low flow pump that is utilized during pasteurization. A pressure pulser allows pressure to build up within the fluid passageways despite the low flow, and then releases the pressure to purge air from the passageways and to cause their interior surfaces to contact the cleaning fluid.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/052119**A. CLASSIFICATION OF SUBJECT MATTER*****A23C 3/02(2006.01)i, A23C 7/02(2006.01)i***

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)

A23C 3/02; A23C 3/00; A23C 3/033; A23L 3/16; A23L 3/00; A01N 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: milk, pasteurizing, flow rate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 06136362 A (ROGER J. ASHTON) 24 October 2000 - See figures 1-2; column 5 line 30-column 8 line 29. | 1-25 |
| A | US 05503064 A (FREDRICK S. SCHEEL, et al.) 02 April 1996 - See claim 1; figure 1; columns 5-7. | 1-25 |
| A | JP 1996-322463 A (SUETSUGU KOSAN KK) 10 December 1996 - See claims 1-2; figures 1-3; paragraphs [0026]-[0029], [0036]-[0040], [0042], [0045]-[0046]. | 1-25 |
| A | US 05846583 A (THOMAS F. GENTNER) 08 December 1998 - See claims 1,5,9,10; figure 1; columns 3-4. | 1-25 |
| A | US 2005-0019239 A1 (JOHN G.BOWEN) 27 January 2005 - See claim 12-16; figure 1; paragraphs [0029]-[0030]. | 1-25 |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Information on patent family members

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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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