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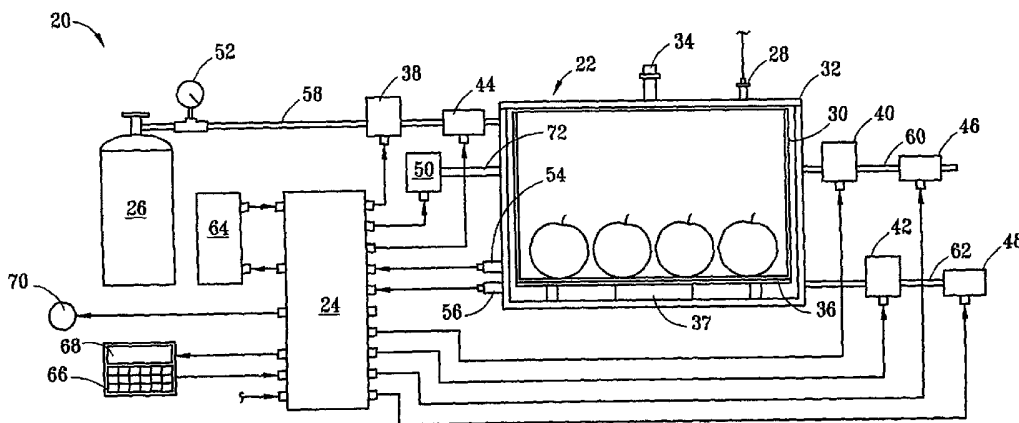
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(54) Title: CARBONATION SYSTEM FOR ENHANCING THE FLAVOR OF FRUITS AND VEGETABLES



(57) Abstract: A carbonation system (20) is disclosed that effectively controls the treatment of fruits and vegetables with CO₂ gas, providing enhanced flavor to fruits and vegetables. One embodiment of the invention uses a microprocessor (24) to preferably monitor and control the pressure, temperature and gas flow within a sealable enclosure (22) to effectively control the carbonation of fruits and vegetables. Another embodiment consists of a combination carbonation system and cooler (74) that effectively controls the carbonation of fruits and vegetables by including pressure relief devices (80) and an insulation cover (98). The insulation cover (98) has apertures (100) that provide for the distribution of CO₂. A third embodiment is disclosed that also consists of a combination carbonation system and cooler (104). This third embodiment controls carbonation by including, among other features, feedback mechanisms (156) and a pressure relief device (122). A method of using the first embodiment is also provided.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER												
IPC(7) : A23B 7/148 US CL : 426/231-232, 312, 320,327, 333, 335, 418, 419, 486, 524; 99/467-468, 472-474 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) U.S. : 426/231-232, 312, 320,327, 333, 335, 418, 419, 486, 524; 99/467-468, 472-474												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
A	US 5,968,573 A (KAUFMAN) 19 October 1999 (19.10.1999), see whole document.	1-89										
A	US 4,352,827 A (FLEMING et al) 05 October 1982 (05.10.1982), see whole document.	1-89										
A	US 5,277,922 A (REJIMBAL Jr et al) 11 January 1994 (11.01.1994), see whole document.	1-89										
A	US 5,156,009 A (WOODRUFF) 20 October 1992 (20.10.1992), see whole document.	1-89										
A	US 4,843,956 A (LASHLEE) 04 July 1989 (04.07.1989), see whole document.	1-89										
A	US 4,627,336 A (NAM) 09 December 1986 (09.12.1986), see whole document.	1-89										
A	US 4,055,931 A (MYERS) 01 November 1977 (01.11.1977), see whole document.	1-89										
A	US 1,483,064 A (REICH) 27 September 1949 (27.09.1949), see whole document.	1-89										
A	US 2,001,628 A (NIERNICK) 14 May 1935 (14.05.1935), see whole document.	1-89										
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.												
* Special categories of cited documents: <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
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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. (703) 305-3230		Authorized officer Drew E Becker Telephone No. 571-272-0987 <i>Jean Proctor</i> Paralegal Specialist										

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 609,590 A (CRUZ) 23 August 1898 (23.08.1898), see whole document.	1-89

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

EAST & WEST

search terms: carbon dioxide, CO2, fruit, vegetable, monitor, pressure, carbonation