



US005882717A

# United States Patent [19]

[11] Patent Number: **5,882,717**

Panesar et al.

[45] Date of Patent: **Mar. 16, 1999**

[54] SOLUBLE ESPRESSO COFFEE

### OTHER PUBLICATIONS

[75] Inventors: **Satwinder Singh Panesar**, Banbury, United Kingdom; **Evan Joel Turek**, Brewster, N.Y.; **William Artur Jeffs**, Horton Nr Banbury, United Kingdom

E.J. Crosby and R.W. Weyl, Foam Spray Drying: General Principles, AICHhE Symposium Series, No. 163, vol. 73, 1977 pp. 82-94.

[73] Assignee: **Kraft Foods, Inc.**, Northfield, Ill.

*Primary Examiner*—Marian C. Knode  
*Assistant Examiner*—Datquan Lee  
*Attorney, Agent, or Firm*—Thomas A. Marcoux; Thomas R. Savoie

[21] Appl. No.: **739,767**

[22] Filed: **Oct. 30, 1996**

### [57] ABSTRACT

[51] **Int. Cl.<sup>6</sup>** ..... **A23F 5/00**; A23B 11/03; A23B 4/044

The present invention is directed to a process for making a soluble espresso coffee powder with improved in-cup foam comprising the steps of:

[52] **U.S. Cl.** ..... **426/595**; 426/594; 426/456; 426/443; 426/470; 426/471

- (1) foaming the coffee extract by gas injection;
- (2) homogenizing the foamed extract of step(1) to reduce gas bubble size to five microns or less; and
- (3) spray drying the homogenized extract of step (2) under drier outlet temperature and spray pressure conditions effective to produce a soluble espresso coffee powder wherein a majority of void space in the soluble espresso powder is comprised of gas bubbles having a size of 10 microns or less.

[58] **Field of Search** ..... 426/594, 650, 426/651, 448, 388, 432, 433, 434, 474, 475, 476, 595, 456, 443, 470, 471

### [56] References Cited

#### U.S. PATENT DOCUMENTS

3,620,756	11/1971	Strobel et al.	99/71
3,749,378	7/1973	Rhodes	99/71
4,618,500	10/1986	Forquer	426/433
4,830,869	5/1989	Wimmers et al.	426/595
4,903,585	2/1990	Wimmers et al.	99/275
5,079,026	1/1992	Arora et al.	426/594

#### FOREIGN PATENT DOCUMENTS

670794	9/1963	Canada	.
--------	--------	--------	---

The resulting soluble espresso coffee powder, upon reconstitution with hot water, produces a foam which simulates the foam formed on espresso made from roasted and ground espresso coffee.

**28 Claims, 13 Drawing Sheets**