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Stipp et al.

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[54] **LOW DENSITY SOLUBLE COFFEE PRODUCTS HAVING INCREASED PARTICLE STRENGTH AND RAPID HOT WATER SOLUBILITY**

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[21] Appl. No.: **605,603**

Micromeritics; PoreSizer 9320; Operator's Manual; Part No. 932-42801-01; Sep. 1, 1989.

[22] Filed: **Feb. 22, 1996**

Lowell et al.; Interpretation of mercury porosimetry data; *Power Surface Area and Porosity*; 1979; pp. 87-96, 97-120, 205-216, 217-224.

[51] **Int. Cl.⁶** **A23F 5/00**

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[52] **U.S. Cl.** **426/594; 426/650**

Jenike et al.; *Compressibility Tester*; Operating Instructions; *Storage and Flow of Solids*; Dec. 1981; pp. 1-5.

[58] **Field of Search** **426/594, 650**

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[57] **ABSTRACT**

Soluble coffee products having a chunkier physical appearance more like that of granular roast and ground coffee products, lower apparent (bulk) densities compared to prior agglomerated spray dried instant coffee products and better solubility than prior freeze dried instant coffee products when added directly to hot water. These soluble coffee products are made by forming a relatively thin glassy coffee strip or sheet from a thermoplastic melt of soluble coffee solids, water, coffee aroma and flavor volatiles and optionally solubility enhancing components and then gradually applying vacuum conditions to this glassy strip or sheet over several cycles while heated to a pliable and deformable state such that the strip/sheet expands in a controlled manner from about 2 to about 10 times its initial thickness to provide a porous open-celled coffee matrix where the pores have a median pore size typically in the range of from about 3 to about 25 microns. This porous coffee matrix is then dried and granulated to provide a soluble coffee product that can be easily measured out by consumers to provide differing brew strengths and can be used across a range of consumer preparation practices.

11 Claims, No Drawings