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Hsu

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[54] **APPARATUS FOR TREATING GROUND ROASTED COFFEE**

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Related U.S. Application Data

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[51] **Int. Cl.⁶** **A23F 5/26**

[52] **U.S. Cl.** **99/536; 99/484; 99/516; 366/156.2; 366/293; 366/303**

[58] **Field of Search** **99/289 R, 300, 99/484, 516, 534, 536; 426/432, 434, 506, 507; 366/156, 293-296, 303, 318, 325**

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[57] **ABSTRACT**

A method and apparatus for the continuous countercurrent

treatment of roast and ground coffee particles in which a bed of the coffee particles is suspended in an aqueous liquid and the suspended bed is agitated in a manner which facilitates removal of evolved coffee gases from the bed to thereby effect complete, uniform wetting and/or extraction of the coffee grounds. The apparatus comprises a tank in which water flows upward from the bottom and is removed from the top of the tank, with fresh coffee grounds being fed onto the liquid at the top of the tank. Two pairs of interleaved blade assemblies are mounted in the tank for relatively counter rotation to submerge coffee particles into the aqueous liquid and form a bed of suspended coffee particles. A submerging auger, mounted on a central shaft in the tank, facilitates submerging the coffee grounds in the liquid. Both pairs of blade assemblies, which are arranged one above the other, have a set of downwardly extending blade members and an opposed set of upwardly extending blade members interleaved with the downwardly extending blades. One of the sets of blade members in each pair is stationary and the other set of blade members is mounted for rotation on the central shaft. Rotation of the rotatable set of blade members through the suspended bed removes evolved coffee gases from the surface of the coffee particles and creates dynamic vertical channels in the suspended bed of coffee particles permitting the escape of evolved coffee gases and providing paths for wetted coffee particles to settle through the suspended bed. A screw conveyor is mounted on the side of the tank at the base of the suspended bed at a desired to remove grounds from the base of the suspended bed and thereby control the height of the bed in the tank. Coffee grounds which settle to the bottom of the tank are removed by suitable means. The operation of the tank may be controlled to fully and uniformly wet coffee particles which are recovered for use in a coffee extraction operation, or to also extract soluble solids from the coffee particles in the tank.

7 Claims, 2 Drawing Sheets

