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United States Patent [19]

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Lang

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[54] **EXTRACTION METHOD**

2056082	5/1971	Germany .
644483	10/1950	United Kingdom .
914473	1/1963	United Kingdom .
83/02570	8/1983	WIPO .

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[22] Filed: **Jun. 5, 1995**

[57] **ABSTRACT**

Related U.S. Application Data

A process for extraction of a soluble component from a dried food material, which process includes:

[63] Continuation-in-part of Ser. No. 185,794, filed as PCT/AU92/00368 Jul. 21, 1992, abandoned.

providing:

- a dried food material to be extracted,
- an extracting liquid, and
- an enriching liquid consisting essentially of a solution of the soluble component to be extracted;

[30] **Foreign Application Priority Data**

Jul. 22, 1991 [AU] Australia PK7363

forming a pool of the enriching liquid at a lower end of a counter current extractor including a rotary screw conveyor mounted within an inclined or vertical housing;

feeding the dried food material into the lower end of the counter current extractor to contact the pool of enriching liquid wherein enriching liquid is absorbed by the dried food material to form a hydrated, enriched food material;

[51] Int. Cl.⁶ **A23F 5/24**

[52] U.S. Cl. **426/425; 426/431; 426/432; 426/433; 426/594; 426/655**

[58] Field of Search **426/594, 655, 426/432, 433, 507, 425, 431**

conveying the hydrated, enriched food material upwardly toward an upper end of the counter current extractor by means of the rotary screw conveyor whilst contacting the hydrated, enriched food material with the extracting liquid which is fed into the other end of the counter current extractor and flows downwardly under gravity to join the pool of enriching liquid;

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,515,730	7/1950	Ormfelt	99/71
3,655,398	4/1972	Pitchon et al.	99/71
3,995,067	11/1976	Marsh et al.	426/432
5,043,178	8/1991	Gottesman et al.	426/432

FOREIGN PATENT DOCUMENTS

23858/77	4/1976	Australia .
72358/88	7/1980	Australia .
72358/81	4/1985	Australia .
2028753	10/1970	France .
1902690	8/1970	Germany .

wherein the residence time of the food material in the pool enriching liquid is essentially no longer than the time taken to hydrate the dried food material.

25 Claims, 3 Drawing Sheets

