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**Hu et al.**

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(54) **DEVICE FOR PREPARING A HOT BEVERAGE**

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**A47J 31/00** (2006.01)

(52) **U.S. Cl.** ..... **99/295**; 99/323; 426/77

(58) **Field of Classification Search** ..... 99/295, 99/323, 302 R; 426/77, 81  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,136,202 A	1/1979	Favre	426/77
5,242,702 A	9/1993	Fond	426/433
5,472,719 A	12/1995	Favre	426/77
5,826,492 A	10/1998	Fond et al.	99/295
5,897,899 A	4/1999	Fond	426/112
5,913,962 A	6/1999	Gasser et al.	99/293
5,948,455 A *	9/1999	Schaeffer et al.	426/77
6,021,705 A	2/2000	Dijs	99/295
6,142,063 A	11/2000	Beaulieu et al.	99/283
7,100,496 B2 *	9/2006	Majer Doglioni	99/295

\* cited by examiner

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(57) **ABSTRACT**

The invention relates to a capsule for the preparation of a beverage obtained by supplying hot water within the capsule under pressure and releasing the beverage from the capsule. The capsule includes a food substance therein, a first surface adapted to be traversed by a flow of water entering the capsule, and a second surface adapted to be traversed by a flow of beverage exiting the capsule. The second surface is adapted to deform outwardly upon action of the inside water pressure thereon. Also, that surface includes at least one opening member capable of deforming inwards the capsule upon a mechanical reaction force applied from outside onto the closure member as a result of the deformation of the second surface due to the build-up of the inside pressure.

**6 Claims, 11 Drawing Sheets**

