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# United States Patent [19]

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**Debolini**

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[54] **DRYER, PARTICULARY FOR GRANULAR OR POWDERED PRODUCTS**

|           |         |                      |         |
|-----------|---------|----------------------|---------|
| 2,732,186 | 6/1956  | Ivarsson .           |         |
| 3,855,404 | 12/1974 | Rotaru .             |         |
| 4,183,673 | 1/1980  | Kimmel .....         | 366/288 |
| 4,506,838 | 3/1985  | Riniker et al. .     |         |
| 4,882,851 | 11/1989 | Wennerstrum et al. . |         |
| 5,150,968 | 9/1992  | Inoue .....          | 366/288 |

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**FOREIGN PATENT DOCUMENTS**

[21] Appl. No.: **722,004**

|           |         |                  |
|-----------|---------|------------------|
| 54-132298 | 12/1979 | Japan .          |
| 1345000   | 1/1974  | United Kingdom . |

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[51] **Int. Cl.<sup>6</sup>** ..... **F26B 11/12**

[52] **U.S. Cl.** ..... **34/179; 366/288**

[58] **Field of Search** ..... 34/179, 180, 183;  
366/288, 312

[57] **ABSTRACT**

The dryer includes a double-walled casing, the inner wall of which defines a cylindrical drying chamber for receiving the products and the outer wall and the inner wall of which define between them an interspace for the circulation of a diathermic fluid. A shaft is mounted in the chamber and has a motor for rotating it about its own axis and at least one mixing blade fixed to it which, on rotation of the shaft, can exert a mixing action on the product and can detach it from the inner wall of the casing. The shaft is mounted eccentrically of the longitudinal axis of the chamber and has a motor rotating it about the longitudinal axis of the chamber.

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

2,552,360 5/1951 Zichis ..... 34/179

**10 Claims, 4 Drawing Sheets**

