

Title (en)  
TUMBLING APPARATUS

Publication  
**EP 0186357 B1 19930303 (EN)**

Application  
**EP 85308900 A 19851206**

Priority  
• US 68512184 A 19841221  
• US 77782185 A 19850919

Abstract (en)  
[origin: EP0186357A2] A vibratory material handling apparatus is provided for mixing of materials, cleaning, blending and/or shake-out of castings or the like. The machine comprises a horizontal container carried by a frame resiliently mounted on a foundation. A vibration generator is carried by the container and produces a line of force along an axis which passes exteriorly of the container or intersects with the container but offset from the center of gravity of the container. The vibration generator is adjustable on the container so that the direction of the line of vibratory force can be changed for changing the tumbling, mixing, cleaning, blending or shake-out characteristics of the machine. The relative movement between the inside of the container and the material in the container describes angles of attack with the container surface which movements are rotational about a center of rotation. A line from the center of rotation through the center of gravity of the container intersects the line of force from the vibration generator at a substantially right angle.

IPC 1-7  
**B24B 31/06**

IPC 8 full level  
**B07B 1/32** (2006.01); **B22D 29/02** (2006.01); **B22D 29/08** (2006.01); **B24B 31/06** (2006.01)

CPC (source: EP)  
**B22D 29/02** (2013.01); **B24B 31/062** (2013.01)

Cited by  
EP0386872A1; CN109926381A; EP3795299A1; CN113477902A; US6237749B1

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BE CH DE FR GB IT LI SE

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**EP 0186357 A2 19860702; EP 0186357 A3 19861126; EP 0186357 B1 19930303; EP 0186357 B2 19970716;** AU 1465188 A 19880707;  
AU 5048085 A 19860626; AU 573928 B2 19880623; AU 584011 B2 19890511; CA 1267886 A 19900417; DE 3587147 D1 19930408;  
DE 3587147 T2 19930701; DE 3587147 T3 19980305; DK 598585 A 19860622; DK 598585 D0 19851220; JP H04220156 A 19920811;  
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