Title (en)

Apparatus for homogenizing powder, its use and a method making use of such an apparatus

Title (de)

Vorrichtung zum Homogenisieren von Pulver, deren Verwendung und ein Verfahren unter Verwendung einer derartigen Vorrichtung

Title (fr)

Dispositif d'homogénéisation de poudre, son utilisation et un procédé d'homogénéisation utilisant un tel dispositif

Publication

EP 1277513 A1 20030122 (FR)

Application

EP 02291785 A 20020716

Priority

FR 0109709 A 20010720

Abstract (en)

Two cylindrical drums (16) are mounted coaxially on an axle (18) inside a leak-proof cylindrical body (14) along its horizontal longitudinal axis (XX'). The outer drum has blades (22) on its outer surface and the powder is homogenized in the space between the outer drum and the sleeve of the body as the drums rotate driven by the axle. Cold air is supplied via a channel in the axle The leaf-proof cylindrical body has a cylindrical sleeve (14a) closed at its ends by two discs (14b). There is a filling orifice (14c) at the top and an emptying orifice (14d) at the bottom. The internal and external drums each have a cylindrical wall (16a, 16c) closed at the ends by discs (16b, 16d). The axle (18) is on a bearing (20) at each end disc, and the drums are fixed to it. One end section (18a) of the axle has a first internal longitudinal channel connected to an external supply of cold air and an orifice inside the body to send the cold air into the space between the drum and the body. The other end section has a second internal longitudinal channel connected to means of evacuating the air . Each bearing is sealed to ensure it is leak-proof, and the device includes a motor to rotate the axle. A scraper (26) is placed between each end of the body and the end of the corresponding drum to prevent powder deposits forming. The means of making the bearings leak-proof include a pressure-seal. The cold air is supplied via an inlet nozzle (42) on a rotating joint (44) outside the body to connect to the first channel. The space between the two drums is also fitted with blades (17). At least the lower part of the sleeve is a double envelope in which the cold air can circulate using another source of supply. The top surface of this double envelope has blades. The powder inlet orifice is connected to a supply of powder with an isolation valve. The top of the body has a degassing orifice connected to a control valve with a filter. The powder outlet orifice is connected to a powder system via a valve, such as a butterfly trap with an alveolar valve to vary the flow and an isolation valve downstream. A vibration system is outside the body near the emptying orifice. The blades are helical forming an inverted screw between each half of the outer drum. An Independent claim is included for a process of homogenizing and cooling a powder using the above device.

Abstract (fr)

Le dispositif d'homogénéisation de poudre (10) selon l'invention comprend un corps cylindrique (14) de section circulaire et d'axe longitudinal sensiblement horizontal (XX'), un ensemble de tambours cylindriques (16) disposé à l'intérieur du corps (14) et comprenant un tambour interne et un tambour externe, la face extérieure de la paroi cylindrique (16a) dudit tambour externe étant recouverte de pales (22a, 22b) qui permettent d'homogénéiser la poudre contenue dans l'espace annulaire (24) formé entre le tambour externe et le corps, un espace (16e, 16f, 16g) de révolution étant crée entre lesdits tambours interne et externe, un arbre (18) sur lequel ledit ensemble de tambours cylindriques (16) est monté de manière solidaire, ledit arbre (18) étant creux et relié, à l'extérieur du corps (14), à un système d'alimentation en air refroidi et, à l'extérieur du corps, relié à un système d'évacuation de l'air, et des moyens moteurs mettant en rotation ledit arbre (18). <IMAGE>

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- [Y] FR 2094283 A5 19720204 - COMMISSARIAT ENERGIE ATOMIQUE
- [A] FR 2792544 A1 20001027 - COGEMA [FR]
- [A] US 3672642 A 19720627 - BEISSWENGER HEINRICH
- [Y] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 01 30 January 1998 (1998-01-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 09 30 July 1999 (1999-07-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 09 30 July 1999 (1999-07-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 004, no. 065 (C - 010) 16 May 1980 (1980-05-16)

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