Title (en)

Calender roll

Title (de)

Kalanderwalze

Title (fr)

Rouleau de calandre

Publication

EP 1529878 A1 20050511 (DE)

Application

EP 04105076 A 20041015

Priority

DE 10351514 A 20031105

Abstract (en)

The roller includes both a central bore (12) along the axis (X), with heating and/or cooling bores (14) parallel to it, which are arranged in a radially-central region of the roller casing (16). This resilient calender roller has a roller body (22) and resilient covering (24). In the casing balancing bores (18) lie parallel to the axis. These are radially outside (larger radius) the thermal transfer bores, each set of bores (thermal, balancing) being arranged on a pitch circle. Both sets of bores have uniform circumferential distribution. The number of thermal bores, is a multiple of the number of balancing bores. There are three or more balancing bores. They start their radial penetration at an end face, extending for 0.55 times the roller length, and contain balancing weights. The balancing plane lies at the roller center. Roller body diameter exceeds 400-700 mm. Thermal transfer in cooling, is up to 12 kW/m2>; in heating it is up to 10 kW/m2>. Flow velocity in either mode, is 0.3-0.8 m/s. The flow/return temperature differential is up to 6 K. The outer surface temperature is up to 140[deg]C or 130[deg]C during operation. Thermal bore diameter is 24-60 mm. Implementation takes the form of a duo-pass roller. Thermal medium is supplied and returned to and from the same end of the roller. Thermal bore spacing from the casing is 1.6 times the individual internal diameter (or more). Mutual spacing of thermal bores is at least 1.2-2.0 times their individual diameter. The roller body (22) comprises a roller tube (26) onto which two flanged stub axles (28) are fitted. Channels (30, 32) for flow and return of thermal fluid in one flanged stub axle, are implemented similarly to those for flow reversal in the flanged stub axle at the other end. At least one flanged stub axle (28) is provided. Thermal bores (14) are extensions of tapping bores for threaded holes accommodating the stub axle flange screw-fastenings.

Abstract (de)

Eine thermisch beaufschlagbare Kalanderwalze (10) zur Behandlung einer Materialbahn umfasst eine sich in Richtung der Walzenachse (X) erstreckende Zentralbohrung (12) und zur Walzenachse parallele Heiz- und/oder Kühlbohrungen (14), die mit einem Heiz- bzw. Kühlmedium beaufschlagbar sind. Dabei sind die Heizund/oder Kühlbohrungen im radial mittleren Bereich des Walzenmantels (16) angeordnet. <IMAGE>

IPC 1-7

D21G 1/02

IPC 8 full level

D21G 1/02 (2006.01)

CPC (source: EP)

D21G 1/0266 (2013.01); **F28F 5/02** (2013.01)

Citation (search report)

- [DX] DE 10207505 A1 20030911 - SCHWAEBISCHE HUETTENWERKE GMBH [DE]
- [X] US 2002088120 A1 20020711 - LAITINEN ARTTU [FI], et al
- [X] US 5549154 A 19960827 - NISKANEN JUHANI [FI], et al

Citation (examination)

EP 0962591 A2 19991208 - VOITH SULZER PAPIERTECH PATENT [DE]

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EP1693510A1; CN110219098A; WO2013174880A1

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