

Title (en)
Steam-heated roller

Title (de)
Dampfbeheizte Walze

Title (fr)
Rouleau chauffé à la vapeur

Publication
EP 0924339 A3 20000419 (DE)

Application
EP 98122080 A 19981121

Priority
• DE 19756152 A 19971217
• DE 19809080 A 19980304

Abstract (en)
[origin: EP0924339A2] The steam heated roller assembly has a pump system (12) to pump out any condensation. The pump (12) does not move in relation to the roller (1), at one end of the roller (1). The pump system (12) has at least one pump, with an external drive which operates through the roller rotation and a static drive take-off (24). The drive has a return setting unit. The pump is a piston pump with an inlet control edge and/or outlet control edge at the piston. The pump system (12) has a peripheral surface around it, and the external drive mechanism acts on the pump through a drive surface which, peripherally, is at a variable gap from the pump. The drive surface movement speed matches the surface speed of the pump system (12). The drive surface is the peripheral surface of a wheel (24), powered by a torque transmission link with the rotating roller (1). The drive surface can also be a belt, passing partially round the pump system (12) and partially round an external deflection roller. The pump system can contain at least one rotary pump, with an external drive, with the pump inlet and outlet separated by the pump drive. Upon rotation, the drive passes through a working zone with a chamber with a constant volume which moves from the pump inlet to the pump outlet. The rotary pump has a rotary paddle wheel or a rotary pump unit. The drive is operated by the rotation of the roller against a static drive unit using a drive wheel in torque-transmission contact with a counter wheel in a positive or friction fit grip, on an axis matching the roller axis. The counter wheel has no rotation to the bearing housing of the roller, or it has rotation against the bearing housing with a steam drive. The steam drive is a turbine, with a hot steam flow for its rotation, with torque-transmission contact with the drive wheel. The roller is heated by a number of peripheral channels. The pump system (12) is linked to the heating channels through a condensation channel at a radial outer wall of the heating system. Each heating channel leads to a common end chamber, where condensation is collected, to pass out to the pump through the condensation channel. The collection chamber has a ring shape, connecting the ends of all the heating channels. The condensation channel extends radially outwards and upwards to the pump. The pump is connected to an outflow pipe through a non-return valve, with a connecting pipe through the roller journal.

IPC 1-7
D21G 1/02; **D21F 5/10**

IPC 8 full level
D21F 5/10 (2006.01); **D21G 1/02** (2006.01)

CPC (source: EP US)
D21F 5/10 (2013.01 - EP US); **D21G 1/0266** (2013.01 - EP US); **F28F 5/02** (2013.01 - EP US)

Citation (search report)
• [X] DE 2454742 A1 19760526 - FELDMUEHLE ANLAGEN PROD
• [A] EP 0499597 A1 19920819 - VALMET PAPER MACHINERY INC [FI]
• [A] EP 0768424 A2 19970416 - SCHWAEBISCHE HUETTENWERKE GMBH [DE]

Cited by
DE102012013159A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
EP 0924339 A2 19990623; **EP 0924339 A3 20000419**; **EP 0924339 B1 20030507**; DE 19809080 A1 19990923; DE 19809080 C2 20030814; DE 59808252 D1 20030612; US 6128827 A 20001010

DOCDB simple family (application)
EP 98122080 A 19981121; DE 19809080 A 19980304; DE 59808252 T 19981121; US 21081798 A 19981215