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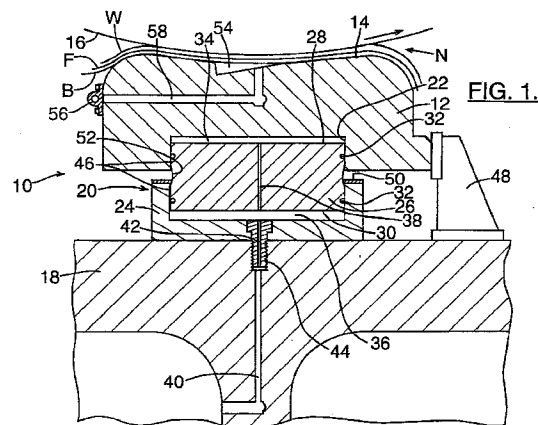
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(54) Shoe press

(57) A shoe press for applying pressure to a moving web (W) of paper or the like includes a press shoe extending along a full width of the web being carried through a nip (N) defined between the shoe and a backing member (16), a support (18) for the shoe, and a plurality of articulated hydraulic loading cylinders (20) arranged between the support and the shoe for urging the shoe toward the backing member (16) to apply pressure to the web. Each loading cylinder (20) includes a single piston (26) and first and second cylinders (22, 24) attached to the shoe and to the support, respectively. The opposite end portions of the piston are slidably received within the cylinders so as to define working chambers (34) in the cylinders which are pressurizable by hydraulic fluid for urging the two cylinders away from each other. The piston (26) engages the cylinders (22, 24) at seals (32) which enable the piston to pivot with respect to both cylinders about axes parallel to and perpendicular to the machine direction so as to enable the loading cylinders to accommodate deformations and thermal expansion of the shoe in the cross-machine direction and to allow the shoe to pivot about an axis perpendicular to the machine direction.



EP 0 933 471 A3



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EUROPEAN SEARCH REPORT

Application Number
EP 99 85 0014.4
Page 1

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.6)
A	DE 19515832 C1 (VOITH SULZER PAPIERMASCHINEN GMBH), 2 May 1996 (02.05.96) --	1, 18	D21F 3/02
A	DE 4423212 C1 (SULZER-ESCHER WYSS GMBH), 7 March 1996 (07.03.96) -----	1, 18	
			TECHNICAL FIELDS SEARCHED (Int. Cl.6)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
STOCKHOLM		19 May 1999	OLOV JENSÉN
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO. EP 99 85 0014.4**

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19515832 C1	02/05/96	CA 2173890 A	30/10/96
		DE 19607211 A	28/08/97
		EP 0740016 A	30/10/96
		FI 960908 A	30/10/96
		JP 8302582 A	19/11/96
		US 5688375 A	18/11/97

DE 4423212 C1	07/03/96	CA 2152994 A	02/01/96
		FI 953271 A	02/01/96
		US 5702337 A	30/12/97
