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54 **Chill roll.**

57 A chill roll for cooling a web, such as in the printing industry, where a uniform temperature across the chill roll is maintained. Journals support an outer roll assembly and an inner roll assembly. The inner roll assembly is bearing mounted on the inner ends of opposing journals and the outer roll is rotated about the inner roll, which is weighted to free-wheel about the bearings to minimize rotary motion. Coolant is introduced through the journal on one end and into a center tube, where the coolant uniformly flows in an annular space between the rolls and along the length of the inner and outer roll assemblies to circumferentially traverse between the rotating and stationary outer and inner rolls. This coolant flow provides enhanced heat transfer from the outer rotating chill roll to the circulating coolant. Heated coolant collects and returns through a center tube, and exhausts through the center tube and out through the journal. Turbulence inducer bars between the inner and outer roll assemblies creates a turbulence in the coolant flow between the outer and inner rolls to further enhance heat transfer.

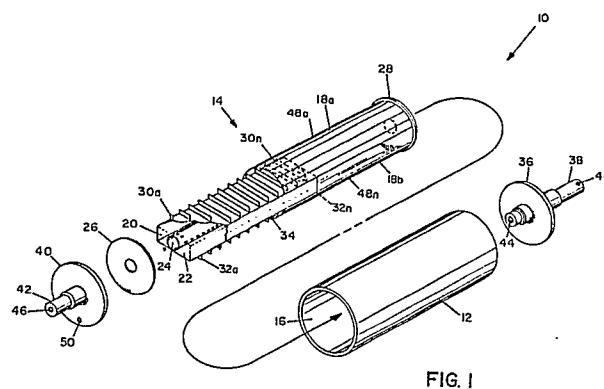


FIG. 1



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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.4)
Y	US-A-4120349 (ALHEID) * column 2, line 1 - column 4, line 43; figures 1, 2 *	1-3, 5, 6	B41F23/04
Y	DE-A-2209498 (MASCHINENFABRIK AUGSBURG NURNBERG) * page 3, line 20 - page 4, line 20; figure 1 *	1-3, 5, 6	
Y	GB-A-869890 (INTA-ROTO MACHINE COMPANY) * page 2, line 27 - page 2, line 37; figure 1 *	2, 3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B41F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14 DECEMBER 1989	Examiner EVANS A. J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			