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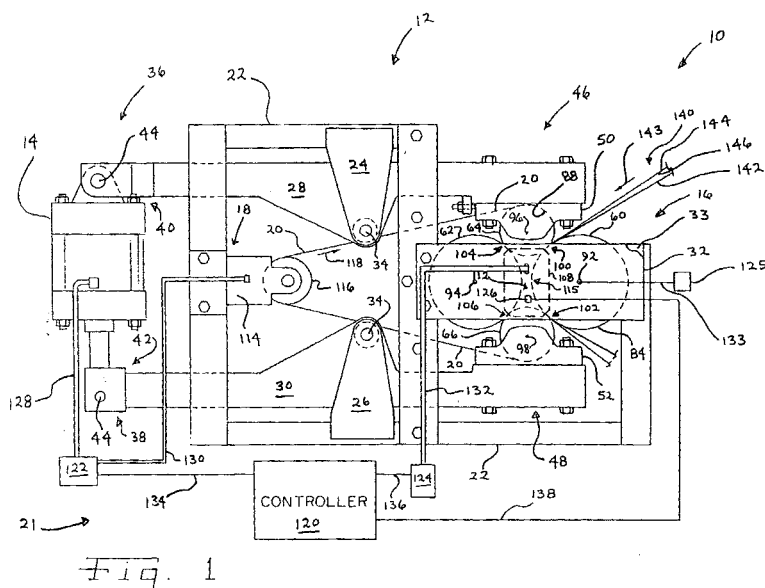
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(54) **Pressing apparatus with membrane**

(57) An apparatus for processing a continuous web having a first side and a second side includes a plurality of rollers (60,62,64,66) are arranged for cooperative rotation. The plurality of rollers are positioned to define a corresponding plurality of nips (100,102,104,106). The continuous web is processed through at least two of the plurality of nips. At least a first roller of the plurality of rollers has at least one void formed in the cylindrical middle surface. First and second sealing panels (108,110) engage first and second circular ends of each of the plu-

rality of rollers and define a chamber. A first pressure source (124) is fluidly coupled to the chamber to pressurize the chamber. A membrane (20) is positioned adjacent the first side of the continuous web to separate the continuous web from direct communication with the chamber. The membrane is structured and adapted to have a permeability which permits a predetermined fluid flow therethrough to the continuous web, and structured and adapted for communicating with the pressurized chamber and the at least one void to apply a mechanical pressing force to the continuous web.





European Patent
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EUROPEAN SEARCH REPORT

Application Number
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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.7)
X	US 4 675 079 A (WEBSTER DAVID R) 23 June 1987 (1987-06-23)	1-4,9, 24,30, 31,41	D21F3/02
Y	* the whole document *	49,50, 57-62	
Y	--- US 5 700 356 A (LEFKOWITZ LEONARD R) 23 December 1997 (1997-12-23) * abstract *	49,50, 57-62	
X	--- US 3 974 026 A (EMSON STEPHEN DEREK ET AL) 10 August 1976 (1976-08-10) * the whole document *	41-43	
A	--- US 4 173 249 A (HOLKKO SEPPÖ ET AL) 6 November 1979 (1979-11-06) * column 2, line 41 - column 4, line 13; figures 1,2,5,6,8 * -----	1,2,9, 10, 12-14, 33-35	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			D21F
Place of search MUNICH		Date of completion of the search 28 February 2002	Examiner Rupprecht, A
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-02-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4675079	A	23-06-1987	NONE	

US 5700356	A	23-12-1997	CA 2243597 A1	24-07-1997
			WO 9726406 A1	24-07-1997

US 3974026	A	10-08-1976	CH 563867 A5	15-07-1975
			AT 325409 B	27-10-1975
			DE 2313920 A1	05-09-1974
			FI 62485 B	30-09-1982
			FR 2219836 A1	27-09-1974
			GB 1407389 A	24-09-1975
			IT 1009661 B	20-12-1976
			SE 407364 B	26-03-1979

US 4173249	A	06-11-1979	FI 772143 A	09-01-1979
			DE 2829226 A1	25-01-1979
			GB 1599347 A	30-09-1981
			SE 7807613 A	09-01-1979
