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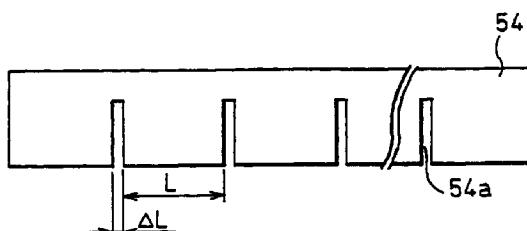
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(54) Fixing device

(57) A heat-resistant sheet, which has at least one slash alone formed therein, is provided between a fixing roller and a pressure member. The heat-resistant sheet, which has a thickness of 300 μ m, is coated with a synthetic resin material having superior toner-releasing and heat-resisting properties, or incorporates such a synthetic resin material inside thereof. Here, a recording material is transported between the fixing roller and the heat-resistant sheet. As the surface temperature of the fixing roller rises, the heat-resistant sheet starts expanding gradually, causing its surface to be warped. However, unless the temperature of the fixing roller exceeds a set temperature, the expansion of the heat-resistant sheet and its surface deflection are all absorbed by the slash. Therefore, it is possible to keep an optimal nip width while maintaining a proper applied pressure of the pressure member, without the necessity of using a heat-releasing device or increase the thickness of the heat-resistant sheet. As a result, a superior fixing operation is available by using the heat-resistant sheet having the slash alone.

FIG. 1





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EUROPEAN SEARCH REPORT

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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.6)
A	DE 196 00 211 A (SHARP KK) 5 September 1996 * abstract; claims; figures * ---	1,8-10, 12-14	G03G15/20
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 485 (P-1605), 2 September 1993 & JP 05 119559 A (FUJI XEROX CO LTD), 18 May 1993 * abstract *	1-6	
A	PATENT ABSTRACTS OF JAPAN vol. 096, no. 007, 31 July 1996 & JP 08 063016 A (KYOCERA CORP), 8 March 1996 * abstract *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 358 (P-1087), 2 August 1990 & JP 02 131275 A (NHK SPRING CO LTD), 21 May 1990 * abstract *	1	
P, X	EP 0 770 935 A (SHARP KK) 2 May 1997 * the whole document * -----	1,8-10, 12-14	TECHNICAL FIELDS SEARCHED (Int.Cl.6) G03G
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	11 November 1998	Lipp, G	
CATEGORY OF CITED DOCUMENTS		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	
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			