



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets



(11)

EP 4 379 472 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
07.08.2024 Bulletin 2024/32

(51) International Patent Classification (IPC):
G03G 15/20 (2006.01)

(43) Date of publication A2:
05.06.2024 Bulletin 2024/23

(52) Cooperative Patent Classification (CPC):
G03G 15/2028; G03G 2215/2025

(21) Application number: 23213014.6

(22) Date of filing: 29.11.2023

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: 01.12.2022 JP 2022192890

(71) Applicant: **Ricoh Company, Ltd.**
Tokyo 143-8555 (JP)

(72) Inventors:

- FURUICHI, Yuusuke**
Tokyo, 143-8555 (JP)
- FUJIWARA, Hitoshi**
Tokyo, 143-8555 (JP)

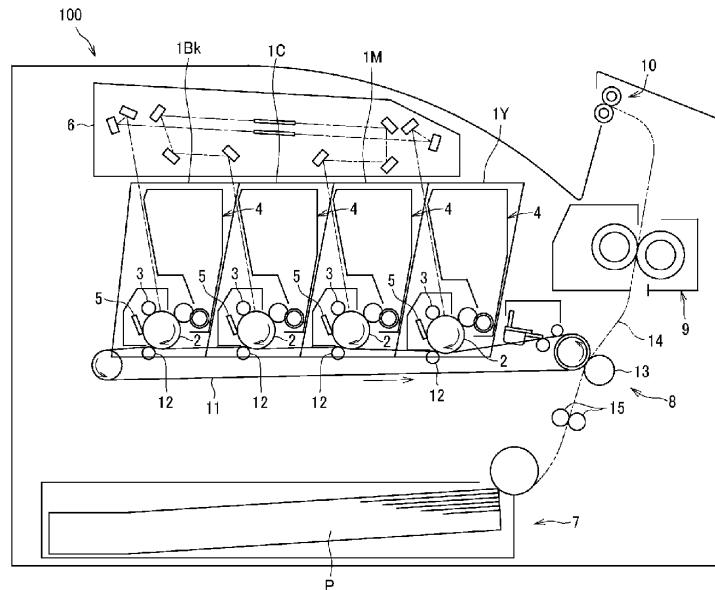
(74) Representative: **SSM Sandmair**
Patentanwälte Rechtsanwalt
Partnerschaft mbB
Joseph-Wild-Straße 20
81829 München (DE)

(54) NIP FORMING UNIT, HEATING DEVICE, FIXING DEVICE, AND IMAGE FORMING APPARATUS

(57) A nip forming unit includes a rotating member (20), a pressure member (21), and a separating member (40). The pressure member (21) contacts the rotating member (20) to form a nip portion between the rotating member (20) and the pressure member (21). The separating member (40) separates a sheet from the rotating member (20). The separating member (40) is disposed downstream from the nip portion in a rotating direction

of the rotating member (20). The separating member (40) includes a contact part (40c) to contact the rotating member (20) and a separator part (40b) to contact the sheet to separate the sheet from the rotating member (20). The nip portion, the separator part, and the contact part are arranged in an order of the nip portion, the separator part, and the contact part from upstream to downstream in the rotating direction of the rotating member (20).

FIG. 1





PARTIAL EUROPEAN SEARCH REPORT

Application Number

EP 23 21 3014

5

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
10	X US 2011/249996 A1 (ASAKAWA MASAYA [JP] ET AL) 13 October 2011 (2011-10-13) * paragraphs [0045] - [0051]; figures 1-3 * ----- X JP 2014 085540 A (SHARP KK) 12 May 2014 (2014-05-12) * figures 3,4,13,14 * -----	1-14 1,3-5, 10-14	INV. G03G15/20
20			
25			
30			TECHNICAL FIELDS SEARCHED (IPC)
35			G03G
INCOMPLETE SEARCH			
40	The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.		
45	Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C		
50	Place of search Munich		
55	Date of completion of the search 24 June 2024		
	Examiner Mandreoli, Lorenzo		
	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		



5
10
15
20
25
30
35
40
45
50
55

**INCOMPLETE SEARCH
SHEET C**

Application Number
EP 23 21 3014

Claim(s) completely searchable:
1-14

Claim(s) not searched:
15-21

Reason for the limitation of the search:

Independent apparatus claim 1 and 15 do not comply with R. 43(2) EPC because they do not fall within any of the exceptional situations set out in paragraph (a), (b) or (c) of Rule 43(2) EPC. In particular, claims 1 and 15 are not alternative solutions because they refer to the same nip forming unit, which is claimed with a slightly different wording and a different level of details. In particular see that the bent portion claimed in claim 15, is also claimed in claim 4, which is dependent from claim 1, therefore the bent portion does not represents an alternative to the nip forming unit of claim 1.

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

EP 23 21 3014

5 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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24 - 06 - 2024

10	Patent document cited in search report	Publication date		Patent family member(s)	Publication date
15	US 2011249996 A1	13-10-2011	CN JP JP US	102213939 A 4999954 B2 2011221234 A 2011249996 A1	12-10-2011 15-08-2012 04-11-2011 13-10-2011
20	JP 2014085540 A	12-05-2014	JP JP	6068092 B2 2014085540 A	25-01-2017 12-05-2014
25					
30					
35					
40					
45					
50					
55					

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82