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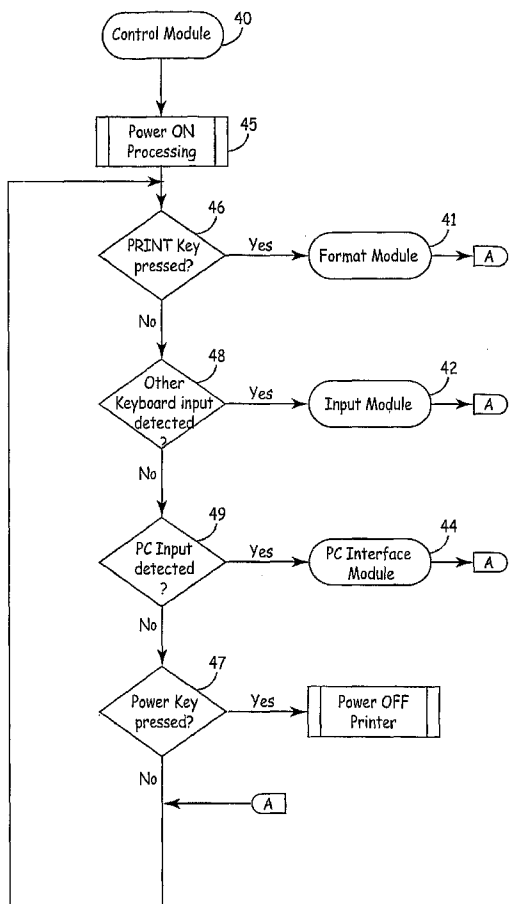
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- (71) Applicant (for all designated States except US): KROY LLC [US/US]; 3830 Kelley Avenue, Cleveland, OH 44114 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): ARKIN, Michael, N. [US/US]; 25003 Woodside Lane, Beechwood, OH 44122 (US).
- (74) Agents: FROENK, David, N. et al.; Dorsey & Whitney LLP, Intellectual Property Department, Suite 1500, 50 South Sixth Street, Minneapolis, MN 55402-1498 (US).

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[Continued on next page]

(54) Title: TAPE PRINTING APPARATUS AND METHOD OF PRINTING



(57) Abstract: A printing apparatus and method of printing for maximizing a print image in a print area in both a width and length dimension and for automatically formatting the printer depending on the type of tape media.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/07856

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **B41J 11/00(2006.01)**

USPC: 400/615.2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 400/615.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- A	US 5,462,372 A (HIRONO) 31 October 1995 (31-10-1995), the entire reference	1, 2, 4 and 6 ----- 3, 5, 7, 14-19
Y --- A	US 5,967,679 A (BEADMAN et al.) 19 October 1999 (19-10-1999), the entire reference	1, 2, 6 ----- 3-5, 7, 14-19
Y --- A	US 5,649,775 A (SAKURAGI et al) 22 July 1997 (22-07-1997), the entire reference.	1, 2, 6 ----- 3-5, 7, 14-19

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified).	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
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Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Authorized officer *Phonela for Bao*
Minh Chau
Telephone No. (703) 308-0956

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/07856

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
 2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-7 and 14-19
- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - No protest accompanied the payment of additional search fees.

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

1. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

(A), Claims 1-7 and 14-19: Drawn to a method of printing an image on a tape media printer having access to stored character data comprising providing a tape printer and a cartridge, composing an image to be printed, the image having an image width and an image length which varies with character size, determining a print character size which maximizes the size of the image relative to a print area and printing the image in the print area using the print character size.

(B), Claims 8, 12 and 13: Drawn to a method of printing an image in either a normal or a *rotated format* on a tape media by a tape printer having access to stored character data comprising providing a tape printer and a cartridge, composing an image to be printed, the image having an image width and an image length which varies with character size, *determining from the interface whether the tape media is a wirewrap and if so, automatically maximizing the size of the image in a rotated format* relative to a print area and printing the image in the print area in a *rotated format*.

(C), Claims 9-11: Drawn to a tape printing apparatus comprising a tape printer having a cartridge receiving cavity, a replaceable cartridge insertable into the cavity, an interface between the printer and the cartridge to provide the printer with information regarding whether *the tape media is a first type media with index marks separating the print areas or is a second tape media comprising a substantially continuous tape without the index marks and means for interpreting information received from the sensor, the sensor functions to sense the end of tape when the tape media is a second tape media and the sensor functions to sense both the index marks for each print area and the end of tape when the tape media is a first tape media.*

2. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: The species are independent or distinct because the above listed species have different scope of invention and each of the inventions as claimed have different mode of operation, function or effect.