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**D E C I S I O N**  
**of 26 April 1996**

**Case Number:** T 0685/94 - 3.5.1

**Application Number:** 89302411.7

**Publication Number:** 0334518

**IPC:** H04N 1/40

**Language of the proceedings:** EN

**Title of invention:**  
Image forming apparatus

**Applicant:**  
CANON KABUSHIKI KAISHA

**Opponent:**  
-

**Headword:**  
Image forming apparatus/CANON

**Relevant legal provisions:**  
EPC Art. 52(1), 56

**Keyword:**  
"Inventive step - yes"

**Decisions cited:**  
-

**Catchword:**  
-



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Boards of Appeal

Chambres de recours

Case Number: T 0685/94 - 3.5.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.1  
of 26 April 1996

**Appellant:**

CANON KABUSHIKI KAISHA  
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Ohta-ku  
Tokyo 146 (JP)

**Representative:**

Beresford, Keith Denis Lewis  
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**Decision under appeal:**

Decision of the Examining Division of the European  
Patent Office posted 6 April 1994 refusing  
European patent application No. 89 302 411.7  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** P. K. J. van den Berg  
**Members:** R. Randes  
G. Davies

### Summary of Facts and Submissions

- I. European patent application No. 89 302 411.7, filed on 10 March 1989 claiming an earliest priority of 10 March 1988 and published under No. 0 334 518, was refused by a decision of the examining division dated 6 April 1994.
- II. The reason for the refusal was that the subject-matter of the then claim 1 lacked an inventive step having regard to the following prior art documents:

D1: EP-A-0 225 100

D2: J. Pielhau, "Vom Entwurf zum Druck", Girardet, 1982, 58-79

The examining division argued that the subject-matter of claim 1, an "image forming apparatus" generating on separate sheets of recording medium colour components of an original multi-colour image, could be identified with a proofing press. Such an apparatus, known from D2, produced from etched plates paper prints representing either the complete image or, to permit detailed proofing, each colour component of the image on separate sheets. Alternatively, the claimed apparatus could be regarded as an obvious combination of D1 and D2. D1, describing a colour copying machine, disclosed the features in the first part of the claim. This machine could easily be modified to form colour-separated images on different sheets of paper. The incentive to do so was again the indication in D2 that conventional printing processes require such images.

III. On 3 June 1994 the applicants lodged an appeal against this decision and paid the prescribed appeal fee, requesting cancellation of the decision and the grant of a patent. On 9 August 1994 a statement setting out the grounds of appeal was filed.

IV. In the annex to a summons to oral proceedings the Rapporteur cited a number of documents, including

D4: J.C. Stoffel et al, "A survey of electronic techniques for pictorial image reproduction", IEEE Transactions on Communication, COM-29, 12, 1981, 1898-1925, and

D8: Bruckmanns Handbuch der Drucktechnik, Munich, 1986, pp.92, 110, 111, 120-123, 172, 173.

It was stated that in the light of D4, concerning electronic half-toning, it appeared that the skilled man was aware that copying and printing techniques had many features in common, ie that these technical areas were related. The preliminary view was expressed that the skilled man might have realised, from the fact that a colour copying machine contained a scanner, that hard copies of the respective colour separations corresponding to the scan data were inherently available from the machine; if so, the invention seemed to have developed in an obvious manner.

V. Oral Proceedings were held on 26 April 1996 during which the appellants filed a new set of claims.

VI. Claim 1 as amended reads (excluding the reference signs):

A digital colour copier apparatus which comprises:

input means for scanning an original image and generating input image data representing pixel density thereof;

means for generating from the input image data color-separated image data comprising tone processed image data for each of plural colour components (Y,M,C), in accordance with the pixel density of the input image data; and

image forming means for forming a tone image on a sheet of recording medium in accordance with the color-separated image data,

characterised in that the apparatus is operable in either of a first mode in which a reproduced image is formed on one sheet of recording medium by said image forming means in accordance with the color-separated image data of each color component, and a second mode in which a plurality of reproduced images, corresponding respectively to the image data of the respective color components, are formed automatically and sequentially on respective sheets of recording medium, wherein the respective images in the second mode are formed sequentially on their respective sheets in synchronism with respective scans of the original image by the input means.

VII. The appellants' arguments in support of the patentability of the subject-matter of claim 1 can be summarised as follows.

The problem solved by the invention was that of expanding the utility of the conventional digital colour copying machine known from D1. The owner of a copying

machine who wanted to print (as opposed to copy) a coloured image had to submit a full-colour original to the conventional sequence of reproduction and printing processes described in D2. Some of the steps of this sequence could be taken over by the copying machine according to the invention. The scanner of an ordinary digital copying machine and its facilities for colour processing and separation were exploited to form the colour-separated images used to produce masters for a conventional printing process. The prior art did not suggest this combination of copying and printing techniques. Even less was it suggested to use the copying machine for proofing purposes since proofing by means of colour-separated images would be done using the etched plates, not the scanner data.

VIII. The appellants request that the decision under appeal be set aside and that a patent be granted on the basis of the following application documents:

Claims:

- Claims 1 to 16                    filed on 26 April 1996

Description:

- Pages 1 to 3                    as originally filed
- Page 4                            filed on 19 April 1996
- Pages 5, 6                      filed on 24 May 1993
- Page 7                            deleted
- Pages 8 to 48                    as originally filed

Drawings:

- Figures 1 to 17                  as originally filed.

Alternatively, grant is requested on the basis of auxiliary requests 1 to 3 filed on 22 December 1995 or auxiliary request 4 filed on 9 April 1996.

## Reasons for the Decision

1. The appeal is admissible.

2. *Claim 1, formal requirements*

The Board is satisfied that the amendments to claim 1 of the main request do not extend beyond the content of the application as filed and therefore comply with Article 123(2) EPC.

The claim is furthermore clear in the meaning of Article 84 EPC and correctly delimited as required by Rule 29(1).

3. *Claim 1, inventive step*

3.1 The first part of claim 1 sets out a digital colour copier apparatus corresponding to the one known from D1. According to the second part of the claim, the invention differs from this prior art in that it is capable of operating in two modes. The first mode is the conventional copying mode of D1 in which a complete colour image is formed on a single sheet of recording medium (typically paper) by superimposition of a plurality of images, each corresponding to one colour component of the scanned original. The second mode generates not one sheet of recording medium but a number of sheets equal to the number of colour components (often four, such as Yellow, Magenta, Cyan and Black). Thus an image is formed on each sheet which corresponds to a particular colour component.

3.2 According to the description, in particular column 2, lines 36 to 40 of the printed application, the purpose of the invention is to provide an image-forming apparatus capable of forming both ordinary colour copies and high-quality original images for use with printing presses. It has been explained that the set of sheets representing the colour components would normally undergo some treatment before being used for printing; they might in particular be transferred to photographic film. The advantage of the invention is the possibility it offers to perform the scanning and colour separation of an image to be printed in a simple and cheap way. Earlier, these steps had to be performed by a specialised firm having suitable and expensive equipment (including scanners) therefor.

3.3 The examining division's first argumentation relied on identifying the claimed image formation as proof printing, which is a known printing technique. In the Board's view, that argument cannot be applied to the present claim 1 which is directed to a "digital colour copier apparatus", thus excluding the conventional proof press.

3.4 The examining division's second argumentation also relies - at least partly - on proofing. With reference to D2, pages 73 to 79, it is stated in the decision that a standard practice in the printing/repro industry consists in printing out the colour components of an image on separate sheets; proofing, in particular, should preferably be performed on the very paper which will be used for the final printing process.

The appellants have submitted that proofing involving a print-out of colour-separated images on different sheets of papers, the so-called "progressive proofing", was only known for proofing using etched printing plates.

That step would be subsequent to the colour separation achieved by the invention. Before the plates were available there was no need for progressive proofing. At that stage only proofing of the scanned data might be envisaged, but then a proof would consist of a complete image on a single sheet of paper, ie a normal paper copy. Moreover, the skilled man would not consider proofing at all unless he had first thought of the possibility of using a colour copying machine to generate originals for a printing process. Also this initial idea, which corresponded to the technical problem given in the description of the application, was not suggested by the prior art.

- 3.5 The Board finds the appellants' arguments convincing. The invention has to do with the interface between two related but distinct techniques, copying and printing. The available prior art is largely concerned either with the one or the other of the two. An exception is D4, which mentions explicitly lithography and xerography as examples of techniques to which different electronic half-toning processing may be applied. This disclosure does however not go further than to demonstrate that modern (colour) copying machines contain units such as a scanner and image processing circuitry which are also used for printing.

None of the cited documents suggests using a copying machine to produce originals for a printing process. In the view of the Board, the skilled man would at most have realised - for example from D4 - that a copying machine could be used to generate a digital image (typically in the form of data stored in memory) which would be suitable as input to a press of the kind which does not require an original on film (such a printing technique is described in D8, page 122). This, however, is not exactly what the invention aims at since the

claimed apparatus generates hard-copies of the different colour separations. The invention in fact proposes a way of making use of the copying machine's capacity for scanning and data processing and at the same time ensuring compatibility with the common kind of printing equipment which requires a physical original. It is this particular interface between the copying and printing techniques which the Board finds is not evident from the prior art.

- 3.6 It follows that it was not obvious to use a copying machine for generating colour-separated images on recording medium for use as originals in a printing process. If so, it was also not obvious to have the copying machine generate "progressive proofs", which are normally made only after the printing plates are available. There is no evidence on file that "progressives" have ever been used to proof data taken directly from the scanner; in this case the normal procedure seems instead to be to form a complete, multicoloured image. As the appellants have pointed out, such an image is obtainable from a conventional copying machine without modifications.
- 3.7 For the reasons outlined above the subject-matter of claim 1 is regarded as involving an inventive step.
4. Since the appellants' main request is granted there is no need to consider the auxiliary requests.
5. Before a patent is granted it must be checked whether the claims appended to claim 1 and the description fulfil the requirements of the EPC. It is appropriate that this examination should be performed by the examining division.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the main request.

The Registrar:

M. Kiehl

The Chairman:

P. K. J. van den Berg

