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**D E C I S I O N**  
of 12 June 1995

**Case Number:** T 0135/94 - 3.5.1  
**Application Number:** 88110798.1  
**Publication Number:** 0298458  
**IPC:** H04N 1/028, H01L 27/14, H01L 31/02  
**Language of the proceedings:** EN  
**Title of invention:**  
Image reading apparatus  
**Applicant:**  
CANON KABUSHIKI KAISHA  
**Opponent:**  
-  
**Headword:**  
-  
**Relevant legal provisions:**  
EPC Art. 56, 111(1)  
**Keyword:**  
"Inventive step (yes) - invention based on recognition of problem and contrary to teaching of prior art"  
"Remittal to first instance - application documents not ready for grant"  
**Decisions cited:**  
-  
**Catchword:**  
-



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Boards of Appeal

Chambres de recours

Case Number: T 0135/94 - 3.5.1

D E C I S I O N  
of the Technical Board of Appeal 3.5.1  
of 12 June 1995

**Appellant:**

CANON KABUSHIKI KAISHA  
30-2, 3-chome  
Shimomaruko  
Ohta-ku  
Tokyo (JP)

**Representative:**

Tiedtke, Harro, Dipl.-Ing.  
Patentanwaltsbüro  
Tiedtke-Bühling-Kinne & Partners  
Bavariaring 4  
D-80336 München (DE)

**Decision under appeal:**

Decision of the Examining Division of the European  
Patent Office dated 21 September 1993 refusing  
European patent application No. 88 110 798.1  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** P. K. J. van den Berg  
**Members:** W. B. Oettinger  
G. Davies

### Summary of Facts and Submissions

- I. The appeal contests the Examining Division's decision to refuse the European patent application No. 88 110 798.1 filed on 6 July 1988 (publication No. 0 298 458).
- II. The reason given for the refusal was that the subject-matter of the independent Claim 1 filed on 17 August 1993 lacked an inventive step vis-à-vis the prior art cited.

The same conclusion was drawn, in the decision under appeal, in respect of Claim 7, considered to be an independent claim, and of all dependent claims (2 to 6 and 8 to 15) filed on the same day.

As prior art, according to the Primary Examiner's preceding Communication, the following documents were considered (numbered as follows by the Board):

D0: JA-A-55-75271,

D1a: Patent Abstracts of Japan, vol.11 no.217 (E-523) [2664] (14 July 1987) &

D1b: JP-A-62-36962,

D2a: Patent Abstracts of Japan, vol.10 no.244 (E-430) (22 August 1986) &

D2b: JP-A-61-73472,

D3a: Patent Abstracts of Japan, vol.11 no.17 (E-471) [2464] (17 January 1987) &

D3b: JP-A-61-188964,

D4: US-A-4 455 577,

D5a: Patent Abstracts of Japan, vol.9 no.131 (E319)

(6 June 1985) &

D5b: JP-A-60-16758.

Of these, D1 and D2, apparently in the form of D1a and D2a, were used in the decision under appeal for showing that, starting from the device known from D1, the features distinguishing the subject-matter of Claim 1 from this prior art would, in the Examining Division's opinion, be rendered obvious by D2. In effect, the same would apply to the independent Claim 7.

III. That decision having been issued on 21 September 1993, the appeal was lodged on 22 November 1993 with a request that the decision be set aside and a patent be granted. The appeal fee was paid on the same day.

On 28 January 1994, the Appellant filed a Statement of Grounds of Appeal.

IV. Together with the Statement of Grounds, the Appellant filed a new Claim 1 in two versions (main and subsidiary request).

With reference to citation D2, the Appellant submitted copies of two pages of D2b containing Figures 3 to 9.

As an auxiliary request, oral proceedings were requested.

V. Main request Claim 1 reads as follows:

"A contact-type image reading device comprising:  
a transparent substrate (201) through which an original (P) is irradiated with light (L) from a back side surface;

a photo sensor section (208) provided on said transparent substrate (201) for receiving a reflected light from said original (P);  
a light shielding layer (202) provided between said transparent substrate (201) and said photo sensor section (208) for preventing that said light (L) enters said photo sensor section (208) directly; and  
a transparent protective layer (229, 230, 232) provided on said photo sensor section (208) for assuring an environment resistance property of said image reading device;

said contact type image reading device being characterized by

a light shielding means (234) being provided directly on a side end surface of said transparent substrate (201) and said transparent protective layer (229, 230, 232), said light shielding means (234) having a property to shut out stray light (L')."

Claim 7 reads as follows:

"A reading apparatus comprising:  
an image reading device according to any of the preceding claims 1 to 6;

characterized by

a conveying means for conveying an original (P) in contact with or closely adjacent to said protective layer (229, 230, 232) in said image reading device; and  
a light source (237) for illuminating said original (P)."

VI. In response to a Communication from the Board commenting on the Appellant's requests, the Appellant replaced on 5 January 1995 the subsidiary request Claim 1 by two versions constituting its new subsidiary requests I and II.

An earlier request for reimbursement of the appeal fee was not maintained in response to the Board's comments.

VII. In support of the request for grant of a patent on the basis of the main request claims, the Appellant submitted, in essence, that D2 is not concerned with a contact-type image reading sensor, and even if its teaching (a light shielding hood surrounding a non contact-type image reading sensor) were combined with that of D1, the result would not be as claimed, viz. not a light shielding means provided directly on the side end surfaces of the sensor.

Moreover, the stray light phenomena underlying the claimed invention were not readily discovered or judged to have a negative effect on the S/N ratio of a contact-type image sensor. Due to the specific structure of contact-type image sensors, conventionally these phenomena were never thought to be a problem. In contrast to the claimed invention, D1 discloses that stray light should even be artificially produced in order to receive special advantages such as a decreased response time of the light sensor.

#### Reasons for the Decision

1. The appeal (cf. III) is admissible.
2. The first question to be answered is whether the **amendments** made to Claim 1 (main request) are admissible.
- 2.1 In substance, Claim 1 is based on the original Claim 6; that claim was the broadest of the three independent claims filed originally.

2.2 Where Claim 1 is more specific than the original Claim 6, in this respect it is clearly derivable from the (still original) description.

3. Following the reason for the decision under appeal, the issue now to be decided is whether **Claim 1** (main request) is allowable, in particular whether its subject-matter involves an inventive step.

3.1 As a preliminary remark, it should be mentioned that no translation of the text of D0 is on file, that D1b is not on file, that D2b is not on file save for the submitted drawings (cf. IV), and that D3b and D5b are not on file.

Therefore, only the D0 drawings, D1a, D2a, Figures 3 to 9 of D2b, D3a, D4 and D5a can, in the present state of affairs, be considered as prior art.

Incidentally, this would apply also to the other four pairs of JP (abstract and patent) documents cited in the Search Report.

3.2 Of the documents which were cited, D1 in the form of D1a was considered in the first instance procedure as the document coming nearest to the claimed invention.

The Board agrees with this view because D1a not only discloses a contact-type image reading device comprising the elements defined in the pre-characterising part of Claim 1 but, in addition, some information about the usefulness or not of stray light.

3.3 More particularly, D1a discloses that the properties of the protective layer (8) are deliberately selected so as to scatter a substantial amount of light (10 to 100% of the light (11) reflected from the original (9) into the photo sensor (5) for the purpose of biasing it.

Since the said biasing light is light which is not modulated by the reflectivity variations of the original, it makes no difference whether it is scattered light stemming from the light entering via the lighting window (3) or stray light entering from anywhere else. The conclusion the Board draws from this fact is that D1a would teach that stray light entering from anywhere is not at all something to be avoided but, even in considerable amounts, something useful.

3.4 The claimed device differs from this prior art device, shown in D1a and defined in the preamble of Claim 1, by the characterising features of Claim 1 (cf. V) and is thus new.

3.5 It follows from the above analysis of D1a (cf. 3.3) that the skilled person knowing this prior art document would have no reason to consider doing the exact opposite of what is disclosed there, namely preventing stray light from entering the image reading device.

3.6 D2 (in the form of D2a and Figs. 3 to 9 of D2b) would not change his mind.

For a non-contact-type image reading device such as one with an elongated optical system (204 in Fig. 7 of D2b) between the original (301) and the photo sensor (205) it is plainly necessary and self-evident that the large amounts of light that might fall from the surroundings onto the side end surfaces of the housing (201) are prevented from impinging upon the sensor section. The

skilled person knowing D2 would not therefore find there any incentive for considering the very much smaller amounts of stray light which might enter from the side end surfaces of the transparent substrate of a contact-type image reading device such as that of D1a to cause any problem.

3.7 It is therefore not obvious to apply the teaching of D2, viz. to provide a light shielding hood, or more generally: a light shielding means, around a non-contact-type image reading device, to a contact-type image reading device, and more specifically, it is not obvious to do this in the way claimed in the application, viz. by providing such means directly on a side end surface of the transparent substrate and protective layer.

3.8 Of course, if the skilled person, implementing the device of D1a had any reason to suspect that stray light might cause a problem, the solution to this problem would be obvious, even in the absence of a document such as D2.

However, this is not the case here. According to the disclosure in the application documents, the claimed invention is based on the recognition that, contrary to the teaching of D1a, stray light does deteriorate the function of the photo sensor of a contact-type image reading device. Since this effect of stray light is not pointed at in the prior art, the claimed invention is to be regarded as being based on a new recognition, and the underlying problem is thus also new. However, having regard to the teaching of D1a this new recognition or new problem, must also be considered as being not

obvious to a skilled person. This renders the claimed invention also non-obvious even irrespective of whether or not the solution as such would be obvious were the problem given.

It may therefore, in the present case, be said that the required inventive step lies in the recognition of the problem rather than in its solution.

3.9 There is nothing in the D0 drawings or in D3a, D4 and D5a to lead the Board to a different conclusion.

These documents do not disclose the above-mentioned deteriorating effect of stray light in a contact-type image reading device and do not therefore anticipate the afore-mentioned non-obvious recognition on which the claimed invention is based.

3.10 For these reasons, the subject-matter of Claim 1 is regarded as involving an inventive step, and this claim is allowable.

4. In the decision under appeal, **Claim 7** was stated to be an independent claim. As an independent claim, it would have to be examined, independently of Claim 1, in respect of the issue of inventive step.

4.1 However, as correctly also stated in the decision under appeal, this claim corresponds, with only minor amendments, to the original independent Claim 12. In fact, although the technical features of the image reading device as they were expressly defined in the original Claim 12, are not expressly recited in present Claim 7, this latter claim does include these features by virtue of the reference in its preamble to Claim 1 where the said features are defined.

As to substance, therefore, the reference in Claim 7 to Claim 1 makes this claim dependent upon Claim 1.

4.2 For the issue to be decided, this means that the subject-matter of Claim 7 involves an inventive step by the very fact that the device of Claim 1 comprised, according to Claim 7, in the claimed apparatus involves an inventive step, irrespective of whether any of the additional features claimed would contribute to the inventive step (which is clearly not the case with the characterising features of Claim 7).

5. As regards the Appellant's main request, it remains to be decided whether the claims, the description and the drawings on file can serve as a basis for the grant of a patent.

5.1 It is not clear that this is the case with respect to all claims.

Even though, in the decision under appeal, the dependent claims were discussed in relation to lack of inventive step of their subject-matter, it would appear that no particular attention was given to more formal requirements such as, for instance, support for, and clarity of, Claims 5 and 6.

5.2 Furthermore, it would appear that amendments are required in the description (Rule 27(1) (b) and (c) EPC).

The Appellant has indicated (letter of 5 January 1995, page 2), that such amendments are intended, but they have not so far been submitted.

5.3 The Board therefore concludes that the case is not ready for grant, and that it would therefore be appropriate, having regard to the Board's discretion under

Article 111(1), second sentence, EPC, to remit the case to the first instance department in order to give the Appellant an opportunity to render the application suitable for grant.

6. *Conclusions*

6.1 The Appellant's request that the decision under appeal be set aside is allowable.

6.2 The Appellant's main request being allowable as far as the subject-matter of Claim 1 is concerned (cf. 3.10), the auxiliary request for oral proceedings ("if there are still fundamental objections as to the subject-matter of the Claim 1 according to the main request") does not need to be considered.

6.3 The Appellant's request that a patent be granted cannot, however, be allowed in the present circumstances, but requires remittal of the case to the first instance (cf. 5.3).

Reference is made to Article 111(2), first sentence, EPC.

6.4 In these circumstances, there is no need to consider subsidiary requests I and II.

**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 Claim 1 (main request) filed on 28 January 1994, Claims 2 to 15 filed on 17 August 1993 and the description and drawings as published.

The Registrar:

M. Kiehl

The Chairman:

P. K. J. van den Berg

