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Aktenzeichen / Case Number / N° du recours : T 68/86

Anmeldenummer / Filing No / N° de la demande : 81 303 630.8

Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 072 378

Bezeichnung der Erfindung: Method relating to disc recording

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : G11B 7/26, G03F 7/16

**ENTSCHEIDUNG / DECISION**  
vom / of / du 12 November 1987

Anmelder / Applicant / Demandeur : DISCOVISION ASSOCIATES

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56

Kennwort / Keyword / Mot clé : Inventive step (yes)

Leitsatz / Headnote / Sommaire

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Case Number : T 68/86

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.1  
of 12 November 1987

**Appellant :** DISCOVISION ASSOCIATES  
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**Decision under appeal :** Decision of Examining Division 067 of  
the European Patent Office dated  
27 September 1985 refusing European  
patent application No. 81 303 630.8  
pursuant to Article 97(1) EPC

**Composition of the Board :**

**Chairman :** P.K.J. van den Berg  
**Members :** W.J.L. Wheeler  
E. Persson

## Summary of Facts and Submissions

I. European patent application No. 81 303 630.8, publication No. 0 072 378, filed on 7 August 1981, claiming priority from a previous application, US 176743, of 11 August 1980, was refused by the decision of the Examining Division 067 of the European Patent Office dated 27 September 1985.

II. That decision was based on Claims 1 to 8 filed on 17 April 1985, of which Claim 1 reads as follows:

1. A method for developing an exposed photo-resist layer of a prescribed, uniform thickness on an optical information disc master, comprising steps of: rotating the disc master at a first prescribed velocity; selecting a photoresist developer solution having a prescribed normality; pre-wetting the layer; dispensing both water and the developer solution simultaneously upon the photoresist layer; rinsing the developed photoresist layer with water to eliminate residual developer solution from the layer; and subsequently rotating the disc master at a second higher prescribed velocity to dry the developed photoresist layer, characterised in that the pre-wetting is by dispensing water unaccompanied by developer solution on the photoresist layer of the rotating master; in that the photoresist layer is only partially developed during the simultaneous dispensation of water and developer solution; and in that completion of development of the layer is achieved in a second development stage in which developer solution alone is dispensed on the photoresist layer.

Claims 2 to 8 are dependent.

III. The reason given for the refusal was that the subject-matter of Claims 1-8 did not involve an inventive step having regard to prior art disclosed in the paper entitled

"Video disc mastering and replication" by Palermo et al in Optics and Laser Technology, August 1977, pages 169 to 173.

IV. The Appellant lodged an appeal against this decision on 18 November 1985. The appeal fee was paid on the same day. The Statement of Grounds was filed on 31 January 1986.

V. The Appellant requests:

(a) the decision under appeal to be set aside (main request) and

(b) oral proceedings (auxiliary request).

#### Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. The Appellant and the Board agree with the Examining Division's summary of the teaching to be derived from the Palermo paper, page 173, section headed "Photoresist development", according to which a method of photoresist development comprises the following steps:

(i) first wetting the disc with developer mixed 20:1 with water

(ii) then using an equal mixture of developer and water

(iii) flushing of water over the disc

- (iv) spinning the disc at slightly higher rpm to dry the developed photoresist.

In the Statement of Grounds, the Appellant argued that it is not clear from the wording in the Palermo paper whether 1 part water to 20 parts developer or 20 parts water to 1 part developer is used in the first step (i). However, in view of the fact that this step is described as being "to wet the plate" and the development time is stated to be 40 s, which is the duration of the second step (ii), it is reasonably clear that a relatively weak mixture is used in the first step (i).

Furthermore, the Board notes that Claim 1 does not specify the concentration of the developer solution, so that it is possible, within the scope of the claim, to use in the second development stage (in which developer solution alone is used) a developer concentration which is effectively the same as that of the equal mixture of developer and water described in the Palermo paper.

Thus the method according to Claim 1 differs from the cited prior art in that:

- (a) the pre-wetting is with water without any developer;  
and
- (b) the development proper is performed in two stages, in which the developer concentration in the first stage is less than that in the second stage.

3. The Examining Division argued, in effect, that the prior art method and the method according to Claim 1 were based on the same principle, namely gradually increasing the concentration of the developer, and that Claim 1 merely extended the known range (1:20 to 1:1) in an obvious way,

within the ability of a person skilled in the art, who could be expected to conduct routine experiments to find the optimum concentration values.

However, the Palermo paper does not propound a general principle of gradually increasing the concentration of developer. Nor is such a principle derivable from this paper. On the contrary, it teaches that the entire development process should take place in a single stage, throughout which an equal mixture of developer and water is used. There is no indication whatever in the Palermo paper that any development takes place during the wetting stage.

Moreover, no document or other evidence has been cited by the Examining Division, or is otherwise known to the Board, to demonstrate that it was known to pre-wet an optical information disc with water without developer, difference (a), or to use a two-stage development process, difference (b). In DE-A-24 43 108 and US-A-3 954 469 xylene is used first, followed by developer rinse, followed by rinsing with water and spin drying.

4. In the opinion of the Board, although it is reasonable to expect a person skilled in the art to conduct experiments to ascertain whether concentration values different from those given in the Palermo paper could be used, such experiments would not necessarily lead him to pre-wet with water without any developer at all, or to replace the single development stage by the two stages specified in Claim 1.
5. In view of the above considerations, the invention defined by Claim 1 must be considered as involving an inventive step within the meaning of Article 56 EPC.

6. Since the Appellant also contests the Examining Division's finding of lack of inventive step in respect of Claims 2 to 8, the Board should also decide the question of inventive step of the subject-matter of these claims.

The Board has, however, noticed that these claims show certain deficiencies, e.g. Claim 2 includes an expression (Shipley AZ 1350) which appears to be a trade mark. It is not clear to the Board whether this expression has a precise meaning. The Board has also noticed that Claims 4 and 8 include errors, namely in Claim 4, last line, "100 rpm" should read "1000 rpm" and in Claim 8, "50 seconds" should read "60 seconds" since 50 seconds is not disclosed in the application as originally filed. In view of these deficiencies, whose correction will require amendment of the claims, the Board is not at present in a position to take a final decision in respect of Claims 2 to 8.

It is, however, noted that Claims 2 to 8 appear to be properly dependent on Claim 1. It follows that, for this very reason, their subject-matter ought likewise to be considered as involving an inventive step.

7. Although the Board has only to consider the question of inventive step of the subject-matter of the claims, since this is the only question with which the present appeal is concerned, the Board has noted that the description has not been brought into line with the present claims, and that much of the description is irrelevant to the invention now claimed.

There is no indication on the examination file that the Examining Division considered these matters, nor indeed did they have to as they refused the application.

8. In view of the above considerations, the Board is of the opinion that the decision under appeal should be set aside.

Since the Appellant's main request is thereby granted, it is not necessary to appoint oral proceedings in accordance with the auxiliary request.

However, in view of the deficiencies noted in items 6 and 7 above, it is not possible to order the grant of a patent on the basis of the application as it stands at present.

In the present circumstances, the Board considers it inappropriate to pursue the outstanding matters itself, and makes use of its powers under Article 111(1) EPC to remit the case to the Examining Division for further prosecution.

#### Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution.

The Registrar:

The Chairman:

F.J.M. Klein

P.K.J. van den Berg