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Boards of Appeal

Chambres de recours

Case Number : T 284/85 - 3.5.1



D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 24 November 1989

Appellant : DISCOVISION ASSOCIATES
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Decision under appeal : Decision of Examining Division 067
of the European Patent Office
dated 27 June 1985 refusing European
patent application No. 81 200 909.0
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : P.K.J. van den Berg
Members : J.A.H. van Voorthuizen
W. Moser

Summary of Facts and Submissions

- I. European divisional patent application No. 81 200 909.0 (publication No. 0 046 000), which has been divided from earlier European patent application No. 79 300 487.0 and claims a priority as from 27 March 1978 based on an application in the US, was refused by decision of Examining Division 2.2.01.067 dated 27 June 1985.
- II. That decision was based on Claim 1 filed with letter dated 6 November 1984, Claims 2-4 filed with letter dated 25 April 1984 and the description (pages 1-7) and drawings (1 sheet) of the divisional application. The ground for refusal was that the subject-matter of Claim 1 was not considered to involve an inventive step with respect to the prior art disclosed in:
- DE-U-7 323 419 (D1) and
DE-A-2 556 919 (D2).
- The decision furthermore cited G. Lenormand & R. Mignée "Construction Mecanique, Éléments de Technologie, Tome 1", Paris 1961, pages 78 and 79.
- III. The Appellant (Applicant) lodged a notice of appeal against this decision on 03 August 1985 and paid the relative fee on 8 August 1985. A statement of grounds was filed on 28 October 1985.
- VI. On 9 October 1987 the Rapporteur issued a communication in which he cited a new document:
- FR-A-2 363 161 (D3),
- which he considered to be more relevant than the prior art cited previously.

The Appellant replied with letter dated 09 December 1987 in which he compared the teaching of D3 with the subject-matter of the application.

V. Oral Proceedings were held on 24 November 1989. During the oral proceedings the Appellant filed a new set of three claims and amended pages 1, 1a and 7 of the description. He requested that a patent be granted on the basis of these three claims, the description as amended at the oral proceedings and the drawings as originally filed.

VI. The only independent claim reads as follows:

"1. An information disc support assembly comprising: a motor (71) and a spindle (77) for driving a disc (2), said spindle (77) having a central axis, a disc support means (86) positioned about said central axis and having a generally flat annular surface (87) extending perpendicular to said central axis and spaced from said spindle for supporting said disc, a central recess (93) provided in said support means; and a centering member (92) mounted on said spindle and received in said central recess provided in said support means, said centering member (92) having an outer surface generally forming a frustum of a cone which is arranged for engaging a central aperture provided in said disc and centering said disc with respect to the central axis of said spindle, and resilient biasing means (91) for enabling the relative axial position of said centering means and said support means to be adjusted, and further comprising a releasable clamping means (6) arranged to engage the side of a disc (2) opposite from the side engaged on said generally flat annular surface (87), characterised in that said disc support means (86) is connected to said spindle (77) to be rotated thereby, in that said generally flat annular surface (87) defines a support plane for said disc which

extends at a fixed axial location relative to said central axis, in that said centering member (92) is axially slidable relative to said spindle (77) and to said support means (86), and in that said biasing means (91) are arranged to bias said centering member out of said support means (86) such that, prior to the engagement of a disc on said centering member, said outer surface of said centering member (92) projects beyond said support plane."

Claims 2 and 3 are dependent upon Claim 1.

VII. The Appellant's submissions can be summarised as follows:

The various centring members described in D1 are not provided with conical outer surfaces. If the centring means described in D1 were provided with a conical outer surface then the disc would not be rigidly clamped between the clamping means and the support means connected to the driving motor unless the hole in the disc is larger than the conical portion of the centring member. In this latter case the conical surface would not act to centre a disc. Thus it would not be obvious to provide the centring members of D1 with conical surfaces.

The prior art according to D3, which uses a surface forming a frustum of a cone (in the following indicated as a "frusto-conical" surface) for centring a disc, suffers from a number of problems for which no solution is provided in the prior art but which are avoided with the device of the invention. In particular centring a disc by means of the device according to D3 results in distortion or wear of the disc because the disc has to slide on disc support means. In the drive position the disc is not always supported at the same height which creates a

problem for focusing the reading beam on the disc. The disc is not clamped securely between the disc support means and clamping means and thus driving the disc relies on the frictional force between the edge of the disc aperture and the frusto-conical surface of the centring member, which can result in distortion or wear of the aperture and disc slippage.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. The subject-matter of the present divisional application does not extend beyond the content of the earlier application (see page 10, line 23 to page 13, line 39; page 16, line 35 to page 17, line 14, Claim 2 and Figure 4 thereof). Therefore the provisions of Article 76 EPC are met.
3. The subject-matter of present Claim 1 is substantially a combination of the features specified in Claims 1-4 of the divisional application as filed. The constructional features of the support assembly according to Claim 1 in their combination have a proper basis in the application as filed. None of the features of that assembly is related to the nature of the recorded information. Therefore the replacement of the term "video disc" by "information disc" in Claim 1 does not introduce new subject-matter.

The features specified in present Claims 2 and 3 derive from the de-scription of the divisional application as filed (in particular page 4, line 8 to page 5, line 16).

The description has been amended on pages 1 and 1a to acknowledge the relevant prior art and state the technical problem solved by the invention together with its solution. Furthermore a part of the description (page 7) which is not relevant to the claimed invention has been deleted.

Thus the amendments do not introduce subject-matter extending beyond the content of the divisional application as filed (Article 123(2) EPC).

4. Novelty

None of the documents cited discloses a disc support assembly as specified in Claim 1. In particular no document discloses a disc support assembly comprising a centring member which is axially slidable on a spindle driven by a motor and presents a frusto-conical outer surface engaging the central aperture of the disc. The subject-matter of Claim 1 is therefore deemed to be novel.

5. Inventive step

5.1 The Board regards document D3 as disclosing the prior art closest to the invention.

This closest prior art corresponds to the preamble of Claim 1. In the disc support assembly described in D3 the centring member is rigidly coupled to the spindle while the support means is allowed to perform a limited movement parallel to the spindle central axis and is biased by means of leaf springs. When a disc is placed on the assembly it contacts the support means before the centring member. Thus while the disc is being centred it slides on the support means, which is likely to cause wear

and distortion. Furthermore with this prior art support assembly the disc is not always supported at the same height with respect to the spindle which causes problems for maintaining the reading beam correctly focused on the upper surface of the disc. Finally, with this prior art assembly the disc is not rigidly clamped between the support means and the clamping means. Thus the disc is not rigidly driven by the support means, but rather by the frictional contact between the edge of the disc aperture and frusto-conical surface of the centring member, which can result in distortion or wear of the disc aperture.

5.2 The problem which the present invention aims to solve is that of removing the disadvantages specified above. In the opinion of the Board this problem would be obvious to a skilled person since these disadvantages are apparent when the prior art device is put into normal use.

5.3 The Board is satisfied that the disadvantages of the prior art are avoided by means of the solution specified in the characterising part of independent Claim 1. It remains therefore to be examined whether this solution is obvious to a skilled person in view of the remaining prior art.

D1 is concerned with the problem of reducing slippage of the disc during centring thereof and proposes four separate solutions to this problem. However all the solutions presented in D1 comprise a support surface on which the disc slides during the centring operation. Thus D1 does not suggest the present invention.

None of the other cited documents addresses the problem of avoiding the disadvantages indicated above. D2 and the book of Lenormand and Migné were cited by the Examining Division to show that it is obvious to use conical

surfaces for centring purposes. They need not be discussed since D3 discloses this idea clearly.

Finally, it has to be taken into account that the invention avoids three distinct disadvantages of the prior art by simple means. The simplicity of the solution provided by the invention to a multiple problem is considered in this case by the Board as a further indication of inventive step.

For these reasons the Board has come to the conclusion that the subject-matter of Claim 1 involves an inventive step.

- 5.4 The patentability of dependent Claims 2 and 3 is supported by the patentability of independent Claim 1.

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 with the order to grant a patent on the basis of the following documents:

Description

pages 2-6 of the divisional application as filed, and pages 1, 1a and 7 filed on 24 November 1989 at the oral proceedings;

Claims

1-3 filed on 24 November 1989 at the oral proceedings;

Drawings

1 sheet of the divisional application as filed.

The Registrar:

The Chairman:

S. Fabiani

P.K.J. van den Berg