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Case Number: T 40/82
N° du recours :

ENTSCHEIDUNG / DECISION
vom / of / du 25 April 1983

Anmelder:
Applicant: International Business Machines
Demandeur :

Stichwort:
Headword:
Référence :

EPÜ / EPC / CBE Art. 52(1), 56

"Inventive step"

Leitsatz / Headnote / Sommaire

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Case Number: T 40 / 82

DECISION

of the Technical Board of Appeal 3.5.1

of 25 April 1983

Appellant: International Business Machines Corporation
Armonk, New York, 10504, USA

Representative: CHAUDHRY, Mohammad Saeed
IBM United Kingdom Patent Operations
Hursley Park
Winchester
Hants, SO21 2JN
GB

Decision under appeal: Decision of Examining Division 067 of the European Patent Office dated 21.10.81 refusing European patent application No 79 101 696.7 pursuant to Article 97(1) EPC

Composition of the Board:

Chairman: G. Korsakoff

Member: J. van Voorthuizen

Member: P. Ford

SUMMARY OF FACTS AND SUBMISSIONS

I European Patent Application No. 79 101 696.7 filed on 01.06.79 (Publication No. 0 005 845), claiming a priority of 05.06.78 (USA), was refused by a decision of the Examining Division 067 of the European Patent Office of 21.10.81. That decision was based on claim 1 as submitted in the course of the oral proceedings on 04.09.81 and claims 2-8 submitted on 15.06.81.

II The reason given for the refusal was that the subject-matter of the claims did not involve inventive step having regard to DE-A-2 304 518, DE-A-2 748 215 and US-A-3 627 580.

III The applicant lodged an appeal against this decision on 16.12.81. The Statement of Grounds was filed on 10.02.82. The appeal fee was duly paid.

IV In a communication of 20.10.82 the Rapporteur of the Board of Appeal notified the applicant that an essential feature which, as apparent from the description, was necessary to obtain the desired effect did not appear in the claims which, therefore, were not allowable, having regard to Rule 29(1) and (3) EPC.

V With his reply of 09.11.82 to this communication the applicant filed new claims which were so amended as to be limited to a process and apparatus incorporating the aforementioned feature in addition to the features already mentioned in the earlier claims. On the same date, the applicant filed amendments to the description. In reply to a second communication by the Rapporteur of 02.03.83, the applicant submitted on 12.03.83 further

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amendments to the claims and description. The applicant requested that a European patent be granted on the basis of these amended claims which read as follows.

1. A method for manufacturing magnetic recording tape comprising moving the tape from a stock reel (12) to a take-up reel (14) for the tape, coating (17) the tape with a magnetic particle solution and drying (15) the tape characterised in that the method comprises applying to the uncured coated tape a sequence of disorienting magnetic fields (30) in different directions and of diminishing strengths to cause random distribution of the magnetic particles in the magnetic medium and thereafter drying the magnetic medium whereby the magnetic medium is cured with magnetic particles maintained in essentially disoriented state, said magnetic fields being applied by a magnetic assembly (30) including a first plurality of strip-like zones each comprising a set of magnets (34, 36) in side-by-side relationship having magnetic field directions which are parallel to and alternate in the direction of the zone, and a second plurality of strip-like zones each comprising a set of magnets (37,39) in side-by-side relationship having magnetic field directions which are parallel to and alternate in the direction perpendicular to the direction of the zone, said first and second plurality of zones being arranged so that each of said first and second plurality of zones is juxtaposed in side-by-side relationship in alternating order along the longitudinal direction of the tape, connection means for supporting the combination of said first and second pluralities of zones in said juxtaposed alternating order along the plane of the tape in a pattern of diminishing strength and a keeper (40) extending across the trailing edge of the magnetic

assembly to smooth the transition between the fields of the magnetic assembly and the field free region beyond the magnetic assembly.

2. A method as claimed in claim 1, wherein the substrate is a web of polyethylene terephthalate.

3. A method as claimed in claim 1 or 2, wherein the directions for applying the magnetic fields alternate at angles of +/- 45°.

4. A method as claimed in claim 3, wherein the sequence of diminishing fields alternates at least ten times.

5. An apparatus for manufacturing a magnetic recording tape (16) including a stock reel (12) and a tape up reel (14) for the tape, a coater (17) located between said reels for applying a magnetic particle solution to the tape (10) means for advancing the tape from said stock reel past said coater to the take-up reel, and means (15) for drying the tape, characterised in that the apparatus further includes a magnetic assembly (30) including a first plurality of strip-like zones each comprising a set of magnets (34,36) in side-by-side relationship having magnetic field directions which are parallel to and alternate in the direction of the zone, a second plurality of strip-like zones each comprising a set of magnets (37, 39) in side-by-side relationship having magnetic field directions which are parallel to and alternate in the direction perpendicular to the direction of the zone, said first and second plurality of zones being arranged so that each of said first and second plurality of zones is juxtaposed in side-by-side

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relationship in alternating order along the longitudinal direction of the tape, connection means for supporting the combination of said first and second pluralities of zones in said juxtaposed alternating order along the plane of the tape in a pattern of diminishing strength and a keeper (40) extending across the trailing edge of the magnetic assembly to smooth the transition between the fields of the magnetic assembly and the field free region beyond the magnetic assembly, said tape being moved relative to said magnetic assembly whereby an alternating sequence of diminishing fields is applied to the tape to cause a random distribution of the magnetic particles coated on said tape and said drying means being located between said magnetic assembly and said take-up reel.

6. An apparatus as claimed in claim 5, wherein the magnetic field direction of said first plurality of zones is at 45° to the direction of movement of said tape and the second plurality of zones are juxtaposed to said first plurality of magnetic means so that the magnetic field direction of the second plurality of magnetic means of zones is at an angle of 90° to that of the first magnetic field direction.

7. An apparatus as claimed in claim 5 or 6, wherein the sequence of diminishing fields alternates at least ten times.

8. An apparatus as claimed in claim 7, wherein the combination of said first and second plurality of zones is arranged in a plane at an angle substantially 1.2° to that of said tape and the leading edge of the combination of said first and second plurality of zones pro-

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vides a magnetic field intensity of at least $\underline{750}$ A/cm
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(300 oersteds) on said particles, whereby the successive magnetic fields diminish in strength upon movement of said tape.

REASONS FOR THE DECISION

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

2. Although the Examining Division properly rejected the claims before it on the ground of lack of inventive step, the present claims are not open to that objection as they are limited by the essential feature of the configuration of the magnetic means for obtaining a random distribution of the magnetic particles in the tape. This feature is not indicated in any way in the cited prior art. It follows that the present claims are not open to objection.

3. The amendments to the description submitted on 9.11.82 and 12.03.83 duly take account of the prior art and of the new wording of the claims, in conformity with Rule 27(c) and (d) EPC respectively, in conjunction with Rule 36(1) EPC. They are, therefore, not open to objection.

For these reasons,

it is decided that:

1. The decision under appeal is set aside

2. The case is remitted to the Examining Division with the order to grant the European patent applied for on the basis of the following documents:

   (a) claims 1-8 as filed on 12.03.83

   (b) original description with the amendments submitted on 12.03.83

   (c) drawings as originally filed.

The Registrar: The Chairman: