BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Publication in the Official Journal ~~Yes~~ / No

File Number: T 199/91 - 3.4.2

Application No.: 83 301 700.7

Publication No.: 0 090 626

Title of invention: Magnetic toner having improved humidity dependency

Classification: G03G 9/08

D E C I S I O N
of 31 March 1992

Proprietor of the patent: Mita Industrial Co. Ltd.

Opponent: Canon Kabushiki Kaisha

Headword:

EPC Article 100(b)

Keyword: "Insufficient disclosure of the invention"

Headnote

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 199/91 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 31 March 1992

Appellant : (Proprietor of the patent)
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Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 28 November 1990 and posted on 17 January 1991 **revoking European patent No.** 0 090 626 **pursuant to Article 102(1) EPC.**

Composition of the Board :

Chairman : E. Turrini
Members : M. Chomentowski
C.V. Payraudeau

Summary of Facts and Submissions

I. The Appellant is proprietor of European patent No. 0 090 626, which was granted on the basis of European patent application No. 83 301 700.7.

II. The Respondent (Opponent) filed an opposition against the European patent, in particular on the grounds that the subject-matter of Claim 1 lacked novelty or an inventive step having regard to the disclosure in documents cited in the notice of opposition. The Respondent also raised the ground that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art but only after expiry of the period of nine months from the publication of the patent.

III. The Opposition Division revoked the patent. The decision was based on the lack of inventive step of the subject-matter of the claims having regard to the available prior art.

IV. The Appellant lodged an appeal against this decision.

V. At the end of the oral proceedings held before the Board of Appeal, the Appellant requested that the decision under appeal be set aside and the patent be maintained in amended form on the basis of the main request or of any of the three auxiliary requests filed on 16 March 1992 together with a description to be correspondingly amended and the original drawings.

VI. Main Request

Claim 1 reads as follows:

"1. An insulating magnetic toner for a one-component developer which toner comprises magnetite and a binder medium in a weight ratio of 1:4 to 4:1, the magnetic toner having a particle size of 5 to 50 μm and the magnetite having a particle size of 0.05 to 10 mμ and a water content, at a temperature of 20% (read 20°C) and at 60% relative humidity, of less than 0.3% by weight, the magnetite being obtainable by converting iron sulphate into magnetite via haematite and refining and sufficiently water washing the magnetic so as to control the water soluble component content of the magnetite to 0.1% by weight or less."

Claims 2 and 3 are dependent claims.

Claim 4 reads as follows:

"4. Use of a toner according to any one of Claims 1 to 3 in the development of an electrostatic latent image."

First auxiliary request

Claim 1 is identical with Claim 1 of the main request, except that the water soluble component content of the magnetite is 0.05% by weight or less, and not 0.1% by weight or less, as in the main request (see amendment requested by the Appellant in his letter dated 23 March 1992).

Claim 2 is a dependent claim.

Claim 3 is concerned with the use of a toner according to Claim 1 or Claim 2 in the development of an electrostatic latent image.

Second auxiliary request

Claim 1 reads as follows:

"1. A process for producing an insulating magnetic toner which comprises the steps of

(a) converting iron sulphate into magnetite via haematite and refining and sufficiently water washing the magnetite so as to control the water soluble component content to 0.1% by weight or less and
(b) mixing magnetite produced according to step (a) having a water content of less than 0.3% by weight at a temperature of 20°C and at 60% relative humidity and having a particle size of 0.05 to 10 μm with a binder medium in a weight ratio of 1:4 to 4:1 so as to produce an insulating magnetic toner having a particle size of 5 to 50 μm."

Claims 2 and 3 are dependent claims.

Claim 4 reads as follows:

"4. Use of a toner according to any one of Claims 1 to 3 in the development of an electrostatic latent image."

Third auxiliary request

Claim 1 is identical with Claim 1 of the second auxiliary request, except that the water soluble component content of the magnetite is 0.05% by weight or less, and not 0.1% by weight or less, as in the second auxiliary request.

Claim 2 is a dependent claim.

Claim 3 is concerned with the use of a toner according to Claim 1 or Claim 2 in the development of an electrostatic latent image.

VII. The Appellant submitted the following arguments in support of his requests. The patent in suit discloses two alternative methods for preparing the magnetite (Fe_3O_4), i.e. (a) by burning and melting iron in an oxygen current, or (b) from iron sulphate $FeSO_4.7H_2O$) through haematite (α-Fe_2O_3), respectively, and the valid claims in dispute are restricted to the second alternative preparation method, which is a "wet" method. Moreover, the control of the water soluble component content can easily be accomplished by performing a sufficient number of water washing steps when prepared magnetite is refined, as indicated in the patent. The "wet" method of magnetite preparation is generally known to people skilled in the art, as is derivable from the documents filed by the Appellant during the oral proceedings. These specific magnetite products provide the results disclosed in Fig. 1 and tables 1 and 2 of the patent in suit, whereas the inadequate results obtained by the prior art can be explained by the method used for preparing the magentite, which is derivable as being the first, burning method. Therefore, the method of preparation and the product of the patent in suit are sufficiently disclosed, they are distinguished over the method and product of the prior art and are accordingly novel and, since they provide unexpected better results than the known ones, they involve an inventive step.

VIII. The Respondent requested that the appeal be dismissed and submitted the following arguments in support of his request. The patent in suit does not teach the skilled person how to make or where to obtain the particular class of magnetite which is the critical novel component of the

claimed toner. It is also to be noted that the subject-matter of the claims of the patent in suit lacks novelty or an inventive step having regard to the available prior art.

Reasons for the Decision

1. The appeal is admissible.

2. Main request

2.1 Disclosure of the invention

2.1.1 The Respondent has submitted that the patent in suit does not teach the skilled person how to make or where to obtain the particular class of magnetite which is the critical novel component of the claimed toner.

2.1.2 Indeed, the starting material for preparing the magnetite (Fe_3O_4) of the toner at issue is not disclosed in the patent in suit. In this respect, other components of the toner such as the binder medium or the carbon black, or apparatuses used for producing said toner, are designated in the patent in suit (see for instance page 3, line 25 to page 4, line 7; page 4, lines 25 to 35; page 5, line 30 to page 6, line 45) by significant terms such as their trade mark and their supplier.

2.1.3 Concerning the preparation method, the patent in suit (see page 2, lines 54 to 55) discloses and acknowledges as "ordinary" two alternative methods for preparing the magnetite (Fe_3O_4), i.e.
(a) by burning and melting iron in an oxygen current or
(b) from iron sulphate ($FeSO_4.7H_2O$) through haematite (α-Fe_2O_3), respectively, the valid claims in dispute being

restricted to the second alternative preparation method, which is a "wet" method. In this respect, the Appellant has submitted that the "wet" preparation method was generally known to people skilled in the art and has provided evidence based on statements of skilled persons and published technical articles. According to the patent in suit (see page 3, lines 11-13), control of the water-soluble component content can easily be accomplished by performing water washing sufficiently by increasing the number of water washing steps when prepared magnetite is refined and the water soluble component content is determined by a mentioned procedure (see page 4, line 47 to page 5, line 9). The Appellant has also submitted that the methods for controlling the water content was generally known and has provided evidence in this respect based on the Japanese Industrial Standard, "Testing Methods for Pigments", JIS K 5101-1978, published by the Japanese Standards Association, which also includes a method for determining the water-soluble component content which corresponds, notwithstanding errors in the patent in suit, to the procedure disclosed therein. Therefore, in the opinion of the Board, it is credible that these methods were known to people skilled in the art and, accordingly, the corresponding magnetite could be produced and were possibly available on the market.

2.1.4 However, the Appellant has further argued that the known toner materials, and in particular the magnetite materials comprised therein, which are mentioned in the documents of the available prior art with significant terms such as their trade marks and their suppliers, were distinguished over the toner in dispute and its magnetite, because they resulted in materials which were indicated in said documents as having features which were less favourable as the toners and the included magnetites of Claim 1 in

dispute, whereby the ground for these different properties could be supposed to be the different method of preparation.

2.1.5 In this respect, however, the patent in suit, which discloses both methods, does not provide any indication about any feature which could distinguish the toner in dispute and its magnetite according to the specific method of preparation from materials prepared according to the alternative method. In relation thereto, it is to be noted that the patent in suit (see page 6, lines 15 to 65 and page 7, lines 30 to 35) discloses only two embodiments of the toner at issue, i.e. Example 1 and Example 2, which are isolating and also have the required water content and water soluble component content features because they are made with magentite samples of types A and B, respectively. There is no indication in the patent in suit either about the starting material for the magnetite or about the preparation method of samples A and B, which can have been prepared either by the burning method or by the presently claimed "wet" method. There is no specific information in the patent in suit about the refining method for the preparation method of sample A or sample B, and in particular about the number of washing steps or the duration of the refining method. The only teaching from the patent in suit is that both methods are available and can be used, whereby the refining method will provide the required properties in relation with the particular starting material and with each of said preparation methods in accordance with experiments to be conducted by the skilled person.

2.1.6 Therefore, since the patent in suit does not disclose any difference of properties of the magnetites produced by the alternative methods, the difference in results between the measurements of the materials of the prior art documents

and those of the patent in suit cannot be explained by a difference of preparation procedure and it must be concluded that the patent in suit does not disclose all the features characterising the magnetite in dispute produced by the ordinary "wet" method and controlled by the standard methods.

2.1.7 The Appellant had argued that the ground concerning the disclosure of the invention in the patent in suit (Art. 100(b) EPC) had been added by the Respondent after the period of nine months from the publication of the patent. However, since the Board is of the opinion that the Respondent's argument is relevant for the reasons mentioned here above, the facts and evidences produced in this respect shall not be disregarded (Art. 114(2) EPC).

2.1.8 Therefore, the Board is of the opinion that the patent in suit does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Art. 100(b) EPC).

2.1.9 Thus, the main request is not allowable.

3. Auxiliary requests

3.1 Since the text of the auxiliary requests, which are based on the patent as granted and are concerned only with products or methods of preparation with closely related characteristics, do not disclose either the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, they are also not allowable for the same reasons.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: **The Chairman:**

P. Martorana E. Turrini

MCh