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T 190 bis

Case Number: T 64 / 82

DECISION

of the Technical Board of Appeal 3.3.1

of 4 October 1984

Appellant: ENGLISH CLAYS LOVERING POCHIN & COMPANY LIMITED
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UNITED KINGDOM

Representative: CHEYNE, John Robert Alexander Mackenzie et al
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Decision under appeal: Decision of Examining Division 024 of the European Patent Office dated 1 December 1981 refusing European patent application No 80303209 pursuant to Article 97(1) EPC

Composition of the Board:

Chairman: K. Jahn
Member: H. Robbers
Member: F. Benussi

Summary of facts and submissions

I. European patent application No. 80 303 209.3 filed on 12.09.80, published on 01.04.81 (publication No. 0 026 075), claiming a priority of 19.09.1979, based upon the British application No. 79 32458, was refused by decision of the Examining Division 024 of the European Patent Office dated 01.12.1981. The subject of the decision were the claims 1 and 2 filed on 16.10.1981 which read as follows:

1. A method of gravure printing comprising printing onto paper coated with a composition including a pigment consisting predominantly of a layer lattice silicate, the layer lattice silicate having a particle size range factor (as hereinbefore defined) which is less than 3, not more than 5% of the particles, by weight, having an equivalent spherical diameter which is less than 0.25 micrometers.

2. A method of gravure printing as claimed in claim 1, characterised in that the particle size range factor is less than 2.

II. The ground for refusal was lack of inventive step having regard to he prior art in US-A-2 527 816 (1), which reveals the use of a clay which meets the definition given in claim 1 in coating paper. According to this citation, the paper concerned is destined for use in making books and periodicals with a smooth and opaque surface, which properties meet the main requirements for gravure printing.

III. On 22.01.1982 the applicant lodged an appeal against the decision by telex, duly confirmed in writing on 25.01.1982. The notice of appeal was followed by a Statement of Grounds, and a new set of claims on 25.03.1982. The appeal fee was duly paid. The appellant requests that the decision be set aside.

IV. The appellant states that the citation gives no clear indication that the paper disclosed is suitable for gravure printing. The indication of relief or offset printing as given in the citation does not constitute a positive incentive in this respect. The problem for the inventor was to reduce the weight of lightweight coated magazine paper without impairing the print quality. The citation discloses nothing with regard to this particular problem. The problem was surprisingly solved by applying a pigment having a narrower than usual particle size distribution.

V. The Board raised objections against the patentability of the claims. A reply was filed in due time and a set of amended claims was presented on 17 April 1984, the deletion of two claims requested in an additional letter of 26 September 1984 being taken into account. These claims read as follows:

1. Lightweight coated magazine paper coated, at a coating weight of not more than 10 g/m^2, with a composition including a pigment consisting predominantly of a layer lattice silicate, the layer lattice silicate having a particle size range factor (PSRF), as defined by the formula:

$$PSRF = \frac{e.s.d._{90\%} - e.s.d._{10\%}}{e.s.d._{50\%}}$$

(where $e.s.d._{90\%}$, $e.s.d._{50\%}$ and $e.s.d._{10\%}$ are the equivalent spherical diameters below which fall 90%, 50% and 10% respectively of the particles, by weight), which is less than 3, not more than 5% of the particles, by weight, having an equivalent spherical diameter which is less than 0.25 microns.

2. Lightweight coated magazine paper as claimed in claim 1, characterised in that at least 5% of the particles by weight have an equivalent spherical diameter which is not less than 10 microns.

3. Lightweight coated magazine paper as claimed in claim 1, characterised in that the particle size range factor is less than 2.

Reasons for the decision

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

2. There is no objection to the present version of the claims on formal grounds since they are adequately supported by the specification as originally filed. Claim 1 results from the combination of the original Claims 1 and 5 in conjunction with page 1, paragraph 1, page 3, lines 4/5, lines 19 to 26 and lines 32-37, page 4 lines 1 to 3 and the table on page 13. Claim 2 is supported by a considerable part of the examples (page 7, lines 2 and 23, page 8 line 30, page 9 line 29 and page 10 line 5) and, therefore, likewise admissible. Claim 3 corresponds to the original Claim 2.

3. In the patent application in suit it is set forth that lightweight coated magazine paper is known, but disadvantaged by a speckled effect when used for gravure printing (cf. page 3 lines 4 to 17). This statement is confirmed by an article filed by the appellant, viz. "Market Trends in Coated Papers" which is a part of a seminar on problems in coated paper production held at the Imperial College of Science of Technoloy in London on 12 May 1971 (2).

This document relates to lightweight coated magazine papers (LWC) having a coating weight of 6 to 10 g/m^2 (cf. page 44 left hand column below, page 45 left hand column, paragraph 3 from below and table 1 on page 46). It is true that the best of these coated papers offer excellent printability, but rotogravure speckle persists (cf. page 45 left hand column, paragraph 2 from the bottom). Although the document is silent on the presence of a pigment such as clay in the coating, it is realistic to assume that this is part of the coating composition, since this kind of pigment is widely used for coating paper destined for use in making e.g. periodicals (see (1) column 1 lines 7 to 11). Therefore, the experiments which use "Clay A" and "Clay D" in coating lightweight paper (cf. the present specification, table 1 in page 13) can be considered as representing the state of the art closest to the subject-matter of the application in suit.

The technical problem underlying this application must be seen vis-à-vis this prior art, in providing a lightweight paper performing, with regard to the defect of speckles, an improved print quality by gravure, which can be seen from the results of comparative experiments

tabulated in the above-mentioned table 1. These experiments demonstrate that paper coated with Clay B, C, E, F, or G or with beneficiated talc according to the present application is superior to conventional paper coated with Clay A or D in that samples which result from gravure printing contain significantly less speckles per square centimeter. This result becomes even more significant at higher coat weight (see table 1, right hand perpendicular column).

In order to solve the suggested problem, lightweight papers were therefore devised which are coated with a composition including a layer lattice silicate more closely defined in Claim 1. The salient characteristic of this silicate is, in a very simplified presentation, a relatively narrow particle size distribution.

4. This teaching is indisputedly not disclosed in the reference state of the art and is therefore novel. It is nevertheless also necessary to consider whether the teaching involves an inventive step. In this respect document (1) was cited by the Examining Division.

The citation relates to a clay product which has passed through a progressive treatment of controlled precipitation from liquid suspension and from which substantially all particles smaller than 0.25 microns and larger than 10 microns have been eliminated (cf. Claim 1, 7 and 10). Curve "1a" depicted in figure 3 of this document shows the percentages by weight of different particle sizes in the treated clay. If the particle size range factor as defined in Claim 1 of the application in suit is calculated for curve 1a, a value of about 2 results, this

value falling within the terms of the said claim. Evidently this clay also meets the further condition of Claim 1 concerning the proportion and diameter of particles.

Moreover, the clay is suggested for use in coating of paper, but not lightweight paper, which is provided for making books and periodicals where a smooth and opaque surface is needed to take the best impressions of e.g. half tone plates (cf. column 1, lines 7 to 11).

There is no reference to any of the commonly used three printing methods, let alone gravure printing. The Board is of the opinion that the paper has to be particularly adjusted to each method in order to achieve a print of high quality. There is no reason why the skilled reader of document (1) would have recognised the suitability of these coated papers even for gravure printing, if the specific problem of a speckled effect associated with gravure printing is taken into account.

5. In the absence of a pointer to gravure printing in document (1) it has to be examined whether it was obvious in the light of this document to solve the envisaged technical problem by means of a narrower distribution of the particle size of the clay.

Document (1) teaches that the viscosity and whiteness of the coating of magazine papers can be improved by use of a clay having a relatively narrow size distribution. This teaching gives no promising lead to solve the quite different technical problem, envisaged in this case, of improving gravure print quality with regard to the defect of speckles, by the same technical feature. The

same conclusion applies to document (2) which merely states that a speckled effect persists in gravure printing without suggesting a remedy. There is no document before the Board that the art in the field of gravure printing has lost its empirical nature and there are laws or principles whereby the advantages achieved by the invention may be predicted in advance with any degree of certainty. From the point of view of the existing technical problem, the expert would have rather disregarded this citation than considered it as a seminal document. From this it follows that the lightweight paper must, independently of whether it is expressed in the form of Claim 1 or its sub claims 2 and 3, be regarded as not obvious, and hence involving an inventive step.

ORDER

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 European patent on the basis of the following documents:

   (a) Description:

   pages 1, 2 and 5 to 12 of the original patent application;

   pages 3, 4 and 13, received on 17 April 1984

   (b) Claims:

   Nos. 1, 2 and 4, the last to be renumered as claim 3, received on 17 April 1984;

   (c) Drawings:

   Figures 1 and 2 of the original patent application.

The Registrar: The Chairman:

J. Rückerl K. Jahn