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D E C I S I O N
of 17 September 2001

Case Number: T 1090/98 - 3.2.3

Application Number: 92900451.3

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Language of the proceedings: EN

Title of invention:
Coating process

Patentee:
Kodak Limited
Eastman Kodak Company

Opponent:
Fuji Photo Film, Co., Ltd.

Headword:
-

Relevant legal provisions:
EPC Art. 52, 54, 57, 111

Keyword:
"Novelty (yes)"

Decisions cited:
G 0007/91, G 0008/91

Catchword:
-



Case Number: T 1090/98 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 17 September 2001

Appellant: Kodak Limited
(Proprietors of the patent) Headstone Drive
Harrow
Middlesex HA1 4TY (GB)

and

Eastman Kodak Company
343 State Street
Rochester
New York 14650-2201 (US)

Representative: Jones, Alan John
CARPMAELS & RANSFORD
43 Bloomsbury Square
London, WC1A 2RA (GB)

Respondent: Fuji Photo Film Co., Ltd.
(Opponent) 210 Nakanuma Minami Ashigara-shi
Kanagawa 250-01 (JP)

Representative: Müller-Wolf, Thomas, Dipl.-Ing.
HARWARDT NEUMANN
Patent- und Rechtsanwälte
Brandstrasse 10
D-53721 Siegburg (DE)

Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office dated 6 October
1998, posted on 13 November 1998 concerning
maintenance of European patent No. 0 563 086 in
amended form.

Composition of the Board:

Chairman: C. T. Wilson
Members: F. Brösamle
M. Aúz Castro

Summary of Facts and Submissions

- I. European patent No. 0 563 086 was granted with claims 1 to 5 on 16 August 1995.
- II. Following an opposition of Fuji Photo Film Co., Ltd. the opposition division maintained European patent No. 0 563 086 in amended form in the oral proceedings of 6 October 1998 on the basis of an auxiliary request; the written decision was issued on 13 November 1998.

In this decision the opposition division came to the result that the subject-matter of claim 5 according to the **main request** lacked novelty with respect to

(E1) US-A-4 113 905.

- III. Claim 5 reads as follows:

"5. A pseudoplastic liquid having viscosity greater than 20 mPas at shear rates less than 500s^{-1} , and a viscosity of less than 10 mPas at shear rates greater than 10^6s^{-1} , characterised in that the viscosity of the pseudoplastic liquid approaches a substantially constant value at a shear rate which lies in a range between 10^4 and 10^8s^{-1} ."

- IV. Against the above decision the proprietors of the patent - appellant in the following - lodged an appeal on 12 January 1999 paying the fee on 20 January 1999 and filing the statement of grounds of appeal on 12 March 1999.

V. The appellant essentially brought forward the following arguments:

- the essential features of the pseudoplastic liquid of claim 5 are that
 - (i) the viscosity is greater than 20 mPas at shear rates less than 500s^{-1}
 - (ii) the viscosity is less than 10 mPas at shear rates greater than 10^6s^{-1}
 - (iii) the viscosity approaches a substantially constant value at a shear rate which lies in a range between 10^4 and 10^8s^{-1} ;
- from (E1), see Figure 3, it is apparent that liquid "B" (aqueous solution of gelatine and polyvinyl hydrogen phthalate only satisfies above criteria (i) and (ii) but not (iii);
- from (E2) - Robert S. Brodkey et al. "Transport Phenomena", McGraw-Hill, 1989, pages 758/759 the behaviour of all pseudoplastic liquids can be described having a lower Newtonian plateau, a variable viscosity region and an upper Newtonian plateau without, however, teaching where these plateaus begin or end;
- in (E1) there is no mention of the precise position of the second Newtonian plateau which is crucial for the solution of the problem addressed by the opposed patent;

- consequently it was not demonstrated that the liquids disclosed in (E1) possess all the essential features recited in claim 5, in particular that the liquid approaches a constant viscosity at shear rates in the range of 10^4s^{-1} to 10^8s^{-1} so that the findings of the opposition division are erroneous.

VI. The appellant requested to set aside the impugned decision and to maintain the patent on the basis of claims 1 to 5 of the **main request** according to the decision under appeal.

VII. The opponent - respondent in the following - who had also appealed, but had withdrawn its appeal on 1 February 2000, presented the following arguments:

- from Figures 15.2 and 15.3 and the accompanying text on page 759 of (E2) it could be seen that the upper Newtonian range starts at shear rates of about 10^4s^{-1} and continues to shear rates of about 10^7s^{-1} ;
- for an expert it would be clear from (E2) that the viscosity of the pseudoplastic liquid in the upper Newtonian region "approaches a substantially constant value at a shear rate above 10^4s^{-1} so that claim 5 of the **main request** only describes the properties of a pseudoplastic fluid already known to the expert from E1, E2";
- summarizing, the subject-matter of claim 5 of the **main request** would not be new with respect to (E1).

VIII. The respondent requested to set aside the impugned decision and to revoke the patent.

Reasons for the Decision

1. The appeal of the proprietors of the patent is admissible.

The respondent having withdrawn its appeal remains a party to the proceedings as of right, Article 107 EPC, second sentence. Since the present respondent was not the only appellant, the appeal proceedings are not affected by that withdrawal (see decisions G 0007/91 and G 008/91, OJ EPO 1993, 356 and 346).

2. *Amendments*

Claim 5 of the **main request** according to the impugned decision is a combination of features of granted claims 1 and 5 since from granted claim 1 the parameters defining the liquid in detail are now incorporated into claim 5. Under these circumstances claim 5 is not open to an objection under Article 123(2) EPC. Since the scope of protection is not extended claim 5 also meets the requirements of Article 123(3) EPC.

3. *Novelty*

3.1 The crucial piece of prior art for the assessment of novelty is (E1).

(E1) does not literally disclose rates up to 10^8s^{-1} rather (E1) only mentions a range from 10 000 **to over**

100 000s⁻¹, see column 5, line 5, and a shear rate range from 100 to 100 000s⁻¹ according to claim 1.

3.2 A graph based on the teachings of claims 1 and 2 of (E1) appears to **lead away** from a **constant** value of the shear rate for the following reasons (1 centipoise equals 1 mPa.s):

(a) at a shear rate of 100s⁻¹ the viscosity should be between 20 and 200 centipoises (claim 1);

(b) at a shear rate of 100 000s⁻¹ the viscosity should be below 10 centipoises (claim 1);

(c) according to claim 2 at a shear rate of 10 000s⁻¹ the viscosity should be below 5 centipoises.

3.3 A graph being based on above features (a) to (c) clearly shows a **curved** line, possibly with a minimum at a shear rate of 10 000, but **not a constant value** for the viscosity in the range between 10 000 and 100 000.

3.4 **Not knowing** the claimed invention the findings of the opposition division that (E1) is a novelty-destroying document with respect to the subject-matter of claim 5 cannot be shared by the board.

3.5 In (E1) nothing is said about the "Carreau equation" so that a skilled person could not get a direct instruction about the behaviour of the pseudoplastic liquid in the range of shear rates beyond 100 000s⁻¹.

3.6 In (E4) Stefan F. Kistler, "The Fluid Mechanics of Curtain Coating and Related Viscous Free Surface Flows with Contact Lines", November 1983, see page 47, first

paragraph and page 349, line 7 from the bottom, the shear-thinning behaviour of non-Newtonian liquids (pseudoplastic liquids) is dealt with in combination with the Carreau equation; page 349, line 7 from the bottom sets out that the liquid "**can be modeled** by the Carreau equation of viscosity" (stress added).

- 3.7 It is therefore not clear that a skilled person would necessarily incorporate the teachings of (E4) or of (E2) into (E1) as general **technical knowledge** since (E1) per se, see above remark 3.4, leads to a **curved graph** which appears to be contradictory to the outcome of the Carreau equation.
- 3.8 Combining (E1) with further pieces of prior art appears **to be a mosaic** not allowable when dealing with the issue of novelty.
- 3.9 The arguments brought forward by the respondent with respect to **novelty** of the subject-matter of claim 5 of the **main request** are not to be followed by the board. Even if from (E2) a graph is known showing an upper and a lower plateau and a variable viscosity region, see Figure 15.2, it is not apparent for a skilled reader of (E2) where these plateaus begin or end. It has moreover to be observed, see (E2), Figure 15.3, that all graphs, namely "Ellis model", "Sisko model", "Bradnyan and Kelly data" end at a value of 10^7 so that (E2) does not consider a range up to 10^8s^{-1} as claimed.
- 3.11 Since (E1) **per se**, see above remarks 3.2, 3.3 and 3.7, leads to a **curved graph** with respect to the interrelationship of shear rates and viscosity a combination of (E1) and (E2) cannot achieve the

subject-matter of claim 5 of the **main request** even if (E1) were read by an expert **knowing (E2)**.

3.12 Summarizing, the subject-matter of claim 5 is novel, Articles 54 and 100(a) EPC, so that the impugned decision cannot be upheld.

4. Since the subject-matter of claims 1 to 5 according to the main request has not yet been fully examined by the opposition division within the terms of Articles 52 to 57 EPC the board considers it appropriate to remit the case to the first instance for further prosecution (Article 111(2) EPC).

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 for further prosecution.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson