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D E C I S I O N
of 13 December 2000

Case Number: T 0391/99 - 3.2.6

Application Number: 92922985.4

Publication Number: 0613405

IPC: B26B 21/60

Language of the proceedings: EN

Title of invention:
Coating cutting edges with flourocarbon polymers

Applicant:
THE GILLETTE COMPANY

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 0391/99 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 13 December 2000

Appellant: THE GILLETTE COMPANY
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Boston
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Representative: Baillie, Iain Cameron
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 12 November 1998 refusing European patent application No. 92 922 985.4 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P. Alting van Geusau
Members: T. Kriner
R. T. Menapace

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal on 12 January 1999, against the decision of the Examining Division, dispatched on 12 November 1998, refusing European patent application No. 92 922 985.4. The fee for the appeal was paid simultaneously with the filing of the appeal. The statement of grounds was received on 19 March 1999.

II. The Examining Division held that the application did not meet the requirements of Article 123(2) EPC and Article 52(1) EPC in conjunction with Articles 54 and 56 EPC, in particular because the subject-matter of the main request filed with letter dated 18 October 1996 extended beyond the application as filed and the subject-matter of the auxiliary request filed at the oral proceedings held on 14 October 1998 did not involve an inventive step with regard to the disclosure of documents:

D1: US-A-3 518 110
D2: US-A-4 029 870.

III. In addition to D1 and D2 the following documents have been cited in the search report:

D3: US-A-3 203 829
D4: US-A-4 777 192
D5: GB-A-768 554
D6: US-A-3 071 856.

D6 is a family member of GB-A-906 005 cited in the present application.

IV. Oral proceedings took place on 13 December 2000.

The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims: 1 to 6 submitted during the oral proceedings on 13 December 2000

Description: pages 1, 3, 4 as published
page 2 submitted during the oral proceedings on 13 December 2000.

Independent claim 1 reads as follows:

"1. A method of forming a polyfluorocarbon coating on a razor blade cutting edge, which comprises forming a dispersion of a telomer in a volatile organic liquid, spraying the dispersion on to a razor blade cutting edge, and heating the coating obtained to sinter the polyfluorocarbon, characterized in that the telomer is obtained by subjecting a fluorocarbon polymer having a molecular weight of at least 1,000,000 in dry powder form to ionizing irradiation of from 20 to 80 megarads."

V. In support of its request, the appellant relied essentially on the following submissions.

The most relevant state of the art was represented by GB-A-906 005 which disclosed a method for forming a polyfluorocarbon coating as defined in the precharacterising portion of claim 1. D1 could not be regarded as closest state of the art, because it did not refer to telomers.

Furthermore, there was no suggestion in the state of the art to produce a telomer in accordance with the characterising portion of claim 1. In particular D2 could give no indication to use an ionizing irradiation of from 20 to 80 megarads to obtain a telomer for the production of a coating for a razor blade edge, because nothing in this document pointed either to the synthesis of a chlorofluorocarbon-free telomer or to the manufacture of a razor blade coating.

Therefore, the subject-matter of claim 1 was novel and involved an inventive step.

Reasons for the Decision

1. The appeal is admissible

2. *Amendments*

Claim 1 differs from claim 1 as originally filed by the addition of the feature according to which the dose of irradiation is of from 20 to 80 megarads. This feature has been disclosed in originally filed claim 2.

Furthermore, the feature according to which a dispersion is formed of a polymer having a molecular weight of less than 1,000,000, has been substituted by the feature according to which the dispersion is formed of a telomer. That telomers are concerned follows from page 2, lines 6 - 22 of the description and the originally filed claim 4.

Claims 2 - 6 correspond to originally filed claims 3 - 7.

The description has been amended to adapt it to the present claims and to include a reference to D4.

In view of the above, the amendments to the application do not give rise to objections under Article 123(2) EPC.

3. *Novelty*

3.1 The most relevant state of the art with respect to claim 1 is disclosed in D6 or its family member GB-A-906 005. Each of these documents discloses

a method of forming a polyfluorocarbon coating on a razor blade cutting edge (see D6, column 1, lines 7 - 12), which comprises forming a dispersion of a telomer in a volatile organic liquid (see D6, column 2, lines 46, 47), spraying the dispersion on to a razor blade cutting edge (see D6, column 2, lines 41 - 45), and heating the coating obtained to sinter the polyfluorocarbon (see D6, column 2, lines 51 -55).

Since D6 and GB-A-906 005 are silent about the production of the telomer, they do not disclose the characterising features of claim 1.

3.2 Further methods of forming a polyfluorocarbon coating on a razor blade cutting edge are described in D1 and D3. However, these documents show less than D6 or GB-A-906 005. Each of D1 and D3 merely discloses most of the features of the precharacterising portion of claim 1, except the one according to which the dispersion is formed of a telomer.

Novelty of the subject-matter of claim 1 is therefore

given.

4. *Inventive step*

4.1 Starting from the state of the art disclosed in D6 or in GB-A-906 005, the object to be achieved by the present invention is to provide a process for making the fluorocarbon telomers without the use of chlorofluorocarbons (see page 1, line 27 - page 2, line 5 of the present application).

According to claim 1, this object is achieved by the step of subjecting a fluorocarbon polymer having a molecular weight of at least 1,000,000 in dry powder form to ionizing irradiation of from 20 to 80 megarads.

4.2 Irradiation of fluorocarbon polymers as such is well known and described for example in D2, D4 and D5.

D4 refers to the production of a fluorocarbon polymer having a low molecular weight (see initial wording of claim 1) and rendering it grindable into a powder by subjecting a fluorocarbon polymer having a molecular weight of at least 1,000,000 (see column 5, lines 18 - 23) in dry powder form (see column 5, lines 58 - 63) to ionizing irradiation (see column 6, lines 2 - 4).

According to D4 the powder receives a dose of 125 to 150 Mrad per pound (see column 6, lines 11 - 14).

Since, 1 rad is the unit for a dose causing an energy of 10^{-2} J per kg, this information is ambiguous and could at best be understood as about 250 to 300 megarads.

Therefore, D4 cannot suggest to provide an ionizing irradiation of from 20 to 80 megarads for use in the coating method described in claim 1 of the present application.

D2 refers to a method wherein a fluorocarbon polymer in dry powder form is subjected to ionizing irradiation of 2 megarads or more, preferably from 2 - 20 megarads, and especially 4 - 10 megarads. The use of a higher dose than 20 megarads is described as rendering the process uneconomic (see column 2, lines 37 - 39). The purpose of the irradiation according to D2 is to produce a non-sticky fine friable powder which may be comminuted to sub-micron particle size (see column 2, lines 17 - 24).

D5 refers to a method for rendering polytetrafluor-ethylene suitable for moulding at a temperature of 200°C or less, which method comprises the step of subjecting the polytetrafluorethylene to irradiation in an amount of 2 - 13 units ($50x10^6$ roentgen). Again, no indication is derivable from this document to apply irradiation in the claimed range for achieving a telomer for use in a coating method for a razor blade cutting edge.

4.3 Therefore, D4, D2 and also D5 fail to give the skilled person an incentive in the direction of the solution of the underlying problem as claimed in claim 1 of the present application.

5. The Board therefore comes to the conclusion that the subject-matter of claim 1 is not disclosed in the available prior art and can also not be derived in an obvious manner from the cited documents. Accordingly it

is novel and involves an inventive step (Articles 54 and 56 EPC).

Claim 1, together with dependent claims 2 - 6 and the amended description, therefore form a suitable basis for the grant of a patent.

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:

Claims: 1 to 6 submitted during the oral proceedings on 13 December 2000

Description: pages 1, 3, 4 as published
page 2 submitted during the oral proceedings on 13 December 2000.

The Registrar: The Chairman:

M. Patin P. Alting van Geusau