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D E C I S I O N
of 26 May 2004

Case Number: T 0383/02 - 3.2.6

Application Number: 95900222.1

Publication Number: 0728232

IPC: D02G 1/18

Language of the proceedings: EN

Title of invention:
Method for making thread

Patentee:
J. & P. Coats, Limited

Opponent:
Amann & Söhne GmbH & Co.

Headword:

-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (no)"
"Inventive step (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0383/02 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 26 May 2004

Appellant: J. & P. Coats, Limited
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 14 February 2002
revoking European patent No. 0728232 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: H. Meinders
J. H. Van Moer

Summary of Facts and Submissions

I. European Patent No. 0 728 232, granted on application Nr. 95900222.1, was revoked by the Opposition Division by decision announced on 21 January 2002 and posted on 14 February 2002. It based the revocation on the finding that the subject-matter of claim 1 of the patent as amended in the opposition proceedings lacked inventive step with respect to the combination of teachings derivable from:

D3: Brochure: Heberlein Maschinenfabrik AG, "Luftblas-
Texturierung" pages 1-1 to 1-4, January 1991, and

D2: EP-A-0 367 938.

II. The Appellant (Patentee) both filed a notice of appeal against this decision and paid the appeal fee on 15 April 2002. On 13 June 2002 the grounds of appeal were filed by fax. Therein reference was made to:

D5: EP-A-0 057 583.

III. Oral proceedings before the Board were held on 26 May 2004, with the consent of the parties, following a short break after deciding case T 382/02, an appeal involving the same parties.

The Appellant requested that the decision under appeal be set aside and that the patent be maintained as amended in the oral proceedings before the Board. In this case it withdrew its request for postponement of the oral proceedings, made earlier that day for both cases T 382/02 and T 383/02.

The Respondent (Opponent) requested dismissal of the appeal.

- IV. Claim 1 of the patent according to the request of the Appellant reads:

"A method for making a thread comprising: feeding at least two drawn, continuous filament starting yarns (18, 19), of which at least one is a multifilament yarn, together to an intermingling device (21) to form a single bulked thread (27) of which the filaments of the starting yarns (18, 19) are intermingled and looped, and applying a bulk-reducing treatment to the bulked thread (27), characterised in that the starting yarns (18, 19) are fed to the intermingling device with substantially equal overfeed, said bulk-reducing treatment essentially reducing the size of the filament loops so that the thread becomes an essentially unbulked thread, whilst retaining the intermingled structure that brought about the bulk".

- V. In support of its request the Appellant argued essentially as follows:

D3 could not affect the novelty of the method of claim 1 as the thermofixation after the intermingling device as disclosed for method B in this prior art publication not necessarily led to an essentially unbulked thread. It could also involve the necessary heat stabilisation of the POY-yarn which was used. The indicated "influence" on the size and stability of the loops not necessarily led to a bulk reduction. In fact, D3 never even mentioned a bulk reduction.

The skilled person would see no reason to combine the teachings of D3 and D2. D2 Involved different overfeeds for the starting yarns, thus if its teaching would be applied to the other methods disclosed in D3, it would be applied to the method C, in which the yarns were supplied to the intermingling device at different overfeeds. This, however, would not lead to the method presently claimed in claim 1. Thus the method of claim 1 also involved inventive step.

One should start from D5 as closest prior art, also because the result of the method was an unbulked thread, which the methods according to D3 did not produce. However, in the method disclosed in D5 the yarns were supplied at different overfeeds. At the time of filing the application for the present patent nobody would have thought of supplying the starting yarns at equal overfeed. Thus also starting from D5 the method of claim 1 was not arrived at in an obvious manner.

- VI. The Respondent argued that D3 was novelty destroying for the method of claim 1. According to section 1.6 of D3 method B involved a bulk reduction by stretching ("Recken") between godets W2 and W4. In fact, even with method A involving only godet W2 there would be a stretching as well, as with such an arrangement there would always be a reduction in loop size. Loop size reduction was further achieved by the thermofixation taking place after the intermingling device. As claim 1 nor the patent in suit defined how far the loop size should be reduced to have the thread qualify as an "essentially unbulked thread", the heat treatment and/or the stretching between the godets W2 and W4 or on godet W2 resulted in such a thread.

Closest prior art should be considered method B disclosed in section 1.6 of D3; if at all, the method of claim 1 differed from that by the fact that it was not explicitly mentioned that the resulting thread should be considered an "essentially unbulked thread whilst retaining its intermingled structure that brought about the bulk". This bulk reduction had as advantage that stability and cohesion of the thread was increased. However, that was exactly what the methods presented in D2 intended to achieve by applying heat to the thread after the intermingling device, see column 8, lines 8 to 53. The effect of this treatment was a reduction in loop size of up to 95%.

It should be borne in mind that the patent in suit was not limited to **elimination** of the bulk, but that a **reduction** of the bulk was seen as sufficient to achieve the required result. As claim 1 nor the patent in suit (column 4, lines 22 to 45) gave any further (quantitative) indication of the extent to which the loop size should be reduced to have the thread qualify as an "essentially unbulked thread", the reduction in loop size as discussed in D2 sufficed to fulfil this requirement.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments (Article 123(2) EPC)*

2.1 Claim 1 as granted has been amended in that the following feature has been added: "said bulk-reducing treatment essentially reducing the size of the filament loops so that the thread becomes an essentially unbulked thread, whilst retaining the intermingled structure that brought about the bulk".

These amendments are derivable from page 6, third paragraph of the original application documents and further limit its subject-matter. Thus the requirements of Article 123 EPC are fulfilled.

2.2 The Respondent argued that claim 1 was unclear (Article 84 EPC) in that it referred to "the bulk", which made it unclear whether the bulk of the thread or of the filaments was meant. In fact there was only an original disclosure of "their bulk", i.e. of the filaments and not of the thread (Article 123(2) EPC).

The Board does not concur with this as the claim refers to the "bulked thread" and to the bulk-reducing treatment being applied to the bulked thread such that it becomes an essentially unbulked thread. This means that "the bulk" refers to the thread.

The original application documents stated (page 6, third paragraph) "retaining the intermingled structure that brought about their bulk". As this passage refers to the intermingled structure it is evident that it concerns the thread and not the filaments, thus the skilled reader will realise that the expression "their bulk" in the original application is incorrect and should be read as "its bulk" or "the bulk", i.e. of the thread.

Thus no formal objection is to be raised against claim 1 as amended in the oral proceedings before the Board.

3. *Novelty (Article 54 EPC)*

In respect of novelty the decision under appeal finds that none of the three documents D1-D3 discloses all features of claim 1 as amended. However, the Respondent argued during the oral proceedings that D3 disclosed the combination of all features of claim 1 as amended.

The Board cannot agree with this opinion. Methods A and B disclosed in section 1.6 on page 1-4 of D3 are the relevant methods for the discussion of novelty, as these involve an equal overfeed of the filaments into the intermingling device. Method C involves different overfeeds, see the first paragraph of page 1-4 of D3.

However, the stabilisation by stretching as mentioned in section 1.6 of D3 applies only to what happens between godets W2 and W3 of method C, as follows from the discussion of these methods in section 1.6 ("zunächst mechanisch stabilisieren, dann thermofixieren und anschließend aufwickeln (C)"). It cannot be considered as forming part of methods A or B, as it is not mentioned for those methods.

For the godet W2 after the intermingling device it is **possible** that the thread is stretched or that the skilled person may decide to stretch the thread while passing it over the godet W2. However, that is not a direct and unambiguous disclosure that this is actually

done and that the result is an "essentially unbulked thread".

The same applies for the thermofixation by application of heat (which is not carried out in method A, only in methods B and C).

Thus not all features of claim 1 are disclosed in a single combination in D3. This is also not the case for the other documents available in this case, with the result that the method of claim 1 is deemed novel (Article 54 EPC).

4. *Inventive step (Article 56 EPC)*

- 4.1 For the discussion of inventive step of the method of claim 1 the Board considers method B of D3 to constitute the closest prior art, not the method disclosed in D5. Method B of D3 involves all technical method steps of claim 1, including the equal overfeed of the starting yarns, whereas the method disclosed in D5 employs differential overfeed of the yarns. Method B of D3 employs a heat treatment after the intermingling device which has an influence on the loop size. It is not clear whether this amounts to an "essential" **reduction** of the loop size (which would be a bulk-reducing treatment resulting in an "essentially unbulked yarn" as defined in claim 1). Thus the only difference between the subject-matter of claim 1 and method B of D3 is the result achieved: "so that the thread becomes an essentially unbulked thread, whilst retaining the intermingled structure that brought about the bulk".

It must be stressed here that the method of claim 1 is not limited to **eliminating** the bulk produced by the intermingling device, but relates more generally to **reduction** of the bulk by reduction of the loop size. Also for this reason D5 - which concerns an elimination of the bulk by tightening the loops into knots which form bud-like projections on the strands, (see page 7, lines 22-24) - is not necessarily the closest prior art.

Further, for the determination of the closest prior art **for a method claim** the Board considers the comparison of the claimed method steps to be more important than the comparison of the final products claimed as a result of such a method. Thus the fact that the thread produced according to method B of D3 may be a textured thread which only has undergone an "influence on its loop size and -stability" ("Beeinflussung von Schlingengrösse und -stabilität") by the application of heat, instead of the "essentially unbulked thread" as resulting from the method of claim 1 is less important than the fact that all method steps as claimed are identical.

- 4.2 Method B discussed in D3 allows for an intermingling of the yarns to form a thread in combination with further treatment of the thread, dependent on the required character thereof ("Je nach Auslegung der Luftblas-Texturiermaschine und abhängig vom gewünschten Garncharakter lässt sich das texturierte Garn auf verschiedene Arten weiterverarbeiten", page 1-4, second paragraph). The skilled person performing this method is thus concerned with obtaining specific thread structures, depending on the further use of the thread.

In the production of threads (e.g. sewing threads) it is important that they do not break and have a high tenacity (see patent in suit, column 4, lines 48-53).

- 4.3 A solution to this problem is provided by the method disclosed in D2, column 8, lines 8-12 and 19-24, where cohesion of the thread and low breakage is achieved by a heat treatment (column 8, lines 41, 42), after the intermingling device, through which the loop size, in relation to its original diameter, is reduced up to 95% (column 8, lines 1 and 2).

In the opinion of the Board, such a reduction in diameter is to be seen as an "essential" reduction in size of the filament loops as claimed in claim 1. Further, the thread has loops in the filaments which cross each other (column 8, lines 49-51), of which the size is reduced by a heat treatment. If the thread maintains its intermingled structure that brought about the bulk because the size of the filament loops according to the method of claim 1 of the patent in suit is reduced by a heat treatment (no further details are provided in claim 1 nor in the patent in suit how the intermingled structure is actually maintained), the same must apply for the heat treatment as disclosed in D2.

- 4.4 To achieve better thread cohesion and low breakage D2 offers the skilled person a heat treatment after the intermingling device. As a heat treatment is already available in method B of D3, the skilled person will adapt it according to the indications contained in D2 so as to achieve the required reduction in loop size

leading to the above mentioned result of better thread cohesion and less breakage.

Thus, the method of claim 1 does not involve inventive step (Article 56 EPC).

- 4.5 The Appellant argued that the application of the teaching of D2 would prompt the skilled person to use method C as starting point, instead of method B, thus leading to a difference in overfeed of the starting yarns, which again led away from the method claimed in claim 1.

The Board cannot concur with this. The methods A, B and C are disclosed in D3 independent from each other, thus can each for themselves be considered as closest prior art. Method B has the advantage of using simpler machines than method C, employing one and the same godet for supplying the yarns to the intermingling device and not stretching the thread after the intermingling device, thus limiting the parameters to be controlled.

Further, the difference in overfeed is discussed in D2 as being "usual" and "preferable", which does not necessarily exclude an equal overfeed. In view of the upper limit of 9% for the overfeed of the first yarn and the lower limit of 14% for the overfeed of the second yarn as discussed in D2, column 3, line 29 and column 4, line 7, it can even be argued that this difference, if at all significant, still falls within the feature "substantially equal overfeed".

4.6 Thus, for lack of inventive step of the method of claim 1 as amended in the oral proceedings before the Board, the appeal cannot succeed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Nachtigall

P. Alting van Geusau