BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

A		B		C	X

File Number: T 949/90 - 3.2.5

Application No.: 84 112 119.7

Publication No.: 0 144 617

Title of invention: A method for the obtaining of chains or fractions wound on beams, starting with a series of continuous, partially-drafted, thermoplastic yarns

Classification: D02H 5/02

D E C I S I O N
of 3 February 1993

Applicant: VAL LESINA S.p.A.

Opponent: 01) Karl Mayer Textil-Maschinen-Fabrik GmbH
02) Rhône-Poulenc Rhodia Aktiengesellschaft
03) HOECHST Aktiengesellschaft Zentrale Patentabteilung

Headword:

EPC Articles 52 and 56

Keyword: "Inventive step (yes)"

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 949/90 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 3 February 1993

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Decision under appeal :	**Decision of the Opposition Division of the European Patent Office of 12 September 1990 with written reasons posted on 11 October 1990 revoking European patent No. 0 144 617 pursuant to Article 102(1) EPC.**

Composition of the Board :

Chairman : C.V. Payraudeau
Members : M.H.M. Liscourt
H.J. Seidenscharz

Summary of Facts and Submissions

I. Three oppositions have been filed against the European patent No. EP-B-0 144 617.

II. The Opposition Division revoked the patent, considering that neither Claim 1 according to the main request nor Claim 1 according to the auxiliary request met the requirement of Article 52(1) in conjunction with Article 56 EPC.

III. The Appellant (Patentee) appealed from this decision, filing with his grounds of appeal a new Claim 1 corresponding to the main claim of the auxiliary request filed during the opposition proceedings and consisting of the combination of the features of Claims 1 and 2 of the granted patent.

IV. This Claim 1 reads as follows:

"A process for beaming synthetic filament yarn comprising the steps of drawing at least 24 yarns made of partially drawn substantially parallel synthetic filaments in a liquid containing vat in parallel relationship to each other, sizing, drying and winding the parallel yarns onto a weaving beam, characterised in that, after the drawing step, the yarns while still wet are subjected separately to an interlacing treatment using a fluid jet and then to the sizing treatment."

This claim is followed by two appended claims numbered 2 and 3 and belonging to the same category.

V. In support of his appeal, the Appellant essentially submitted that the claimed process could not be considered as an obvious aggregation of the conventional operative

steps which it contains in view of the improved results obtained when performing it.

VI. Oral proceedings were held on 3 February 1993 during which the parties set out their arguments. The set of claims filed with the grounds for appeal was maintained unamended.

VII. Among the numerous documents cited during the proceedings, only the following ones were considered as relevant by the Respondents for their final opinions:

D1: EP-A-91549
D2: DE-B-2 611 547
D3: DE-B-1 214 825
D12: DE-A-2 638 795
D16: US-A-2 985 995.

VIII. The Appellant maintained that introducing a step of interlacing in a known process for preparing beams for weaving with sized yarns and performing said interlacing while the yarns were still wet from the drawing step was not obvious, in particular in view of the unexpected fact that said process permitted the production of yarns exhibiting better properties as regards cohesion and size content than the known process.

IX. In support of their requests that the appeal be dismissed for lack of inventive step of the process according to Claim 1, the Respondents submitted essentially the following arguments:

Document D1 describes a process for sizing and beaming a warp for a weaving loom in which the yarns are subjected to a drawing step while travelling through a vat containing a warm size composition.

The person skilled in the art faced with the problem of improving the quality of the yarns produced would look in the neighbouring technical fields if no solution had already been proposed in his field. He would then find in document D2, which belongs to such a technical field consisting in the preparation of beamed yarns for warp knitting, the teaching that the yarns could be submitted to an intermingling step in order to improve the cohesion between the filaments composing said individual yarns before applying oil on them.

Since it is known that oiling is an operation similar to sizing, it would have been obvious for a skilled person to substitute a sizing step for the oiling step without any inventive effort.

The person skilled in the art would also find, in document D16, the teaching that the intermingling step should be made while the yarns are wet. A similar teaching is also given in document D12 which teaches that it is useful to apply a liquid to the yarn before submitting it to an intermingling operation.

Therefore, the corresponding features of Claim 1 do not contribute to an inventive step.

It was also possible for the person skilled in the art to combine the teaching of document D1 with the teaching of document D3 : the skilled person faced with the problem of improving the quality of yarns prepared according to the process disclosed in document D1 would find in document D3 the solutions to his problem because said document, which concerns the preparation of beams for knitting machines, teaches that the yarns be submitted to an intermingling treatment while they are wet just before bringing them

into contact with sizing products. The skilled person would be thereby led to the claimed solution.

Even if it were to be considered that the combination of the teaching of document D1 and D2 did not disclose explicitly the process according to Claim 1 of the patent in suit, an intermingling step was an obvious measure for the skilled person to increase the cohesion of the yarns, if so desired. The skilled person did not need to make a choice between various possibilities to determine where to locate it. There was only one technically acceptable possibility: after the stretching step and before the sizing step, since it would be nonsense to submit the yarns to a drawing step after the intermingling step. As the skilled person knew from document D12 that it was advantageous to wet the yarn before submitting it to intermingling, he had no reason to dispose a drying step after the stretching and before the intermingling, so that he came automatically to the claimed solution.

The skilled person would thereby come to the process according to Claim 1 only by exerting his normal skill.

X. At the end of the proceedings, the Appellant maintained his request based on the set of claims filed with the statement of grounds and the Respondents requested the dismissal of the appeal.

Reasons for the Decision

1. Novelty

1.1 The document representing the closest state of the art is document D1 which discloses a process for beaming synthetic filament yarns comprising the steps of drawing

at least 24 yarns made of partially drawn substantially parallel synthetic filaments in a liquid containing vat in parallel relationship to each other, wherein the parallel yarns are submitted to a sizing step, to a drying step and are wound onto a weaving beam.

It is to be noted that document D1 refers (page 2, lines 10 to 22) to a process according to which a drafting operation and a sizing operation are separately performed on the yarns. However, it is specified that the yarns are wound on creels after the drafting operation and then unwound from the creels to be passed through a sizing bath. Such a process is a discontinuous process and is therefore not a pertinent prior art with respect to the claimed continuous process of the patent in suit. According to the continuous process disclosed in document D1 which therefore represents the nearest prior art to the process which is the subject-matter of Claim 1 of the patent in suit, the drawing and the sizing are performed simultaneously in a single process step because the liquid in the vat where the yarns are drawn is the sizing agent.

The process which is the subject-matter of Claim 1 differs from this state of the art by the additional features that the drawing step and the sizing step are performed separately and that, after the drawing step and before the sizing step, the yarns, while still wet, are subjected separately to an interlacing treatment using a fluid jet. It is therefore novel.

2. Inventive step

2.1 According to its description, the aim of the patent in suit is to provide a process which enables the production of yarns having high interfilament cohesion, and more

especially such yarns containing a high number of filaments.

2.2 The solution which is proposed consists in adopting the following steps:

(1) drawing the yarns in a warm liquid;

(b) submitting the yarns separately to an interlacing treatment using a fluid jet;

(c) performing the interlacing treatment immediately after the drawing step while the yarns are still wet from the drawing step; and

(d) subjecting the yarns to the sizing treatment immediately after the interlacing treatment.

2.3 Document D2 deals with a process for preparing a warp beam made of yarns of the same category which have to be drawn before being wound. The purpose of this process which comprises an interlacing step (see document D2, column 2, lines 17 to 21) is to prepare a warp, not for a weaving loom but apparently for a warp knitting machine because the step of sizing is replaced by one wherein oil is applied to the yarns (see document D2, column 4, lines 40 to 46).

Document D2 belongs to a technical field which is different from the one concerned by the invention but which faces problems which are the same as those concerned by the present invention.

The skilled person having to solve the problem set out above had to look in the neighbouring field to which D2

belongs in order to see if a solution had already been found.

As there is no substantial difference in preparing the same kind of yarns (partially oriented polyester yarns, abbreviated to POY) for weaving or for warp knitting, and as in both cases the yarns have to show the same increased resistance and preferably a good cohesion between the filaments composing the individual yarns, the skilled person could immediately observe that the step of submitting all the yarns simultaneously to an interlacing step such as the one which is described in document D2 could be advantageously applied to the process according to document D1.

Therefore, step (b) cannot be considered as inventive per se.

2.4 As regards step (c), the following is observed:

After having adopted step (b) the skilled person would have to determine at which stage of the process according to document D1 it would be suitable to dispose the interlacing means.

It is known that subjecting the yarns to a drawing step after the interlacing step would destroy the interlacing effect. It is also obvious that such an interlacing treatment would be useless if applied after the filaments have been cohered together by the dried size and that liquid size would obstruct the fluid-jet interlacing means if said interlacing were to occur when the yarns are wetted by the sizing agent. The skilled person could then only conclude that the only possible location for the interlacing means is between the drawing means and the sizing means.

However, as indicated above, according to the continuous process disclosed in document D1, the two steps of drawing and sizing are executed simultaneously. Therefore, a combination of the teaching of documents D1 and D2 does not lead to the invention.

The skilled person could, of course, considering that the combination of the teaching of documents D1 and D2 was not possible, try to combine the teaching of the document D2 with the prior art cited in document D1. However, such prior art is a discontinuous process according to which the yarns are wound on creels after been drawn. Therefore, the combination of these two teachings would encourage the skilled person to revert to a discontinuous process leading him away from the invention.

Moreover, although it is known from document D16 (column 15, lines 65 to 75) that it is advantageous to spray a liquid on the yarns before leading them through a jet intermingling apparatus, it cannot be considered as being obvious for the skilled person to arrive at the idea of omitting the drying step which should normally be necessary after the drawing in a warm liquid containing vat before the yarns are wound on creels. Therefore, even if the skilled person were to have come to the idea of applying the teaching of document D16 in combination with the above mentioned teachings, he would not have been led to the solution of the invention claimed in the patent in suit which omits the winding step.

It should be noted that performing the interlacing in such conditions permits saving the costs of a drying step and avoids that the liquid contained in the vat (wherein the drawing takes place) be transferred by the yarns into the vat containing the sizing agent.

Therefore, the combined steps according to Claim 1 of the patent in suit, although all these steps considered independently are either not new or not inventive per se, are not obvious in view of the cited prior art.

2.5 The processes which are the subject-matter of appended Claims 2 and 3 consist in preferred embodiments of the process of Claim 1 and are therefore also inventive.

3. Since no other objections have been raised against the amended claims which the Board considers as satisfying the other provisions of the EPC, the patent can therefore be maintained in an amended form.

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 maintain the patent on the basis of Claims 1 to 3 filed with the Statement of Grounds on 31 January 1991 and the description of the patent as granted.

The Registrar: The Chairman:

A. Townend C. Payraudeau