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Aktenzeichen / Case Number / N^o du recours : T 308/87 - 3.2.1

Anmeldenummer / Filing No / N^o de la demande : 81 107 262.8

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Bezeichnung der Erfindung: Yarn finish applicator and method for applying
Title of invention: finish to a continuous filament yarn
Titre de l'invention :

Klassifikation / Classification / Classement : D06B 1/08

ENTSCHEIDUNG / DECISION

vom / of / du 26 January 1989

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

E.I. DU PONT DE NEMOURS & CO.

Einsprechender / Opponent / Opposant :

Hoechst AG

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Articles 56, 114(2)

Schlagwort / Keyword / Mot clé :

"Inventive step" -
"Late submission of prior art, assessed as
non-relevant"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

European Patent
Office

Office européen
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 308/87



D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 26 January 1989

Appellant :
(Opponent)

HOECHST AG
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Representative :

-

Respondent :
(Proprietor of the patent)

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Decision under appeal :

Interlocutory Decision of the Opposition Division
the European Patent Office dated 2 June 1987
concerning maintenance of European patent No. 48 018
in amended form.

Composition of the Board :

Chairman : P. Delbecque

Members : M. Huttner

F. Benussi

Summary of Facts and Submissions

- I. European patent No. 0 048 018 incorporating five claims was granted on 18 July 1984 on the basis of European patent application No. 81 107 262.8, filed on 15 September 1981 and claiming a priority from an earlier US application of 15 September 1980.

- II. The Appellant (Opponent) filed an opposition to the grant of the European patent on 17 April 1985 requesting its revocation on the grounds of lack of novelty and inventive step. The following prior art document was cited for the first time:

DE-U-7 442 133.

- III. By its decision of 2 June 1987 the Opposition Division maintained the patent in amended form with independent Claims 1 and 5.

- IV. The decision to maintain the patent as amended was based on the argument that the subject-matter claimed is novel with respect to the DE-U-7 442 133 in that, in contrast, the yarn finish applicator according to the patent in suit provides a body member having a slot with side walls that taper toward each other from the top to the bottom of the slot. Further, the objection of lack of inventive step made by the Opponent was refused in view of the fact that there was no indication in any of the citations - both of the examination and of the opposition procedure - to solve the problem underlying the invention by that particular feature. Likewise, the method claimed in Claim 5 defining the idea of confining the initially splayed filaments for obtaining a fully wiped bottom surface was held novel and inventive.

- V. On 31 July 1987 the appellant filed an appeal against this decision and paid the appropriate fee. A statement of grounds for appeal was received on 19 September 1987 in which he maintained the position that the slot, as depicted in the drawings of the DE-U citation, would likewise continuously narrow from the top of the body member towards its lower end. He further asserted that front and lower back portion surfaces of the body member forming a wedge exist edge to perform the function of a drip point are also revealed by the citation in spite of an obtuse angled edge. Modifying said surfaces to form an acute angle would be obvious to the skilled person.
- VI. The respondent argued that the wedge-like slot known from DE-U-7 442 133 is provided with two side walls with an interposed smooth rounded bottom of small equal radius extending along a rounded or parabolic path leading from the top to the bottom of the applicator and no tapering of the side walls from the top to the bottom of the slot is discernible. Furthermore, on account of this configuration no splaying of the filaments but rather clustering to a bundle would occur. In addition, they assert that proper wiping off of the excess finish would present a problem when the filaments leave the slot above its lower end. In this case, a considerable part of the finish adheres to the applicator and eventually drops off at the end of the slot.
- VII. The appellant requested that the decision under appeal be set aside and that the patent be revoked, whereas the respondent on the other hand requested that the appeal be dismissed and the patent be maintained on the basis of the description, figures and claims accepted by the Opposition Division.

Both parties requested the appointment of oral proceedings conditional on the Board of Appeals not intending to decide in their favour.

VIII. For the preparation of oral proceedings the Board issued a communication pursuant to R.Pr.B.A. Art. 11(2) primarily raising queries as to the proper formulation of the acknowledgement of the pertinent prior art and of the claims as well as to the interpretation of the closest prior art by the appellant.

IX. In reaction to this communication the respondent filed new Claims 1, 2 and 5 as a main request together with a revised acknowledgement of the prior art. In addition, a first auxiliary request with a new Claim 1 was filed leaving the Claims 2 to 5 in accordance with the main request, and accompanied with a second auxiliary request with a new Claim 1, the Claims 2 to 5 likewise remaining according to the main request.

The appellant on the other hand submitted a pamphlet of Rauschert GmbH allegedly distributed to their customers immediately after having them received from the printing press and thus still prior to the effective filing date. They assert it discloses an applicator having a slot with a flat bottom wall and a defined drop off edge for surplus finish.

X. Very shortly before the date of the oral proceedings, the appellant introduced a further prior art document DE-U-79 04 819 which purportedly they found just a few days before the oral proceedings and deemed particularly relevant to the last feature of Claim 1 of auxiliary request 2.

XI. At the opening of the oral proceedings held on 26 January 1989 the respondent requested leave to withdraw the main and auxiliary requests referred to above and to submit a new set of Claims 1 to 5 wherein formal changes were introduced in Claim 1 of the patent as maintained to bring the definition of the slot by the side walls into conformity with that of the passage at column 2, lines 45-50 of the description. They requested that the proceedings be conducted on the basis of these new claims. In the course of the proceedings a functional statement was added at the end of Claim 1 to the effect that the progressively narrower bottom wall forces some of the filaments to form additional layers.

XII. Claim 1 of the main request reads as follows:

A yarn finish applicator that includes a body member (10) having top (12), opposed side (14, 16) and front (18) and back (22) surfaces and a slot (20) in the front surface (18) running from top to bottom, said slot (20) having a bottom wall (28) and side walls (24, 26) which are tapered inwardly toward each other as they approach the bottom wall of the slot and a passage (30) connecting the back surface (22) of the body member (10) to the bottom wall (28) of the slot for supplying finish to said slot, characterized

in that said front (18) and the lower portion back (22a) surfaces are angled downwardly toward each other to form a sharp wedge exit edge (17) with the bottom wall (28) of the slot, the sharp wedge exit edge being defined at the sides by said opposed side surfaces (14, 16) tapering downwardly toward each other and

in that the side walls (24, 26) of said slot are tapered toward each other from top to bottom of the body member so

that the bottom wall (28) is progressively narrower in the direction of the travel of the yarn in order to force some of the filaments to form additional layers of filaments.

Claim 1 of the first auxiliary request (motion 1) differs only by the indication of the implantation of the orifice of the supply passage and of the initial contact of the yarn at said orifice.

Claim 1 of the second auxiliary request (motion 2) differs from the above Claim 1 merely by the addition of specific wording as to the bottom wall being slightly larger than the sum of the individual filament diameters at said orifice and slightly less at the exit edge from which the filaments are led tangentially.

In accordance with main and auxiliary requests, the independent Claim 5 reads as follows:

A method for applying finish to continuous filament yarn (11) passing through a slot (20) in an applicator wherein finish is supplied to said slot (20) through an orifice (passage 30) in the bottom wall (28) of the slot (20), and

the filaments are led tangentially from the exit edge (17) of the bottom wall (28) of the slot (20), characterized

in that the yarn initially contacts the bottom wall (28) at the orifice and

in that yarn contact is maintained with the bottom wall (28) of the slot (20) while splaying the filaments as a single layer from about 60 to 90 percent of the width of said slot (20) at said orifice so that there is a small

space between the individual filaments which permits finish liquid to contact each filament, then confining the filaments and forcing some of the filaments to form additional layers of filaments near the exit of the slot (20).

This Claim 5 differs from the one granted by the insertion of the feature of initial yarn contact with the bottom wall at the orifice.

XIII. For the text of the claims and description of the granted patent and the application as originally filed, reference should be made to the publication EP-B-0 048 018 and EP-A respectively.

Reasons for the Decision

1. The appeal complies with Articles 106 and 108 and Rule 64 EPC and is therefore admissible.
2. There is no formal objection to the amendments introduced in the description.
 - 2.1 The passage in lines 8 to 11 of the first paragraph in column 3 of the description, in particular the term "preferably", implies that there may as well be an exit width of the slot exceeding the sum of the diameters of the individual filaments in said slot, which is in total contrast to the overall teachings of the patent in suit aiming at a fully wiped bottom surface. However, only a slot whose width at the exit remains less than the said sum allows the accomplishment of that aim. Therefore, the term "preferably" would traverse such interpretation and thus deletion of the term is expedient to clarification.

2.2 No objection is raised by the Board with respect to the amendments of the first paragraph of column 3, lines 16 and 17 because the wording as granted could lead to the misinterpretation that the confinement of the bundle by the slot inevitably leads to at least one additional layer likewise covering the entire width. This, however, would only occur if the sum of the filament diameters would equal or exceed the two-fold width of the slot, which is hardly feasible. Only some of the filaments may form additional layers, as exemplified in Figure 6. Thus the amendments serve better clarity and meet with the Board's approval.

2.3 There is no formal objection to the claims of either the main or the auxiliary requests. Claim 1 of each request is entirely within the scope of Claim 1 of the patent as maintained, which is itself fully supported by the original description, as are the appendent Claims 2-4 and method Claim 5. The further specification of the sharp wedge exit edge as being defined at the sides by the opposite side surfaces (14, 16), is supported by lines 49 and 50 of column 2. Further, the addition of the feature of a progressively narrower bottom wall finds its basis at lines 11 and 12 of column 3.

Concerning the added functional statement of forcing some filaments to form additional layers, reference is made to paragraph 2.2 above on that item. The introduction of such statement therefore is not objectionable.

2.4 In Claim 5 the added feature of initial yarn contact at the orifice is referred to in the penultimate line of column 2.

2.5 The Board sees also no extension of scope of Claim 4 by merely limiting the appendence to Claim 1 instead of any of the preceding claims.

2.6 Consequently, regarding the amendments effected in the description and the claims, the Board comes to the conclusion that these amendments do not extend the subject-matter beyond the content of the application as filed nor is the protection conferred extended.

For all these reasons, no objection arises under Article 123(2) or (3) EPC.

3. Weighing the disadvantage of a delay in the proceedings by referring the case back to the first instance against the relevance of the document DE-U-7 904 819, not submitted in due time, the Board decided to assess same of its own motion. Due to the brevity of this new citation, it took only a short time and no particular effort to grasp its substance and to determine its non-relevance to the decision. Thus the Board, in exercising the discretion allowed by Article 114(2) EPC, decided to disregard that document.

4. The undated Rauschert pamphlet entitled "Rapal-Fadenführer" was submitted by the appellant as a consequence of the communication issued by the rapporteur in preparation of the oral proceedings. It discloses a flat bottom wall allowing initial splaying of the filaments apart from a distinct drop off edge. This citation had to be disregarded by the Board on account of failure on the part of the appellant to establish beyond any doubt the date at which the pamphlet had been distributed to third parties.

The mere fact that the authors of the pamphlet have confirmed the date of the printer's delivery of the commissioned pamphlet followed by the statement of immediate delivery to customers does not meet the stringent requirements that must be applied by the Board for the categoric determination of a publication date. The appellant has not made any attempt to remove any possible shadow of doubt as to the publication date. Where such doubt persists, it must be resolved in favour of the patent proprietor. Consequently, the Board must give them the benefit of doubt and the assessment of the document in question must be refused.

5. As the novelty of the Claims 1 and 5 is not disputed by the appellant, it is deemed unnecessary to justify the conclusion in detail that the subject-matter of these claims and thus of the appendent Claims 2 to 4 are novel.
6. The matter now to be determined is thus whether the applicator according to Claim 1 of either request and the method of applying finish to a continuous filament yarn according to Claim 5 involves an inventive step.
 - 6.1 The prior art still considered as most pertinent, to wit DE-U-7 442 133, discloses a yarn finish applicator in which the bottom of the slot is formed convex. The yarn initially contacts the slot down-stream of the finish supply orifice and maintains such contact, a relatively short distance only, thus leaving the applicator above the drip point. Rendering such applicator suitable for achieving a uniform application of finish to a continuous filament yarn in a virtually dripless manner, is effectively the problem to be solved by the invention.

- 6.2 According to the teaching of the patent in suit, this problem is solved by the features set forth in the characterising clause of Claim 1 of the main request.
- 6.3 The main idea on which the invention is based resides in an applicator whose slot narrows from the top to the bottom in order to ultimately confine the initially splayed filaments of a filament bundle to one layer, whereby the mutually adjacent filaments of which maintain contact with the entire width of the bottom wall whereas some surplus filaments form additional layers. The latter occurs due to the steadily decreasing width of the bottom wall narrowing at a location upstream the wedge exit edge to the extent where no longer all the filaments now adjoining each other can be accommodated on the bottom wall.
- 6.4 The Board cannot share the contentions of the appellant that the teachings of the DE-U-7 442 133 taken singly would lead the skilled person towards the invention in that it equally reveals slot side walls actually narrowly steadily to the bottom of the applicator's body. The undeniable fact remains that the cross-section of the convex bottom of the citation's sliding surface remains substantially unchanged over most of its length because at its upper end the increased flaring of its side walls in no way affects the adjacent rounded bottom; this flare evidently serving to facilitate threading (vide Claim 2 and last lines of page 2 of the citation).

In view of the fact that the problem of this citation inter alia seeks to overcome the disadvantage of yarn damage at the finish supply orifice and the solution for attaining this end resides in the rounded or parabolic configuration of the slide way path, thus enabling the requisite positioning of that orifice upstream of the yarn

contact zone, neither this problem nor the solution have any bearing on the specific design of the slot. Hence, no convincing relevant documentary evidence corroborating the allegation of progressively narrowing side walls can be deduced.

Furthermore, a convex ground surface of the slide way would militate against the development of an initial splaying effect on the filaments and enhance premature squeezing together. Furthermore, as pointed out by the appellant, the finish discharged from the supply orifice is not prevented from wide lateral spreading because in the absence of a distinct bottom wall created by appropriately approaching tapering side walls, no laterally defined channel can exist. This, however, gives cause to a detrimental finish concentration at the zone adjacent the edges of the squeezed strand as it advances further, which certainly runs counter to uniform finish distribution within the filamentary strand. Thus no hint or indication to effectively solve the specific problem faced by the invention in the manner claimed emerges from the citation in question.

- 6.5 Even if the appellant would have succeeded in establishing the appropriate earlier publication date of the Rauschert pamphlet, the Board would not have been inclined to consider this citation as detrimental to inventive step due to the disclosure of a long section of parallel side walls followed by renewed widening of the bottom wall towards the exit edge. The assertion of the respondent (patentee) that this would inevitably entail non-uniform finish application - due to incomplete wiping prone to developing drops - could not be refuted by the appellant at the proceedings.

- 6.6 From the foregoing considerations, the Board holds that none of the teachings of any of the documents bearing an established published date and discussed above, nor the consideration of them combined, would direct the skilled person to the salient feature of progressively narrower side walls of the applicator according to Claim 1 of the main request. Hence, the subject-matter of this claim is not obvious and involves an inventive step, thus fulfilling the requirements of Article 56 EPC.
- 6.7 The same applies to the method Claim 5 of the main request since none of the relevant citations disclose initial contact with the bottom wall at the orifice while splaying the filaments as a single layer at that location. Nor can a subsequent splaying of about 60 to 90% of the width of the slot followed by confining the filaments to less than that width be gathered from these citations. Thus obviousness must be ruled out.

Consequently, the subject-matter of Claim 5 likewise involves an inventive step within the meaning of Article 56 EPC.

- 6.8 Claims 2 and 3 concern particular embodiments of the applicator according to Claim 1 and are thus not open to objection.

Claim 4, made appendent to Claim 1 only, likewise can be maintained in such form.

7. In view of the maintenance of the Claims 1 to 5 of the main request, there is no longer any need to deal with the first and second auxiliary requests.

Order

For these reasons, it is decided that:

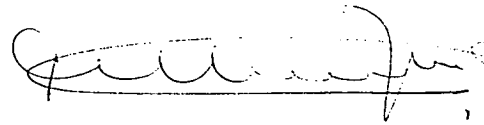
1. The appeal is dismissed.
2. The case is remitted to the first instance in order to maintain the patent in the form submitted during the oral proceedings and with the original drawings.

The Registrar:

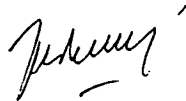


S. Fabiani

The Chairman:



P. Delbecque



- acc G. Hullner.