

Veröffentlichung im Amtsblatt	J/Nein
Publication in the Official Journal	Yes/No
Publication au Journal Officiel	Oui/Non

Aktenzeichen / Case Number / N° du recours : T 137/87
Anmeldenummer / Filing No / N° de la demande : 81 300 664.0
Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 037 629

Bezeichnung der Erfindung: Production of knitted garments
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : D04B 1/24

ENTSCHEIDUNG / DECISION
vom / of / du 26 February 1990

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Pex Limited

Einsprechender / Opponent / Opposant :

01 Bleyle KG
02 Gebrüder Mey oHG
03 Schiesser AG

Stichwort / Headword / Référence :

EPU / EPC / CBE Article 56 EPC

Schlagwort / Keyword / Mot clé : "Inventive Step (yes)"

Leitsatz / Headnote / Sommaire



Case Number : T 137/87 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 26 February 1990

Appellant :
(Opponent 02)

Gebrüder Mey oHG
Hohe Wiesenstr. 3
D-7470 Albstadt 15

Appellant :
(Opponent 03)

Schiesser AG
Schutzenstr. 18
D-7760 Radolfzell

Representative :

Sandmann, Joachim, Dr.
Hirtenstrasse 19
D-8012 Ottobrunn

Respondent :
(Proprietor of the patent)

Pex Limited
West Bridge
Leicester LE3 5NR (GB)

Representative :

Spoor, Brian
c/o E.N. LEWIS & TAYLOR
144 New Walk
Leicester, LE1 7JA

Party to the proceedings :
(Opponent 01)

Bleyle KG
Rotebühlstr. 120
D-7000 Stuttgart 1

Representative :

Sandmann, Joachim Dr.
Hirtenstrasse 19
D-8012 Ottobrunn

Decision under appeal :

Decision of the Opposition Division of the European
Patent Office dated 24 February 1987 rejecting
the opposition filed against European patent
No. 0 037 629 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : F. Gumbel

Members : C.T. Wilson

F. Benussi

Summary of Facts and Submissions

- I. European patent No. 37 629 was granted on 19 June 1985 on the basis of seven claims in response to European patent application No. 81 300 664.0 filed on 18 February 1981. Claim 1 reads as follows:

"A method of producing a knitted garment, comprising the steps of:

- (a) knitting on a circular knitting machine a seamless tube composed of a succession of integrally joined tubular blanks;
- (b) during step (a) knitting at one end of each tubular blank an integrally knitted welt or selvedge and a draw thread construction which separates the welt or selvedge from the end of an adjacent tubular blank;
- (c) separating adjacent tubular blanks from each other by means of said draw thread construction;
- (d) flattening each tubular blank;
- (e) shaping the opposite end of each tubular blank at least partially while the blank is flattened to form two identical and superimposed portions;
- (f) refolding each tubular blank so that longitudinal centre lines thereof become side edges of the blank; and
- (g) joining together a pair of edge parts which were previously on the same one of said superimposed portions, characterised in that the draw thread

construction knitted in step (b) is composed of a first course of water- or steam-soluble draw thread, at least one intermediate course of waste yarn and a second course of water- or steam-soluble draw thread, and in that step (c) is performed by subjecting said tubular blanks to a steam treatment.

- II. On 17 March 1986 joint notice of opposition was given by three firms, Bleyle KG, Gebrüder Mey and Schiesser AG. The opponents requested revocation of the patent on the grounds of lack of a patentable invention according to Articles 52 to 57 EPC. Three new documents, namely:

US-A-3 945 096

DE-B-2 653 227

DE-A-1 435 917

were introduced into the proceedings.

- III. The Opposition Division rejected the opposition in a decision dated 24 February 1987. According to this decision, the subject-matter of Claim 1 would not be obvious from the citations, taken singly or together, relied on by the opponents.

- IV. On 21 April 1987, two of the opponent firms, Gebrüder Mey and Schiesser AG, appealed - in a joint appeal - against this decision, paying the appropriate fee and requesting revocation of the patent. In the Statement of Grounds of Appeal, filed on 23 June 1987, the following arguments were submitted:

- (i) If, as accepted by the Opposition Division in its decision, it would be obvious to the person skilled in the art to use water- or steam-soluble draw threads in the arrangements of US-A-3 945 096, since

the use of such threads is known per se from DE-B-2 653 227, and the use of such threads in the method of the US document is merely the substitution of a well known equivalent, the only feature of the claim which could possibly be considered to be inventive would be the provision of the intermediate course of waste yarn.

- (ii) It is not, however, clear that, or how, the provision of this course reduces the amount of residual draw thread material which is deposited on the blanks (see patent, column 1, line 62 to column 2, line 2) particularly when no properties of the waste yarn are given. This problem is, however, virtually completely solved in the method described in US-A-3 945 096.

The problem to be solved by the present invention as set out in column 1, lines 46 to 49 of the patent, moreover, bears no relation to the provision of the waste yarn.

- (iii) It is not, therefore, surprising that the prior art does not describe this feature as such. However, the person skilled in the art is taught from GB-A-1 187 022 to provide two courses of draw thread separated by a portion of fabric which can be removed to shorten the knitted fabric or a garment. It is emphasised that in Claim 1 of the present patent it is not specified that the waste yarn must differ from the yarn of the tubular blanks.

- (iv) In summary therefore, the two features which separate the present alleged invention from the disclosure of US-A-3 945 096 (incorrectly referred to in the Statement of Grounds as US-A-2 945 096),

namely the provision of the waste yarn and the use of steam to dissolve the draw threads, do not constitute a patentable invention.

- (v) Moreover, Claim 1 is not in the correct two-part form, the problem to be solved by the invention as set out in the patent has nothing to do with the invention as seen by the Opposition Division, and the most relevant prior art has not been acknowledged in the patent.

It is appreciated that the Opposition Division could not itself make any amendments and that the Patentee chose to take no part in the opposition proceedings. However, rather than maintain the patent unamended, the Opposition Division should have revoked it under Article 102 EPC.

- (vi) The opponents were not given sufficient opportunity to present their comments before the contested decision was issued, Article 113 EPC. In particular, the Opposition Division have presented the invention for the first time in their decision in a different manner in respect of problem and solution from that in which it is presented in the patent.

V. In a letter received on 30 September 1987, the Respondent (Patentee) stated that no responsive comments would be filed.

VI. In reply to a communication from the Board, dated 12 May 1989, in which the Board expressed its provisional opinion agreeing essentially with the contested decision, the Appellant expressed the opinion that the use of waste yarn between two draw threads is the obvious way of reconciling the two apparently conflicting desiderata

referred to in column 3, lines 53 to 60 of US-A-3 945 096, namely the need for as large a space as possible between adjacent blanks, e.g. for better access to hot air, and the need to restrict the space to avoid excess residue.

Reasons for the Decision

1. The appeal is admissible.
2. The invention relates to the production of knitted garments by a method of the type disclosed for example in FR-A-2 281 729. This known method comprises the following steps:
 - (1) knitting on a circular knitting machine a seamless tube composed of a succession of integrally joined tubular blanks;
 - (2) separating adjacent ones of the tubular blanks from one another;
 - (3) flattening each tubular blank;
 - (4) shaping one end of each blank at least partially while the blank is flattened to form two identical and superimposed portions;
 - (5) refolding each tubular blank so that longitudinal centre lines thereof become side edges of the blank; and
 - (6) joining together a pair of edge parts which were previously on the same one of said superimposed portions.

In this method, adjacent blanks are separated in step (2) by a labour intensive cutting operation.

A garment produced in this manner must still be hemmed at the waist, even though side seaming is avoided, and therefore, according to the patent, the overall make-up of the garment is complicated. Wearer comfort is also reduced.

3. According to the patent therefore,

"It is an object of the present invention to provide a draw thread construction in a method of the above-described type which is particularly convenient to use."

4. This object is achieved by the present invention by providing such a method wherein the draw thread construction is composed of a first course of water- or steam-soluble draw thread, at least one intermediate course of waste yarn, and a second course of water- or steam-soluble draw thread, and wherein adjacent ones of the tubular blanks are separated from one another by subjecting the blanks to a steam treatment.
5. In this way, the blanks can be separated at the same time as they are subjected to steam treatment to press and relax them, thereby further reducing the number of finishing operations required. The provision of the intermediate course or courses of waste yarn in the draw thread construction reduces the amount of residual draw thread material which is deposited on the blanks during the steam treatment operation.
6. An examination of the revealed prior art shows that none of them discloses a method as set out in Claim 1. The subject-matter of the claim is therefore new and since this has never been questioned by the Appellants, no further explanation will be given here.

7. It remains therefore to be examined whether the subject-matter of Claim 1 involves an inventive step and the question now arises whether the publications cited would give the person skilled in the art any indication to provide the known method with a draw thread construction which is particularly convenient to use.

7.1 As acknowledged in the patent, (column 1, lines 35-45) it would be possible in principle partially to avoid the problem of needing to provide the garment produced according to FR-A-2 281 729 with a hem at the waist by integrally knitting at an end of each blank (i.e. the opposite end to that which is shaped in step (4)) a welt or selvedge, and by connecting this welt or selvedge to the adjacent blank by a draw thread construction, for example of the type disclosed in US-A-2 942 443. However, it would still be necessary to separate adjacent tubular blanks from one another by a labour-intensive cutting operation.

7.2 The main document relied on by the Appellants, namely US-A-3 945 096, discloses a method of producing knitted garment portions comprising the steps of:

- (i) knitting on a standard knitting machine a succession of integrally joined blanks;
- (ii) during step (i) knitting at the end of each blank an integrally knitted welt or selvedge and a draw thread construction which separates the welt or selvedge from the end of an adjacent blank; and
- (iii) separating adjacent blanks from each other by means of said draw thread construction.

There is, however, no explicit reference to tubular blanks, nor to any other of the steps (d) to (g) of Claim 1.

In particular, whereas references are made in the citation to the production of shirt "collars" and "cuffs", (see column 1, lines 16 to 30), such articles are not necessarily "tubular", so that explicit references to tubular blanks and to the features (d) to (g) of the prior art part of Claim 1 are missing from this citation. The Board agrees with the Opposition Division, however, that these features in themselves are known for example from FR-A-2 281 729 and cannot be relied upon by the Respondent to support an inventive step in the subject-matter of Claim 1.

Moreover, the characterising features of Claim 1 are also missing. It is admitted that reference is made in the citation to known methods using water-soluble draw threads, or threads soluble in other solvents. However, these are then rejected, since according to these known methods the web of garment portions is passed through heated (e.g. boiling) water or other solvent to dissolve the thread, and this then necessitates an additional step of drying the garment portions. Instead, it is proposed to use a draw thread made of a material which deteriorates in the presence of heat. The web passes through an oven where it is subjected to a continuous blast of air, directed at an oblique angle to initially impinge on the upstream or trailing finished edge of the garment portion so as to leave the residue of the draw thread on the unfinished edge of the succeeding garment portion.

Clearly therefore, in this citation, it is suggested that a blast of hot air can be used both to melt the draw thread and to clear all residue of draw thread from the trailing, finished edge of each garment portion. There is no suggestion to use water- or steam-soluble draw thread with steam and with intermediate waste yarn.

7.3 It has been argued that it would be obvious to use water- or steam-soluble draw threads since these are known per se from document DE-B-2 653 227. Indeed, reference is made in this document to the method disclosed in US-A-3 945 096 (incorrectly referred to as US-A-3 945 046). In the inventive method of DE-B-2 653 227 single draw or separating threads of steam-soluble material are used to connect the portions in a web of garment portions. The threads are melted in a pre-steam area and an adjacent, but spaced, main steam area, separation of the portions being effected by moving the web faster in the main area than in the pre-steam area. By using two steam areas the threads may be practically completely melted, leaving virtually no residue. Again, no reference is made to the use of intermediate waste yarn, so that this feature of the present Claim 1 is still not disclosed.

7.4 It has also been argued that the use of waste yarn between draw threads is known from GB-A-1 187 022. However, the invention of GB-A-1 187 022 concerns the provision of a length of knitted fabric or a garment which can be shortened if required by removing (by fracturing and withdrawing, or otherwise) a portion or portions of the fabric. According to that patent, (page 1, lines 60-75):

"Fabric may be provided in which the draw threads are at relatively closely spaced intervals and at regular positions throughout the length of the fabric. Thus parting of any one of a succession of relatively narrow strips from the adjoining fabric can be effected as and when required leaving a selvedge on the remaining fabric, thereby greatly increasing the scope of variation of the length of a piece of fabric or of a garment formed from such fabric. Moreover, variation of length can be effected in short steps or longer steps as desired according to the position at which the draw threads are removed."

In the opinion of the Board, it can only be by ex-post facto analysis that one could consider that the person skilled in the art would apply the teaching of this document to the method disclosed in US-A-3 945 096 or DE-B-2 653 227. The problems to be solved are completely different.

Therefore, the subject-matter of Claim 1 involves an inventive step, and the claim is allowable.

8. The arguments of the Appellants are not persuasive.

- (i) The Appellants do not see how the provision of waste yarn reduces the amount of residual draw thread material. However, if one wishes to separate the successive blanks by more than one or two courses, e.g. ten courses, for whatever reason, there will be less residue if one uses two courses of draw thread with eight courses of waste yarn (which will clearly not melt), than if one uses ten courses of draw thread. This problem is appreciated in US-A-3 945 096, column 3, lines 53-62, as pointed out by the Appellant. However, whilst the problem is appreciated, no solution is suggested there which would lead the man skilled in the art to use waste yarn.
- (ii) Less residue clearly makes the method more convenient, and therefore the solution does relate to the problem set out in the patent.
- (iii) The fact that other solutions have been found does not detract from the inventiveness of the present solution.
- (iv) Insufficient acknowledgement of prior art is not a ground of opposition.

9. Since Claim 1 is allowable, the dependent Claims 2 to 7, which relate to further embodiments of the invention, are also allowable.

Order

For these reasons, it is decided that:

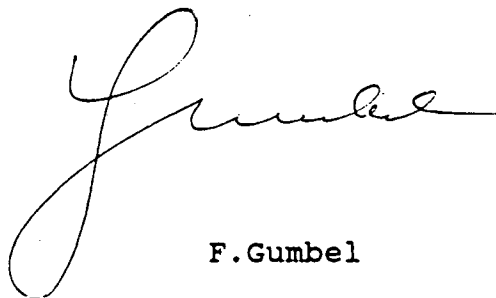
The appeal is dismissed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

