

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 29 September 1994

Case Number: T 0374/91 - 3.2.5

Application Number: 82105651.2

Publication Number: 0073313

IPC: D04H 3/10

Language of the proceedings: EN

Title of invention:

A stitch bonded fabric for reinforcing coated abrasive backings

Patentee:

NORTON COMPANY

Opponent:

Stora Feldmühle AG
Minnesota Mining and Manufacturing Company

Headword:

Relevant legal provisions:

EPC Art. 56, 108

Keyword:

"Admissibility of appeal (yes)"
"Inventive step (no)"

Decisions cited:

T 0145/88, T 0047/90, T 0611/90

Catchword:



Case Number: T 0374/91 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 29 September 1994

Appellant:
(Proprietor of the patent) NORTON COMPANY
1 New Bond Street
Worcester
Massachusetts 01606 (US)

Representative:
Diehl, Hermann O. Th., Dr.
Diehl & Glaeser, Hiltl & Partner
Patentanwälte
Postfach 19 03 65
D-80603 München (DE)

Respondent:
(Opponent) Stora Feldmühle AG
Patentabteilung
Postfach 10 04 63
D-41704 Viersen (DE)

Representative:

Respondent:
(Opponent) Minnesota Mining and Manufacturing Company
P. O. Box 33427
St. Paul, Minnesota 55133-3427 (US)

Representative:
Bowman, Paul Alan
LLOYD WISE, TREGEAR & CO.
Norman House
105-109 Strand
London WC2R 0AE (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office of 15 January 1991 with
written grounds posted on 12 March 1991 revoking
European patent No. 0 073 313 pursuant to
Article 102(1) EPC.

Composition of the Board:

Chairman: C. V. Payraudeau
Members: M. H. M. Liscourt
H. P. Ostertag

Summary of Facts and Submissions

- I. Two oppositions were filed against the European patent No. EP-B-0 073 313 (application n° 82 105 651.2).
- II. The Opposition Division revoked the patent, considering that neither of the independent Claims 1 and 9 of the patent as granted satisfied the requirements of Articles 52 and 56 EPC.
- III. The Appellant (Patentee) appealed against this decision and filed new results of tests intended to show that the characterising feature of Claim 1 according to which the cover factor of the fabric should be greater than 40.7% did bring an unexpected advantageous result (i.e. a greater than proportional increase in resistance of the fabric).
- IV. One of the Respondents (Opponent 2) contested in his answer the admissibility of the appeal on the ground that the statement of appeal did not give any argumentation contesting the validity of the decision under appeal. Moreover, the Respondent criticised the results of the test report arguing that they were not in the form of a sworn statement and therefore not admissible under Article 117 EPC.
- V. In a first communication, the Board expressed the preliminary opinion that it resulted clearly from the statement of grounds that the Appellant's submission was that the decision under appeal should be set aside on the ground that the stitch bonded fabrics according to Example 2 and 4 of the patent in suit presented unexpected advantages, as demonstrated by the test report, which supported the presence of an inventive step. The Board also considered that the EPC did not

require that test reports should be presented under the form of sworn statements. The appeal was therefore sufficiently substantiated and therefore admissible.

However, the Board contested the relevance of the test report in particular on the ground that the tests had been conducted with different parameters so that the influence of the variation of individual factors was not apparent to the Board.

VI. In answer to this communication, the Appellant filed details of a series of new tests which were considered at an oral proceedings held on the 29 September 1994, attended only by the Appellant, the Respondents having informed the Board that they would not be represented at these oral proceedings.

VII. Among the numerous documents cited during the opposition proceedings, only the following ones were considered as relevant in the appeal proceedings:

D2 Bahlo "New fabrics without weaving", pages 51-54.

D3 Obruzt "Coated abrasive belts get stronger backing"

D4 EP-A1-0 045 408

D7 US-A-4 035 961

D11 US-A-3 567 565

VIII. At the end of the oral proceedings, three requests were presented by the Appellant:

- main request: that the decision under appeal be set aside and that the patent be maintained as granted,

- first auxiliary request: that the patent be maintained in amended form on the basis of a first set of Claims 1 to 9 and a correspondingly amended description filed during the oral proceedings, or
- second auxiliary request: that the patent be maintained in amended form on the basis of a second set of Claims 1 to 8 and of a description to be correspondingly amended.

The Respondents had requested in writing before the date of the oral proceedings that the appeal be dismissed.

X. The independent claims read as follows:

Main request:

Claim 1:

" A stitch bonded fabric, comprising:

- (a) a warp yarn array;
- (b) a fill yarn array disposed on one side of said warp yarn array and
- (c) a plurality of stitch yarns, said stitch yarns being formed in loops around groups of individual yarn member of said warp and fill yarn arrays, whereby the two said yarn arrays are bonded together into a coherent fabric, characterised by the fact that the warp yarn array has a tensile strength of at least 30 dekanewtons per centimetre of fabric width;

the fill yarn array has a cover factor of greater than 40.7 percent; and

each stitching yarn has a tensile breaking strength of at least 0.5 dekanewtons."

Claim 9:

"A process for manufacturing a stitch bonded fabric comprising the steps of (a) holding a tensions fill yarn array between sets of hooks spaced along both sides of a warp yarn array and (b) moving said fill yarn array, by moving the sets of hooks whereon it is held, into a position where said fill yarn array can be bonded, substantially simultaneously across the entire width of the fabric, to said warp yarn array by loops formed by yarns distinct from the yarns of said fill and warp yarn arrays characterised by the fact that at least two yarns of said fill array are held on each hook of said sets of hooks."

Claim 10:

"A coated abrasive comprising an abrasive coating on a stitch-bonded fabric, characterised by the fact that said fabric is as defined in any one of Claims 1-8."

First auxiliary request

Claim 1:

This claim, instead of being directed to a stitch bonded fabric like Claim 1 according to the main request, is directed to:

" A coated abrasive belt comprising an abrasive coating on a stitch bonded fabric, comprising:.... " (the remaining features correspond to those of Claim 1 according to the main request).

Claim 9:

This claim reads as follows:

" Process for manufacturing a stitch bonded fabric for a coated abrasive belt according to any of claims 1 to 8, comprising..." (the remaining features correspond to those of Claim 9 according to the main request).

Second auxiliary request

Claim 1:

" A process for manufacturing a stitch bonded fabric having a warp yarn array;
a fill yarn array disposed on one side of said warp yarn array and
a plurality of stitch yarns, said stitch yarns being formed in loops around groups of individual yarn member of said warp and fill yarn arrays, whereby the two said yarn arrays are bonded together into a coherent fabric, comprising the steps of (a) holding a tensioned fill yarn array between sets of hooks spaced along both sides of a warp yarn array and (b) moving said fill yarn array, by moving the sets of hooks whereon it is held, into a position where said fill yarn array can be bonded, substantially simultaneously across the entire width of the fabric, to said warp yarn array by loops formed by yarns distinct from the yarns of said fill and warp yarn arrays characterised by the fact that at least two yarns of said fill array are held on each hook of said sets of hooks, whereby the warp yarn array has a tensile strength of at least 30 dekanewtons per centimetre of fabric width, the fill yarn array has a

cover factor greater than 40.7 percent and each stitching yarn has a tensile breaking strength of at least 0.5 dekanewtons."

Reasons for the Decision

1. The admissibility of the appeal has been contested by one of the Respondent on the ground that it did not meet the requirements of Article 108 EPC since the statement of grounds did not dispute the validity of the decision under appeal (see point IV above).

According to the constant jurisprudence of the Boards of Appeal, an appeal is only admissible if (the other conditions of the convention being of course satisfied) the statement of grounds states the legal or factual reasons why the contested decision should be set aside and the appeal allowed (decision T 145/88, OJ EPO 1991, 251).

It is thus sufficient for the appeal to be admissible that the Board of Appeal and the other parties should be able to recognise immediately the reasons why the appellant contests the validity of the decision under appeal even if the Appellant only presents a new line of argumentation without criticising that decision (decisions T 47/90, OJ EPO 1991, 486 and T 611/90 dated 21 February 1991).

In the present case, it is clear that the Appellant has not contested the validity of the reasons given in the contested decision but submitted that the stitch bonded fabrics according to the Examples 2 and 4 of the patent in suit presented unexpected advantages which supported the presence of an inventive step. Were the Board to

follow this argumentation, it would have to reverse the decision under appeal on this ground and the appeal is therefore sufficiently substantiated to be admissible.

2. *Main request*

2.1 Novelty

The novelty of the fabric according to Claim 1 of the granted patent has been recognised by the impugned decision and has not been in dispute during the appeal proceedings. The Board of Appeal has also established that none of the documents cited during the appeal proceedings describes a fabric comprising all the features recited in Claim 1.

It is to be noted that the document D4 discloses a coated abrasive sheet material which is provided with a backing formed of a stitch bonded fabric made on a "Malimo" machine. As indicated in the patent in suit (see Table 1 Example 1 page 5 of the printed patent), the fabric described in the document D4 has all the features of Claim 1 of the granted patent except that the cover factor is only 40.7%. This distinguishing feature gives therefore novelty to the subject-matter of Claim 1 with respect to this document D4.

The fabric which is the subject-matter of Claim 1 is therefore novel.

2.2 Inventive step

The document D4 is a European patent application having a filing date prior to the priority date of the patent in suit but which was published thereafter and is therefore a state of the art under Article 54(3) EPC

which is only to be considered for deciding on the novelty of the subject-matter of the claim. This document cannot therefore be taken into consideration for determining whether the subject-matter of Claim 1 involve an inventive step.

The nearest state of the art is thus the document D3 which discloses coated abrasives having a backing consisting of a stitch bonded fabric which show a better wear resistance than conventional woven fabrics. It has not been disputed by the Appellant that this fabric has the same features as the claimed fabric except that the cover factor is only 40.7%.

In the statement of grounds and in his further submissions, the Appellant has essentially argued that it was not obvious for the person skilled in the art that the use of a greater cover factor would entail unexpected advantages. Nothing in the state of the art pointed out in that direction. However, the results of the tests conducted by the Appellant showed that by using a higher cover factor a more than proportional increase in the wear resistance of the abrasive belts was clearly obtained.

However, the document D7 teaches that in woven backings for coated abrasives the "cover factor" should be high in order to avoid an undesirably open fabric permitting strike-through of the maker adhesive and a non-uniform grain layer. The person skilled in the art knowing of the document D3 would thus be encouraged by the teaching of the document D7 to try also using high cover factors with stitch bonded fabric to the same end. He would not be deterred from trying this solution by any teaching of the prior art. Therefore, the person

skilled in the art not only could but would try applying the teaching of document D7 to the stitch bonded fabrics of the document D3.

The test results filed by the Appellant with his letter dated 28 October 1993 show that a better wear resistance is obtained when the cover factor is high but the increase in wear resistance is in no way dramatic but corresponds to what the person skilled in the art would have normally expected from the increase in the cover factor. It is also to be noted that the value of the cover factor of greater than 40.7% was not indicated in the patent in suit as a critical value but was only specified to give novelty to the subject-matter of Claim 1 with respect to the prior European patent application (D4).

The improvements obtained by increasing the cover factor to a value greater than 40.7% according to Claim 1 was thus obvious for the skilled person. Therefore, the subject-matter of Claim 1 does not involve an inventive step and the main request cannot therefore be granted.

3. *First auxiliary request*

3.1 Admissibility of the claims

3.1.1 The claims according to this request correspond to the claims according to the main request with the difference that they are limited to a coated abrasive belt and a process for manufacturing such belts.

3.1.2 Such amendments are clear limitations with respect to the granted claims and are therefore allowable under Article 123(3) EPC. They are also allowable under

Article 123(2) EPC because the whole description deals with coated abrasive belts, so that the conditions of this Article are satisfied.

3.2 Novelty

Since the subject-matter of Claim 1 according to the main request is novel, the subject-matter of Claim 1 according to the first auxiliary request, which comprises all the feature of Claim 1 according to the main request, is also novel.

3.3 Inventive step

For considering the presence of an inventive step in the subject-matter of Claim 1, the skilled person to be referred is the person skilled in making abrasive products and not the textile specialist.

However, this skilled person is taught by document D3 (of which the title is "Coated abrasive belts") that it is advantageous to use a stitch bonded fabric as a backing for an abrasive belt. This skilled person wanting to improve the wear resistance of these belts would also refer to document D7 which teaches him to increase the cover factor to a related end.

Therefore, the coated abrasive belt according to Claim 1 of the first auxiliary request does not involve the required inventive step and does not satisfy, therefore, the conditions of Article 56 EPC and the first auxiliary request cannot be granted.

4. *Second auxiliary request*

4.1 Admissibility of the new set of claims

Claim 1 according to the present request is directed to a process for manufacturing a stitch bonded fabric and contains all the process features of the granted process Claim 9, but is limited to the making of the product which is the subject-matter of Claim 1 of the granted patent.

The conditions of Articles 123(2) and 123(3) are therefore satisfied.

4.2 Novelty

Since Claim 1 according to the present request contains all the features of Claim 1 according to the main request, the subject-matter of which is above considered novel, the method which is the subject-matter of Claim 1 of the second auxiliary request is also novel.

4.3 Inventive step

All the method steps necessary for manufacturing the product according to Claim 1 and 9 of the patent as granted are known from the document D3, in combination with document D2 which describes the well known "Malimo" machine, except concerning the step of inserting a plurality of fill yarns in each row of stitch yarns.

Document D11, which is a development of the "Malimo" technique described in D2, teaches the step of inserting several filling yarns in the successive

single rows of binding stitches, in order to increase the density of the produced fabric, that is to say its cover factor (see Figure 2 of document D11).

Therefore, the skilled person when wishing to improve the fabric disclosed in the document D3 by increasing its cover factor is taught by the document D11 to use to this end the step of holding at least two yarns of the fill array on each hook of the stitching machine. The process which is the subject-matter of Claim 1 of the second auxiliary request is thus obvious and does not satisfy the conditions of Article 56 EPC. Thus, the second auxiliary request of the Appellant cannot be granted.

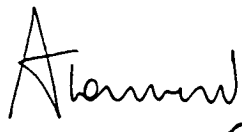
5. As none of the three requests of the Appellant satisfies the requirements of the EPC, the appeal cannot be allowed.

Order

For the above reasons it is decided that:

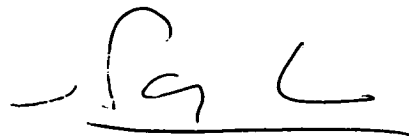
The appeal is dismissed.

The Registrar:



A. Townend

The Chairman:



C. Payraudeau