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D E C I S I O N
of 15 December 1999

Case Number: T 0320/97 - 3.2.2

Application Number: 89850035.0

Publication Number: 0342171

IPC: D21F 7/08

Language of the proceedings: EN

Title of invention:

Method for depositing particles and a binder system on a base fabric

Patentee:

ALBANY INTERNATIONAL CORP.

Opponent:

Thomas Josef Heimbach GmbH & Co.

Headword:

-

Relevant legal provisions:

EPC Art. 52, 56

Keyword:

"Inventive step (no)"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0320/97 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 15 December 1999

Appellant: Thomas Josef Heimbach GmbH & Co.
(Opponent) An Gut Nazareth 73
D-52353 Düren (DE)

Representative: Paul, Dieter-Alfred, Dipl.-Ing.
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Respondent: ALBANY INTERNATIONAL CORP.
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Representative: Karlström, Lennart
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 14 February 1997
rejecting the opposition filed against European
patent No. 0 342 171 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: W. D. Weiß
Members: D. Valle
J. C. M. De Preter

Summary of Facts and Submissions

I. On 14 March 1997 the appellant (opponent) lodged an appeal against the decision of the opposition division of 14 February 1997 to reject the opposition and paid the appeal fee on the same day. The statement containing the grounds of appeal was filed on 23 June 1997.

The opposition division held that the ground brought forward by the opponent (lack of inventive step) did not prejudice the maintenance of the patent unamended.

II. Thirteen documents were cited in opposition proceedings of which the following are relevant for the present decision:

D1: US-A-4 571 359

D4: Tetzlaff, "Stand der Technik in der
Schaumrüstung und Schaumbeschichtung",
Chemiefasern/Textilindustrie, December 1982,
pages 896 and 898 to 902

D6: EP-A-0 248 182

D10: US-A-3 042 573

III. Following a request of both parties, oral proceedings before the Board were held on 15 December 1999, at the end of which the requests of the parties were as follows:

The appellant (opponent) requested that the decision

under appeal be set aside and the patent be revoked.

The respondent (patentee) requested that the appeal be dismissed and that the patent be maintained unamended.

IV. Claim 1 as granted reads as follows:

"A method of manufacturing a composite wet-press felt fabric (8), which comprises:
providing a wet-press felt base fabric (1) of interwoven machine direction and cross-machine direction yarns;
depositing a homogeneous foam (3) of polymeric resin particles, binder material, and a solvent on a surface of the base fabric (1);
distributing the foam (3) on the surface of the base fabric (1) in a uniformly thick layer; and applying a heat treatment to the base fabric (1) to evaporate the solvent in the foam (3), to fuse the polymeric resin particles to each other and to the base fabric, and to cure the binder material."

V. The appellant argued essentially as follows:

The closest state of the art was represented by document D1 which originated from the patentee. This document disclosed a process for making felt fabric which comprised an even distribution of the particles, see column 3, lines 48 to 50, and a binding agent, see column 4, lines 4 to 10. Since the binding agent was applied as a liquid, see column 4, line 10, the use of a solvent was implied. The fact that the known process included a heat treatment to solidify the binding agent, see column 4, line 10, resulted in an

evaporation of the solvent.

The subject-matter of claim 1, therefore, differed from the disclosure of document D1 merely in that the foam technology was used to favour the uniform distribution of the resin particles supplied to the base fabric. A uniform distribution was however also aimed at by document D1, see column 3, lines 48 to 50.

A combination of the teaching of document D1 with that of document D4 lead directly to the invention. Document D4 disclosed all the possible applications of the foam technology. It disclosed in particular the option of achieving a uniform distribution (see page 902, at the beginning of the middle column) of a polymer dispersion (page 900, right column) on one side of the support (see title: Schaumbeschichtung and page 900, right column), by means of a blade (figures 4 and 6) and without pressing or sucking (page 898, right column, first paragraph). From this document the person skilled in the field would directly obtain the teaching of applying the foam technology by the method disclosed in document D1 and arrive at the claimed invention without any inventive skill being involved.

As an additional proof of the obviousness of the invention, document D10, Example 2 at column 4, showed that foam could also be used to uniformly distribute relatively big particles as rubber crumbs. Furthermore, document D6 showed that foam technology was known in the field of the invention, that is, paper-making machines.

V. The respondent argued as follows: None of the opposed

documents disclosed how to apply foam incorporating particulate material in order to have these particles deposited uniformly on the surface of a base fabric.

Document D4 was directed to saving evaporation energy by using a limited amount of liquid. The fact that the foam was disclosed as being pressed, calendered or sucked into the fabric did not suggest the teaching of the present invention because such techniques would prevent a uniformly thick layer of particles from being formed on the surface of the fabric, but would instead drive or suck the particles into the fabric.

Furthermore the particles disclosed in document D4 were small particles (pigment) employed to dye the substrate and not intended to remain on the surface of the substrate as in the invention.

Document D6 disclosed a needle felt used in paper-making machines incorporating entirely within its structure a plastic foam including particulate material. The open pore plastic foam of document D6 was different from that of the invention, because it was not used as a medium to deposit a uniform layer of particulate material like the invention but was an essential element of the final product.

Document D10 disclosed a foam with particles. Example 2 referred to an embodiment the foamed compound of which consisted of a butadiene methacrylate polymer to which was added a rubber crumb compound or, alternatively, polyvinyl chloride, cork or mica. Example 2, however, was silent about whether the particles were deposited on top of the foam or were mixed into the foam. The successive sucking resulted in the compound remaining

as a layer on the surface of the substrate. There was however no teaching in document D10 that the deposited crumb material formed a uniformly thick layer. On the contrary, the sucking action would produce a non-uniform layer. There was no evaporation of the foam. The primary purpose of the method according to document D10 was to impregnate the web. In contrast thereto, the sole purpose of the invention was to use the foam to deposit a uniform and even layer of insoluble particles on the base fabric so that they could be fused after the evaporation of the solvent. This feature was not disclosed by document D10.

Reasons for the Decision

1. The appeal is admissible.
2. *Inventive step*

Document D1 - which is acknowledged by both parties as representing the nearest prior art - discloses a method of manufacturing a composite wet-press felt fabric, which comprises providing a wet-press felt base fabric of interwoven machine direction and cross-machine direction yarns, depositing polymeric resin particles (column 3, line 40) and binder material (column 4, line 5) on a surface of the base fabric, and applying a heat treatment to the base fabric to fuse the polymeric resin particles to each other and to the base fabric (column 2, line 44), and to cure the binder material.

The binder material used according to document D1 may be applied as liquids, see description, column 1,

line 10, which implies the use of a solvent. Furthermore, the heat treatment used to cure the resin results in a prior evaporation of the solvent.

The subject-matter of claim 1, therefore, differs from the method disclosed in document D1 only in that the three constituents form a homogeneous foam which is distributed in a uniformly thick layer on the surface of the base fabric.

The declared object of the invention is to distribute the particles uniformly and evenly on the surface of the base fabric (column 2, line 51, to column 3, line 6). This object is known from document D1 (column 3, lines 48 to 50).

Starting from document D1 as the closest prior art the problem to be solved is therefore to further improve the even distribution of the particles on the surface of the base fabric.

To this purpose, the person skilled in the art would take in consideration documents D4, D6 and D10.

Document D4, which is a review representing the state of the art in the foam technology in 1982, discloses in particular that the foam technology is suitably used to form a uniform layer on the surface of a fabric (see title: "Schaumbeschichtung"; page 898, right column, line 25 and line 11: "vorgewählte Schichtstärke"; page 902, middle column, first paragraph; and page 899, middle column, lines 14 to 24). Furthermore, document D4 does not exclude using solid particles in the foam; on the contrary, it discloses that the foam has a broad

range of applications because it is possible to produce several coating variations by varying the chemicals and the type of foamer (see page 896, left column, at the end of the second paragraph, and page 900, middle column, second paragraph). Moreover, document D4 (see page 900, right column, second full paragraph) teaches that the foam may be used to distribute a polymerdispersion, ie particulate material. Finally, document D4 (see page 848, right column, first paragraph) like the patent in suit, discloses the use of a rack to obtain a uniform layer on the surface of the fabric.

Document D6 shows that the use of foam technology was known in the field of the invention of paper-making machines.

Finally, document D10 shows that the foam technology is also suitable for distributing relatively big particles such as rubber crumbs (see Example 2 at column 4).

The person skilled in the art, starting from the teaching of document D1 and looking to improve the distribution of the particles on the base fabric, will be aware of the foam technology because it was already used in document D6, which concerns the same field of paper-making machines as the invention. He will further know from document D4, which gives the state of the art of the foam technology, that such technology is suitable to solve the problem of uniform distribution of particulate compositions like the invention, even with relatively big particles, as is proved by document D10. He will therefore be led to the invention as claimed without any inventive skill being involved in

this process.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked

The Registrar:

The Chairman:

S. Fabiani

W. D. Weiß