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D E C I S I O N
of 28 September 1995

Case Number: T 0496/92 - 3.2.5

Application Number: 85303022.9

Publication Number: 0160560

IPC: D04H 1/44

Language of the proceedings: EN

Title of invention:
Nonwoven surgical sponge with x-ray detectable element

Patentee:
Johnson & Johnson Products Inc.

Opponent:
Paul Hartmann Aktiengesellschaft

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0496/92 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 28 September 1995

Appellant: (Opponent)
Paul Hartmann Aktiengesellschaft
Paul-Hartmann-Straße
D-89522 Heidenheim (DE)

Representative:
Becker, Maria, Dipl.-Phys.
Postfach 70 01 47
D-70571 Stuttgart (DE)

Respondent: (Proprietor of the patent)
Johnson & Johnson Products Inc.
501 George Street
New Brunswick
New Jersey 08903 (US)

Representative:
Jones, Alan John
CARPMAELS & RANSFORD
43 Bloomsbury Square
London WC1A 2RA (GB)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office orally delivered on 12 March 1993 and posted on 6 April 1992 rejecting the opposition filed against European patent No. 0 160 560 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: C. V. Payraudeau
Members: W. D. Weiß
H. P. Ostertag

Summary of Facts and Submissions

I. Opposition was filed against the patent No. 0 160 560 as a whole and formally based on Article 100(a), 100(b) and 100 (c). Reasoned statements were, however, only submitted with respect to Article 100(a) EPC (lack of novelty and inventive step).

II. The wording of Claim 1 of the patent as granted reads as follows:

"1. A surgical sponge including an integral x-ray detectable element, said sponge comprising a fibrous, nonwoven fabric consisting essentially of entangled fibers arranged in an interconnecting pattered relationship in the plane of the fabric, and at least one x-ray detectable element positioned interiorly of said fibrous nonwoven fabric in the plane thereof, the fibers of said nonwoven fabric being intertwined about said x-ray detectable element."

III. The Opposition Division found that the grounds for opposition did not prejudice the maintenance of the patent unamended and rejected the opposition.

IV. The appellant (opponent) lodged an appeal against this decision of the Opposition Division.

His written statements as well as his arguments during the oral proceedings held before the Board on 28 September 1995 were exclusively based on the ground that the claimed subject-matter failed to involve an inventive step.

During the appeal proceedings, parties based their arguments on the following documents:

D1: DE-A-2 422 975,
D2: DE-A-1 635 577,
D3: DE-A-2 801 682,
D4: DE-A-2 600 185, and
D6: US-A-3 129 466.

V. The appellant requested that the decision under appeal be set aside and the European patent No. 0 160 560 be revoked.

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

VI. At the oral proceedings the appellant argued essentially as follows:

Document D1 disclosed a surgical sponge comprising a fibrous, nonwoven fabric which - document US-A-3 485 706 being cited in the description of the patent in suit as well as in the description of this document - was manufactured by the same method as the fabric from which the claimed sponge was made. Before the sheet of nonwoven fabric was folded to the form of a surgical sponge, a x-ray detectable element, e.g. a filament of a polyolefine loaded with a x-ray detectable material, was attached to it.

Since document D1 was silent about the nature of attachment a person skilled in the art would look for an adequate method to attach a filament to a nonwoven fabric and in this connection find document D6 which was also mentioned in the description of the patent in suit. Document D2 (Example 30) was equivalent in this respect.

VII. The respondent presented essentially the following arguments:

It was true that the subject-matter of Claim 1 differed from the surgical sponge disclosed in document D1 by the feature that at least one x-ray detectable element was positioned interiorly of the fibrous nonwoven fabric in the plane thereof, the fibers of said nonwoven fabric being intertwined about said x-ray detectable element. Document D1 suggested, however, that the x-ray detectable element should be attached to the nonwoven fabric. Consequently, a person skilled in the art looking for a method of how to attach an x-ray detectable element to a sheet of fabric would have found documents D3 and D4 which are particularly concerned with solutions for this problem. In this way he would have arrived at those methods which had been used to attach such an element to a sheet of woven fabric by sewing or heat sealing after its manufacture. According to the patent in suit, however, the x-ray detectable element was integrated into the nonwoven fabric during its manufacture.

Document D6, which had been published ten years before document D1, was concerned with the mechanical reinforcement of a nonwoven fabric by the incorporation of a regular pattern of strands or yarns in gauze or other openmesh fabrics and not with the fixation of single x-ray detectable elements. The same applied to document D5.

Reasons for the Decision

1. No objections on the ground of Articles 100(b) and 100(c) EPC have been raised by the appellant during appeal proceedings. The Board does not see any basis for such an objection either.

2. *Novelty*

2.1 The Board concurs with the parties that document D1 is the closest prior art.

This document discloses a surgical sponge including an x-ray detectable element, said sponge comprising a fibrous, nonwoven fabric consisting essentially of entangled fibres arranged in an interconnecting patterned relationship in the plane of the fabric. The known sponge comprises an x-ray detectable element (13) (Figures 1 and 2) which is attached to the web (10) of nonwoven fabric in a manner and at a position that it is located in the interior when the web is folded to the final form of a sponge (see the paragraph bridging pages 10 and 11). The formulation "An dem Bogen befestigt" chosen in document D1 which corresponds to "attached to the sheet" in English is only open to the interpretation that first the sheet (10) of nonwoven fabric is manufactured before the x-ray detectable element (13) is attached to its surface.

Document D1 is silent about the nature of the attachment.

2.2 Consequently, the subject-matter of Claim 1 differs from what is disclosed in D1 in that at least one x-ray detectable element is positioned interiorly of said

fibrous nonwoven fabric in the plane thereof, the fibres of said nonwoven fabric being intertwined about said x-ray detectable element.

2.3 Since none the other documents enumerated above does disclose the whole combination of features of Claim 1 either, the subject-matter of this claim is novel.

3. *Inventive step*

3.1 According to the analysis given in point 2.1. above, document D1 discloses that the x-ray detectable element is attached to the surface to the sheet of nonwoven fabric after its fabrication. This document, however, is silent about the nature of this attachment.

A person skilled in the art, therefore, will search in the state of the art for a method of how to attach an x-ray detectable element to a sheet of fabric.

3.2 Only the documents D3 and D4, of all the documents cited, disclose the reliable fixation of an x-ray detectable element to a sheet of fabric.

Document D3 (Figure 1, page 6 first paragraph) discloses an x-ray detectable element (20) arranged between the layers of woven fabric or nonwoven fabric of unspecified structure which are folded to form the sponge. Moreover, this known sponge comprises a visually detectable element (22) which may also be x-ray detectable. In this case it has a sophisticated layered structure (see Figures 3 and 4; page 6, second paragraph, to page 7, first paragraph; page 9, second paragraph) and is fixed to the surface by a sewing method (Figures 1 and 5).

Document D4 discloses a method to extrude an elongated piece of radio-opaque material onto the surface of a fabric and to intimately connect it therewith by hot pressing.

It is true that according to these two documents the x-ray detectable element is attached to the surface of a sheet of a fabric. There cannot be seen any prejudice, however, why these traditional methods should not also be used in a connection with a sheet of a patterned nonwoven fabric as disclosed in document D1. The disadvantage that the fixation of the x-ray detectable element involves an additional process step between the preparation of the sheet material and the folding of the sponge is independent of the fact whether the fabric is woven or nonwoven.

Consequently, a person skilled in the art would have chosen, in the first place, one of these traditional methods disclosed in document D3 or D4 to attach the x-ray detectable element to the sponge of nonwoven fabric disclosed in document D1.

3.3 Document D6 concerns a nonwoven fabric and a method and apparatus of making the same. Since the technical content of this document is incorporated by reference in the description of the patent in suit (EP-B-0 160 560, column 2, lines 44 to 48), the method disclosed therein is one of the methods which may be used to produce the nonwoven fabric from which the surgical sponge according to the patent in suit is made.

The problem document D6 aims at solving consists in providing such nonwoven fabrics with strength, resistance to wear, launderability, etc. to make it comparable to woven or knitted gauze in this respect (see column 1, lines 41 to 46). This problem there is

solved by incorporating during the manufacture either an open-mesh or loosely-fabricated textile material (Figures 8 and 12) or a pattern of parallel warp threads (Figure 10) into the nonwoven fabric. The pattern of threads which is incorporated is chosen to be congruent with the pattern of the apertured belt which is used to produce the nonwoven fabric (column 3, lines 66 to 72) such that the threads are intertwined and intermeshed with and completely surrounded by the fibres of the nonwoven fabric (column 5, lines 55 to 71). Moreover, the thickness of the threads to be incorporated has to be chosen to fit completely within the thickness of the nonwoven fabric such that the fibres of the nonwoven material are outermost on both sides of the gauze fabric thus to give to the reinforced nonwoven fabric a soft and gentle hand along with enhanced absorbency.

X-ray detectable elements regularly are single elements which are required to contrast with the regular pattern of the fabric from which the surgical sponge is made. Therefore, in addition to being made from x-ray impermeable material, they have to differ in dimensions and arrangement from the regularly patterned basic fabric in order to be clearly discernible on a radiographic picture (see D4, page 3, second paragraph; D3, page 7, first paragraph; EP-B-0 160 560, column 4, lines 15 to 32). Consequently, such x-ray detectable elements were regularly attached to the already produced fabric and - not even in woven gauze - incorporated therein during its production.

Since the x-ray detectable elements fail to meet any of the requirements of the reinforcing threads according to document D6 the Board cannot see why a person skilled in the art should have been incited by document D6 not to attach them to the nonwoven fabric after its production as suggested by document D1 but to incorporate them into

the fabric during its production. If such a consideration would have been obvious, as suggested by the appellant, the author of document D1 would have already suggested it, because document D6 was published ten years before document D1.

Example 30 of document D2 transmits the same teaching as document D6.

3.4 Therefore, the subject-matter of Claim 1 involves an inventive step.

4. The grounds for opposition invoked by the appellant do not therefore prejudice the maintenance of the patent unamended.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Townend C. Payraudeau