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D E C I S I O N
of 28 August 1998

Case Number: T 0438/95 - 3.2.5

Application Number: 90101342.5

Publication Number: 0383059

IPC: D03D 15/00

Language of the proceedings: EN

Title of invention:
Textile fabric sheilding electromagnetic radiation, and
clothing made thereof

Patentee:
Finex Handels-GmbH

Opponent:
nsp-Sicherheitsprodukte GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0438/95 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 28 August 1998

Appellant: Finex Handels-GmbH
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80335 München (DE)

Representative: -

Respondent: nsp-Sicherheits produkte GmbH
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Representative: Kraus, Walter, Dr.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted on 23 March 1995
revoking European patent No. 0 383 059 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: A. Burkhart
Members: C. G. F. Biggio
M. K. S. Aúz Castro

Summary of Facts and Submissions

I.: European patent No. 0 383 059 was granted on 9 December 1992 on the basis of 14 claims.

Claim 1 reads as follows:

"1. Textile clothing fabric comprising orthogonal crossings between warp threads and weft threads, the threads being made of stainless steel fibers and textile fibers blended together and spun into mixed yarn, characterized in that the textile fibers comprise cotton fibers and are twined with the steel fibers, the steel fibers measure 6 to 10 micrometers in diameter and constitute a content of 10 to 15% per weight of the mixed yarn, the distribution of the warp threads and the weft threads in the fabric and the composition of the warp threads and the weft threads being substantially the same, the number of mixed yarn threads in warp direction and in weft direction each is 18 to 20 threads per cm, and the yarn fineness of the textile fabric is in the range of 30 to 50 tex, whereby a part of the steel fibers is exposed on the exterior surface of the mixed yarn and mutual electrical contact exists between the warp and weft threads at said crossings to form a Faraday cage, such that a shielding by 20 to 40 dB against electromagnetic radiation at a frequency of 10 GHz is established by the fabric."

Claims 2 to 14 are dependent on Claim 1 and refer to preferred embodiments, including a "Clothing for a human wearer, ... characterized in that the textile clothing fabric has the features of any of claims 1 to 6, ... (Claim 7).

- II. On 9 September 1993, a notice of opposition was filed and revocation of the granted patent in its entirety was requested under Article 100(a), in connection with Articles 52(1), 54 and 56 EPC.
- III. By a decision delivered orally on 2 March 1995 and in writing on 23 March 1995, the Opposition Division revoked the patent under Article 102(1) EPC.

The said decision was based on the following prior art documents:

D9: Chemiefaser/Textilindustrie, 36/88. Jahrgang, Juni 1986, pages T58 to T63, and

D11: Fachwörterbuch Textil, J. Lösch, pages 100, 410, 554.

The Opposition Division held in essence, that, although the subject matter of Claim 1 was to be regarded as novel, it nevertheless did not involve an inventive step, since the differences between the prior art and the subject-matter of the opposed patent were to be considered as obvious by a person skilled in the art.

In particular, it was pointed out that

- cotton fibers were very common natural fibers implicitly disclosed by document D9 (see "Mischungen mit Natur- oder Sythesefasern, page T58, left column),
- the proposed features concerning the diameter of the steel fibers (6 to 10 μm) and their content (10 to 15%) were hinted at by the same document D9, with almost the same values (diameter of 8 μm and content of 10-30%),

- the skilled person would have included, as a normal design possibility, the standard quality (18 to 20 threads per cm, with 30 to 50 tex yarn fineness) known from document D11 (see pages 410 and 554), in a fabric such as known from document D9,
- the claimed shielding effect by 20 to 40 dB against electromagnetic radiation at a frequency of 10 GHz was merely a desired object to be achieved, but neither a real nor a substantially new feature.

IV. On 18 May 1995, the Patentee lodged an appeal against the above decision and paid the prescribed fee on the same day by cheque. The statement of grounds was filed on 2 August 1995.

V. The Appellant argued essentially as follows:

Even the appealed decision pointed out, on page 5, that all the various parameters mentioned in Claim 1 were not known from document D9.

Further, steel fibers having a diameter of 8 μm were not known in relation to protecting garments with a proportion of steel fibers from 10 to 30%, but only with a much smaller proportion of 1.2%, which was unsuitable for shielding against electromagnetic radiation.

Apart from that, document D9 did not specify the known fabric in relation to its shielding properties. The known fabric with an electrostatic effect of the protection garment against a non-specified electromagnetic radiation, did not have the quality of a normal textile fabric like that of a shirt.

The Appellant requested that the decision under appeal be set aside and the patent be maintained as granted.

VI. The Respondent (Opponent) requested that the appeal be dismissed.

With its letter dated 19 February 1996, the Respondent presented for the first time the following documents:

- (A) "Eidesstattliche Versicherung" of Mr. Jan Pavlinec, concerning an alleged prior use,
- (B) Prospectus "Bekaert; Bekinox ® - Edelstahlfasern für die Textilindustrie",
- (C) Prospectus "Bekaert; Bekinox ® VN - Endlos-Garn, and
- (D) Handbuch "Invascreen Schutzanzug", pages 1 to 20.

The Respondent essentially argued as follows:

The subject-matter of the patent in suit did not involve an inventive step with respect to the disclosure of documents D9, (B), (C) and the general knowledge of a person skilled in the art of textiles. Document (A) proved that the subject-matter of Claims 1 to 6 of the patent in suit was already publicly used before 15 February 1989.

Further, a protection suit as described in document (D) had already been sold by a Swiss company in the year 1986; said protection suit comprising the essential features of the subject-matter of the patent in suit.

VII. The Respondent withdrew the opposition, by its letter dated 27 March 1997.

Reasons for the Decision

- 1. The appeal is admissible.
- 2. *Withdrawal of the opposition*

The withdrawal of the opposition by the Respondent does not put an end to the appeal proceedings, since the Opponent is not the Appellant (see decision T 629/90, J.O. 1992, 654).

However, withdrawal of an opposition by the Respondent means that the latter ceases to be Party to the appeal proceedings in respect of the substantive issues (see decision T 789/89, J.O. 1994, 482).

- 3. *Late filed evidence*

It is established jurisprudence of the Boards of Appeal that allegations of prior public use may only be considered if such allegations are substantiated, i.e. if the following circumstances are clarified:

- (i) the date at which the prior use occurred,
- (ii) exactly what was in the prior use, and
- (iii) the circumstances surrounding the prior use.

In the present case, the alleged prior uses based on documents (A) and (D) are unclear with respect to the circumstances (i) and (iii) and, therefore, not substantiated.

The publishing date of documents (B) and (C) is unclear. Moreover, the disclosure of documents (B) and (C) does not come closer to the invention than that of document D9.

Therefore, the Board disregards the late filed documents (A), (B), (C) and (D) under Article 114(2) EPC.

4. *Novelty*

The document disclosing the closest prior art, in respect of the subject-matter of the patent in suit, is document D9.

This document discloses antistatic textile clothing fabrics comprising orthogonal crossings between warp threads and weft threads; the threads being made of stainless steel fibers and textile fibers blended together and spun into mixed yarn (see page T58, middle and right column). The textile fibers are twined with the steel fibers, the steel fibers measure in diameter 8 μm (page T58, middle column, last paragraph) and may constitute a content of 10 to 30% per weight of the mixed yarn (page T58, right column, lines 18 to 22), in order to provide shielding against electromagnetic fields and high frequency radiation with the effect of a Faraday cage.

Document D9, however does not disclose the following features of Claim 1:

- the use of cotton fibers,

- the distribution of the warp threads and the weft threads in the fabric and the composition of the warp threads and the weft threads in the fabric being substantially the same,
- the number of mixed yarn threads in warp direction and in weft direction, each being from 18 to 20 threads per cm,
- the yarn fineness of the textile fabric being in the range of 30 to 50 tex,
- whereby a part of the steel fibers is exposed on the exterior surface of the mixed yarn,
- the shielding effect of the fabric, which is by 20 to 40 dB, against electromagnetic radiations at a frequency so high as 10 GHz.

Hence, the subject-matter of the patent in suit is new.

5. *Inventive step*

5.1 Problem

The problem underlying the invention consists in providing a textile clothing fabric which is suitable for shielding against electromagnetic radiation, in particular in the microwave range, and, at the same time, does not restrict the wearing comfort of usual clothing (see: column 1, lines 44 to 49 of the patent in suit).

5.2 Solution

This problem is solved by the textile clothing fabric according to Claim 1, which specifies a plurality of properties and parameters, like fineness and weight content of the steel fibers, composition and distribution of the warp and weft threads, thread fineness and density, exposure of the steel fibers on the exterior fabric surface and mutual electrical contact between the warp and the weft threads at the thread crossing to form a Faraday cage; which properties and parameters must be set within the claimed ranges, so that a high shielding by 20 to 40 dB against electromagnetic radiation at a frequency of 10 GHz is established, on one hand, and an acceptable wearing comfort of usual clothing is obtained, on the other hand.

5.3 This solution is not rendered obvious by the prior art documents under consideration, for the following reasons.

It is true that document D9 mentions that protection garments with a high proportion (10 to 30%) of steel fibers have the effect of a Faraday cage for the shielding of electromagnetic fields and high-frequency radiations.

Document D9, however, is silent about the extent of the shielding effect with respect to a given high-frequency radiation, as specified in Claim 1, and does not disclose some of the properties and parameters also specified in said claim (see paragraph 4 above).

The disclosure of document D9, accordingly, cannot incite the person skilled in the art to select the totality of properties and parameters as defined in Claim 1, which are, in combination, necessary to provide a clothing fabric having high shielding effect against electromagnetic radiation, without restricted wearing comfort.

Document D11 is dictionary concerning textile definitions and refers to the use of 18 to 20 threads per centimetre with 30 to 50 tex thread fineness, as standard quality for cotton fabrics.

Document D11, however, is not concerned with textile fabrics having a shielding effect against electromagnetic radiations and cannot, therefore, incite the person skilled in the art to define the fabric according to Claim 1, exhibiting a specific shielding effect against electromagnetic radiations having a specified frequency.

Also the other prior art documents on file do not suggest the specific combination of properties and parameters, as defined in Claim 1.

- 5.4. Therefore, the textile clothing fabric according to Claim 1 of the patent in suit involves also an inventive step within the meaning of Article 56 EPC.
6. Hence, the subject-matter of Claim 1 of the patent in suit constitutes a patentable invention pursuant to Article 52(1) EPC.


The same applies to the subject-matter of claims 2 to 14 of the patent in suit, which refer to specific embodiments and uses of the subject-matter of Claim 1.

Order


For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent in suit is maintained unamended.

The Registrar:


A. Townend

The Chairman:


A. Burkhart



