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D E C I S I O N
of 13 September 1999

Case Number: T 0708/97 - 3.2.4

Application Number: 91830055.9

Publication Number: 0443991

IPC: A62B 17/00

Language of the proceedings: EN

Title of invention:

Fire-proof protection wearing outfit

Patentee:

Prometeo S.p.A.

Opponent:

Tacconi S.p.A.

Headword:

-

Relevant legal provisions:

EPC Art. 123, 56

Keyword:

"Extension of subject-matter - no"

"Inventive step - yes"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0708/97 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 13 September 1999

Appellant: Tacconi S.p.A.
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 12 May 1997
concerning maintenance of European patent
No. 0 443 991 in amended form.

Composition of the Board:

Chairman: C. A. J. Andries
Members: M. G. Hatherly
C. Holtz

Summary of Facts and Submissions

I. The interlocutory decision of the opposition division was dispatched on 12 May 1997 to maintain the European patent No. 0 443 991 in amended form.

On 27 June 1997 the appellant (opponent) filed an appeal against this decision and simultaneously paid the appeal fee. The statement of grounds of appeal was received on 8 September 1997.

II. The following prior art documents were referred to in the appeal proceedings:

D1 Article "How firefighters keep their cool", Safety at Sea, August 1983, pages 26 and 27

D2 FR-A-2 561 930

D3 US-A-4 843 646

D4 Brochure "Clothing for Osha#1910 Requirements", Fyrepel Products Incorporated, 1984; pages 10 and 11

D5 Brochure from Fyrepel Products, 1988; pages 3 and 4 and a further page

D7 Article "Forest fires and the prevention of burns: Study and development of a protective outfit" by Magliacani, Annals of the Mediterranean Burns Club, 1987, pages 67 to 69

III. The appellant argued in the appeal proceedings that the claims maintained by the opposition division contravened Articles 123(2), 123(3) and 84 EPC and that their subject-matter was not inventive. Following a communication from the board giving provisional comments, oral proceedings took place on 13 September 1999 in the presence of the parties. Following a discussion concerning Articles 84 and 123 EPC, the respondent (proprietor) filed new sets of claims for a main and three auxiliary requests, arguing that these new claims were unobjectionable under Article 123 EPC and contained inventive subject-matter.

IV. Claim 1 of the main request reads:

"A protective, fireproof outfit for activities involving a risk of burns, the outfit is constituted by several garments which are at least partially superposed to provide different degrees of protection to different regions of the body of the person wearing the outfit,
characterised by the following characteristics in combination:

- a) the outfit has a small area of minimum protection (14) in correspondence with at least one more heat-resistant region (14) of the body of the person wearing the outfit, constituting a point where the outside temperature can be detected so that the person can become aware of the ambient temperature promptly,
- b) in the regions of greatest protection, as a result of the superposition of the various garments, the outfit has an outer layer of fireproof fabric superposed on at least one layer of mesh (8) made

of a fireproof yarn and at least one layer of net made of a fireproof yarn, the layers being formed so as to facilitate the transfer of heat from the outside environment to the skin of the person wearing the outfit by radiation but to keep to a minimum the transfer of heat by conduction, said outfit including additional protectors (9, 10) on the back portions of the legs at knee level and the front portions of the lower legs."

The respective claim 1 of each of the three auxiliary requests adds features to claim 1 of the main request.

- V. The appellant requests that the decision under appeal be set aside and the patent be revoked.

The respondent requests that the decision under appeal be set aside and the patent be maintained on the basis of either the main request or the first, second or third auxiliary requests filed in the oral proceedings.

The other patent documents for the main request are:

Claims: 2 to 5 filed during the oral proceedings before the board,

Description: columns 1 and 2 filed with the letter dated 20 September 1995, columns 3 to 5 as granted,

Drawings: Figures 1 to 21 as granted.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments - main request*

2.1 Claim 1 as granted contains all the features of claim 1 as originally filed and adds nothing thereto except two reference numerals.

Claim 1 of the main request contains all the features of claim 1 as granted and adds thereto only the feature of "said outfit including additional protectors (9, 10) on the back portions of the legs at knee level and the front portions of the lower legs" taken almost word for word from lines 22 to 24 of page 7 of the original description (column 4, lines 27 to 29 of the granted patent).

Thus claim 1 of the main request does not contravene Article 123(2) EPC and, since it is of more restricted scope than the granted claim 1, does not contravene Article 123(3) EPC either.

2.2 Claims 2 to 5 of the main request are the same as claims 2 to 5 both as originally filed and as granted except that, in view of the addition to claim 1, the words "the flexing regions of the limbs" have been deleted from claim 2.

2.3 The present description differs from that originally filed and as granted merely by additions to acknowledge the prior art and amendments to bring it into line with the present claim 1.

2.4 Thus the board sees no objection under Articles 123(2) and 123(3) EPC to the above amendments.

3. *Interpretation of claim 1 of the main request*

3.1 In this section 3 all column and line numbers apply to the description both as granted and as according to the opposition division's interlocutory decision. Corresponding passages are to be found in the description as originally filed.

3.2 Lack of clarity is not a ground for opposition under Article 100 EPC and so clarity objections to claim 1 of the main request are basically only possible if they concern the feature added since grant of "said outfit including additional protectors (9, 10) on the back portions of the legs at knee level and the front portions of the lower legs". As stated in section 2.1 above, this feature is to be found almost word for word in the original application and in the granted patent.

As far as the particular embodiment of the outfit is concerned, column 4, lines 21 to 36, explains that the back portions of the legs at knee level are protected by the outer overall with its mesh lining (shown in Figure 4) plus the additional protectors 10 (shown on Figure 4) consisting of mesh, net, mesh, mesh and net (see Figure 20 and column 4, lines 32 to 36). The front portions of the lower legs are protected by the outer overall with its mesh lining (shown in Figure 3) plus the additional protectors 9 (shown on Figure 3) consisting of two layers of mesh between which there is a net of fireproof yarn (see Figure 19 and column 4, lines 29 to 32).

Thus this claimed feature is supported by the description and moreover the board cannot see anything unclear in it.

- 3.3 Nevertheless, in order to compare it with the prior art, it will be necessary to decide how the whole of claim 1 of the main request is to be interpreted, referring when necessary to the description and drawings (Article 69 EPC).

The board interprets claim 1 of the main request as follows.

- 3.3.1 The claim specifies "different degrees of protection to different regions of the body" due to the at least partially superposed garments and, because of the use of the terms, "area of minimum protection" and "regions of greatest protection", the claimed outfit obviously also has regions of other (i.e. average or normal) protection.

The particular embodiment of the outfit has these normal regions for example at the chest and back which are protected by the overall 1 of fireproof or fireproofed yarn shown in Figures 1 to 4 and the single mesh vest 2 shown in Figure 5, see also column 4 lines 1 to 5, 13 to 20 and 51 to 53.

- 3.3.2 The claimed outfit "has a small area of minimum protection (14) in correspondence with at least one more heat-resistant region (14) of the body of the person wearing the outfit, constituting a point where the outside temperature can be detected so that the person can become aware of the ambient temperature

promptly".

The particular embodiment of the outfit has this area on the front of one thigh and the area consists of only the fabric of the overall, see column 4, lines 44 to 50 and hole 14 on Figures 3 and 21.

- 3.3.3 The claimed outfit has regions of greater protection than the normal protection. These regions are termed "regions of greatest protection" and "as a result of the superposition of various garments" there is here "an outer layer of fireproof fabric superposed on at least one layer of mesh (8) made of a fireproof yarn and at least one layer of net made of a fireproof yarn".

The particular embodiment of the outfit has such an area at the abdomen which is protected by the overall of Figure 1 (which provides the outer layer of fireproof fabric) and the vest of Figure 5 (which in the area of the abdomen has the Figure 19 construction of mesh, net and mesh), see column 4, lines 30 to 32 and 53 to 56.

4. *Novelty - claim 1 of the main request*

After examination of the prior art documents on file, the board is satisfied that none of them discloses a protective, fireproof outfit with all the features of claim 1 of the main request. This was not disputed in the oral proceedings by the appellant.

The subject-matter of claim 1 of the main request is thus considered novel within the meaning of Article 54

EPC.

5. *Closest prior art, problem and solution - claim 1 of the main request*

D7 discusses on page 67, right-hand column, lines 1 to 9 the disadvantages of heat being transferred by conduction to the skin instead of by convection or radiation. Page 68, left-hand column, lines 22 to 44, adds that an outfit must be comfortable, must permit sufficient freedom of movement to the limbs and must provide the greatest protection at the difficult-to-treat risk regions such as the joints. The middle of the right-hand column of this page 68 states that an "outfit produced in accordance with the foregoing provisions (PROMEPACK-PROMETEO) is composed of helmet, cap, hood, overalls, shirt and gloves. It allows for three different protection factors, according to the different functional importance and vulnerability of the body regions."

Thus D7 discloses essentially the pre-characterising portion of claim 1 of the main request. However how this outfit is constructed in detail is not disclosed by D7 and moreover neither party has provided any information on the PROMEPACK-PROMETEO outfit.

The problem that the present invention sets out to solve can be seen as how to implement the wishes expressed by D7. This problem is solved by the use of superposed fireproof mesh and net layers minimising conduction heat transfer from the outside to the wearer so that what heat transfer does take place takes place by radiation. Particularly vulnerable areas include the

back portions of the legs at knee level because healing of burn wounds is difficult here and so additional protectors are provided here. Moreover the wearer is warned of high ambient temperature by heat transfer to a heat resistant part of the body through a small area of the outfit that has minimum heat protection.

6. *Inventive step - claim 1 of the main request*

6.1 The board cannot see that the skilled person starting from the teaching of D7 and using this document alone would arrive in an obvious manner at the subject-matter of claim 1 of the main request. D7 is a fairly general article which gives the skilled person much to think about but no concrete information on how the items of the outfit are to be constructed. Moreover while it recognises that the joints need special attention, it gives no hint to provide additional protectors at the backs of the knees (rather than perhaps at the general knee area) and on the front portions of the lower legs.

6.2 It must be borne in mind that only if the individual features of the specific construction of the layers, the small area of minimum protection for detecting the outside temperature and the additional protectors are known per se in the prior art will it be necessary to decide whether these features solve related or independent problems.

6.3 The board cannot see that the other documents on file would help the skilled person starting with the teachings of D7 to arrive at an outfit according to claim 1 of the main request.

6.4 D3 discloses in detail different garments making up "a firefighter's protective clothing system which addresses each body part's unique liner needs optimally, and without detriment to the different needs of other body parts", see column 2, lines 13 to 16.

However, like D7, D3 makes no mention of the specific layered construction of fabric, mesh and net of the present invention and so D3 would not help the skilled person towards this aspect of the present invention.

Column 1, lines 47 to 57 of D3 explains that "flexibility in movement is a particularly critical need, for example back of knees ... These "flexing" areas or portions are flexed during firefighting ... The liner portions which are flexed bunch during flexing, and the insulative performance is increased in these areas ... However, increased insulative performance is not required in these areas or portions, and the bunching of heavy material reduces flexibility". Column 2, lines 21 to 25 add that "an object of this invention is to provide in the same garments lighter, more flexible (hence comparatively less insulative) liner materials in areas which are flexed and/or which interface with other protective garments."

D3 is in fact the only document on file that discloses treating the backs of the knees in a special way but D3 in fact teaches the reduction of the amount of insulation material in these regions, i.e. the exact opposite of what the present invention teaches. Thus D3 would lead the skilled person away from, rather than towards, the present invention.

Moreover, like D7, D3 is of no help in providing the claimed feature of a small area of minimum protection for detecting the outside temperature.

6.5 D1 comments on various types of firefighting clothing made with various materials and states on the second page of the article, at the top of the right-hand column, that one part of the body can act as a heat sensor e.g. the ears or thighs. However while ears are small D1 does not actually specify providing the outfit with a small area of minimum protection. As far as the other aspects of the invention are concerned, e.g the additional protectors and the specific layers, D1 is of little help because it is too general an article.

6.6 D2 deals with firefighting garments including a suit shown in Figure 1 comprising mesh and fabric layers. The layers are part of the suit (they may be sewn together, see page 3, lines 5 to 9) and so the protection provided by the various layers is provided by the suit (i.e. by a single garment), there is no hint of providing different degrees of protection to different regions of the body by superposing different garments.

Figure 3 shows a section on line III-III on Figure 1 and shows that the legs consist of a fabric layer and a mesh layer. Figure 4 shows the construction of the knee area B shown on Figure 1 and shows that an extra layer 4 is provided here. However this area B of extra protection is at the front of the knees i.e. exactly the opposite to what is taught by the present invention.

Thus D2 would not lead the skilled person to the presently claimed invention.

- 6.7 D4 discloses fire brigade clothing with e.g. coats overlapping the trousers and with gloves overlapping the sleeve ends, thus providing extra protection in the waist and wrist areas.

However there is no disclosure of the fabric layers set out in claim 1 of the main request, no disclosure of added protection at the knees and no suggestion that this should merely be at the backs of the knees.

- 6.8 D5 discloses firefighting clothing which is reinforced at various places, including the knees. However this knee reinforcement is at the front of the knees not at the back and so D5 would not lead the skilled person towards the claimed invention.

- 6.9 Thus the board concludes that the prior art documents on file, taken singly or in any combination, would not lead the skilled person to the subject-matter of claim 1 of the main request which thus involves an inventive step as required by Article 56 EPC.

7. The patent may therefore be maintained amended, based on independent claim 1 of the main request, claims 2 to 5 dependent thereon, the amended description and the drawings.

8. Accordingly it is unnecessary to examine the respondent's three auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in the following version:

Claims: 1 to 5 of the main request filed during the oral proceedings,

Description: columns 1 and 2 filed with the letter dated 20 September 1995,
columns 3 to 5 as granted,

Drawings: Figures 1 to 21 as granted.

The Registrar:

The Chairman:

N. Maslin

C. Andries