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Bezeichnung der Erfindung: Ski sock with integrally knit thickened
Title of invention: fabric areas
Titre de l'invention :

Klassifikation / Classification / Classement : D 04 B1/26

ENTSCHEIDUNG / DECISION

vom / of / du 14 November 1989

Anmelder / Applicant / Demandeur : Thorneburg Hosiery Co., Inc.
Patentinhaber / Proprietor of the patent /
Titulaire du brevet :
Einsprechender / Opponent / Opposant : Franz Falke-Rohen Strumpfwarenfabrik GmbH

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 114(2), 52

Schlagwort / Keyword / Mot clé : "Obviousness (Yes) long felt need (No)"
"- late submission of auxiliary request (No)"

Leitsatz / Headnote / Sommaire



Case Number : T 226/87

D E C I S I O N
of the Technical Board of Appeal
of 14 November 1989

Appellant : Franz Falke-Rohen Strumpfwarenfabriken GmbH
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Decision under appeal : Decision of Opposition Division of the European
Patent Office dated 24 March 1987 rejecting
the opposition filed against European patent
No. 0 062 969 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : P. Delbecque

Members : M. Huttner

J.C. Saisset

Summary of Facts and Submissions

- I. European patent No. 0 062 969 incorporating 14 claims was granted on 23 January 1985 on the basis of European patent application No. 83 301 281.0, filed on 12 March 1982 and claiming a priority from an earlier US application of 13 April 1981.

Claim 1 as granted was worded as follows:

"A sock particularly adapted for wear with ski boots and the like and being adapted to cushion and protect the front portion of the leg from discomfort caused by the ski boot, said sock being knit throughout a body yarn (B) and including an integrally knit leg and foot, said leg and foot comprising a front half (11) covering the front of the leg and the top of the foot of the wearer, and a rear half (12) covering the rear of the leg, the heel, and the sole of the foot of the wearer, said sock being characterized by additional yarn (Y-1, Y-2) knit in plated relationship with body yarn (B) in the front half (11) of said leg and providing a thickened fabric area (21) extending along the front of the leg of the wearer for cushioning and protecting the front of the leg of the wearer, areas (24, 25) adjacent opposite sides of said thickened fabric area in the front half of said leg being knit of said body yarn only providing substantially greater stretchability than the stretchability of said thickened fabric area so that the sock may be easily drawn on and removed from the foot and leg of the wearer and the sock will readily conform to the configuration of the leg of the wearer."

- II. The Appellant (Opponent) filed an opposition to the grant of the European patent of 22 October 1985 requiring its revocation on the grounds of lack of novelty and inventive step.

The following evidence was on the record:

- (1) US-A-3 793 851
- (2) EP-A-0 024 211
- (3) EP-A-0 015 119
- (4) US-A-4 008 350
- (5) US-A-3 995 322
- (6) US-A-3 003 154
- (7) CH-A- 328 401

A sample of a sock made public by use involving delivery and sale in 1979.

III. By its decision of 24 March 1987 the Opposition Division rejected the Opposition pursuant to Art. 102(2) EPC arguing essentially that the subject-matter of Claim 1 differed in important aspects from the most relevant state of the art, i.e. from the socks disclosed in documents (1) to (3) by the provision of an additional yarn knitted in plated relationship with the yarn body in the front half of the leg only for providing a thickened knitted fabric area extending along the front of the leg of the wearer, whereas the known socks show no comparable thickened fabric area in the leg portion.

With respect to the socks in the prior art documents (4) and (5) it stated that there are no areas adjacent opposite sides of said thickened fabric area on the front half of the leg being knit from the body yarn only to provide substantially greater stretchability, while those known from documents (6) and (7) lack areas with additional yarn knit in plated relationship with the body yarn and adjacent areas with greater stretchability. Apart from the

affirmation of novelty, no lack of inventive step would exist due to the absence of any hint emerging from any of the documents (1)-(7) and the publicly used sock to arrive at the subject-matter of Claim 1. The Division thus held the objections raised under Art. 100 EPC as unjustified.

IV. An appeal against the decision was lodged by the Opponent on 27 May 1987 and the appeal fee paid at the same time. The Appellant requested that the decision under appeal be set aside and the European patent revoked in its entirety and oral proceedings were requested. The Statement of Grounds were submitted within the prescribed time.

V. The Appellant's submissions may be summarised as follows: Only with the advent of the high shaft ski boots introduced in the late 70's, was interest created in better protection against chafing at the shin portion of the leg. Before this there was simply no need to solve the problem of chafing. However, once a solution to that problem became necessary, it would be obvious for the skilled person, being aware of the sock disclosed in (5), to transfer the thickened area of the sock to the very portion where the chafing by the ski boot is concentrated, with attendant reduction of the undesirable bulkiness of the sock's leg portion inherent to citation (5). To obtain the stretchability adjacent the thickened areas, the skilled person would rely on US-A-4 237 707 newly introduced. Thus Claim 1 would not involve an inventive step. This would likewise apply to the subclaims.

The Respondent, in refuting the arguments advanced by the Appellant stressed the point that those citations relating specifically to ski socks are provided with thick portions surrounding the whole circumference of the leg. The present inventor was the first to appreciate that an improved sock with more stretchable portions on each side could be

provided by localising a thickened fabric area at the front part of the leg. This would involve an inventive step. He requests that the appeal be dismissed and the patent be maintained in its present form or as a first auxiliary request, with a single minor amendment proposed in relation to the dependency of Claim 6.

- VI. In a communication pursuant to R.Pr.B.A. Art. 11(2), the Board expressed its preliminary view and pointed out that the citation (7) disclosed textile fibre pads embedded in the front, ankle and above the heel portions of the knitted ski sock in order to alleviate painful discomfort arising from localized pressure exerted on the wearer's foot. The selection of the front pad only, and its arrangement in a knitted inherently elastic sock in the form of a thickened fabric area consisting of an additional yarn knit in plated relationship with a body yarn known from (1), would render the inventiveness questionable. The parties were invited to deal with the matter raised in the communication during the appointed oral proceedings to which they were summoned in accordance with their auxiliary requests.
- VII. At the oral proceedings held on 14 November 1989, both parties defended their cases essentially dealing with the combination of the teachings of citation (1) and (7). The Respondent stressed that citation (7), although it stated that only one or two instead of three cushion pads could be arranged at certain pressure areas of the foot, would still not reveal which particular choice would have to be made nor why such choice should be made. Since the sock known from (7) is essentially an ankle sock and not predestined for wear with a high shaft ski boot, there was no good reason to refer back to this citation known for some ten years when addressing the problem arising with high ski-boots. In support of inventiveness, the Respondent also argued further that at the application date the

problem of avoiding the chafing of the wearer's leg by high shaft ski boots was around for approximately ten years and thus long felt need existed.

The Appellant on the other hand asserted that the ski sock according to citation (7) is made of knit fabric (vide Col. 2, line 39), so that there are intermediate stretchable areas left between the individual pads. Hence, the latter do not extend the whole distance around the leg as disclosed in citations (4) and (6), which fact effects a reduction of bulk and maintains stretchability. Since the citation states *expressis verbis* that pads may be placed at only one or two of these loctions in order to prevent the exertion of painful pressure, he contends it would be a mere matter of choice simply to select the pad in the front and omit the others if there is need to avoid discomfort particularly arising at the front.

VIII. During the oral proceedings, a second auxiliary request was put forward by the Respondent for grant of the patent with a main Claim 1 basically incorporating the features of effective Claim 1 combined with those of effective Claim 6. The Appellant required its non-admittance due to submission at a very late stage and lack of clear definition of the request.

After adjournment of the proceedings for deliberation on this point at issue, the Board rendered an interlocutory decision indicating that it did not intend to maintain a patent incorporating the effective Claim 1. It would, however, admit the second auxiliary request at this late stage of the proceedings. The Appellant presented his comments and subsequent to the exchange of further arguments, the Respondent submitted a reformulated set of Claims 1-12 as the second auxiliary request whose independent Claim 1 reads as follows:

"A sock particularly adapted for wear with ski boots and the like and being adapted to cushion and protect the leg from discomfort caused by the ski boot, said sock being knit throughout with a body yarn (B) and including an integrally knit leg and foot, said leg and foot comprising a front half (11) covering the front of the leg and the top of the foot of the wearer, and a rear half (12) covering the rear of the leg, the heel and the sole of the foot of the wearer, characterized in that additional yarn (Y1, Y-2) is knit in plated relationship with said body yarn (B) in the front half (11) of the leg and in the rear half (12) of the leg, to provide thickened fabric areas (21, 22, 23) extending along the front and rear halves of the leg of the sock to cushion and protect against discomfort caused by the ski boot, and in that areas (24, 25) knit of the body yarn only extend between said front and rear thickened fabric areas of the leg and define opposite side panels (24, 25) of substantially greater stretchability than the stretchability of said thickened areas in the front and rear halves of the leg, so that the sock may be easily drawn on and removed from the foot of the wearer and will readily conform to the configuration of the leg of the wearer."

IX. The Appellant expanded his arguments to apply equally to the second auxiliary request and also demanded disregard of the argument on long felt need in view of the relatively short time that elapsed since the introduction of high ski boots in about 1975. He requested that the impugned decision of the Opposition Division be set aside and the patent in suit be revoked.

The Respondent countered that no account should be taken of the basically repetitious arguments presented by the Appellant against the auxiliary request and stressed the

existence of an inventive step equally concerning the subject-matter of the effective new Claim 1. He requested that the appeal be dismissed and the patent be maintained on the basis of either the main or the auxiliary request.

Reasons for the Decision

1. The appeal complies with Art. 106 and 108 and Rule 64 EPC. It is admissible.
2. There is no formal objection to the new set of Claims 1-12 submitted as an auxiliary request for the first time by the Respondent during the oral proceedings. Likewise, the Board cannot subscribe to the objection of late submission in view of the fact that the communication issued pursuant to R.Pr.B.A. 11(2) in the items 4 and 5 required no answer prior to the then forthcoming oral proceedings. That could have been so interpreted that it was not necessary to introduce an auxiliary request before the oral proceedings. Yet a further significant fact has to be considered. From the contents of the communication and the earlier favourable decision rejecting the Opposition (thus maintaining the patent in unchanged form), the Respondent could see no special reason to restrict his claims in advance and raise such restricted claims prematurely as an auxiliary request. Only after the Board had made it clear that it was not inclined to maintain the patent containing the effective Claim 1 for lack of inventive step, it was - as a proper defence of the Respondent - advisable to consider the submission of such auxiliary request and to consolidate effective Claim 1 and 6 into Claim 1 whose subject-matter in his opinion, was less vulnerable to an attack of obviousness with regard to the relevant state of the art.

Consequently, the Board had no basis to hold this submission as unduely late and exclude it from consideration under Art. 114 (2). Thus the Board rendered an interlocutory decision in favour of the admission of the auxiliary request in question.

3. Since the existence of novelty has not been in dispute with regard to either the main or the auxiliary request, the only question to examine is to whether the subject-matter set forth in the respective Claim 1 involves an inventive step.

3.1 The Board concurs with the Appellant that the closest prior art from which the invention sets out is represented by Document 1 from which in fact all features of Claim 1 can be gathered with the exception only of the location of the thickened area in the front half of the sock's leg. Firstly, it may be emphasized that the sock claimed in Claim 1 is not limited to a ski sock but is generally directed to a sock. Therefore, the preamble of said Claim 1 at any rate matches the sock disclosed in (1). Secondly, the known sock may be provided not only with a body yarn and an additional terry yarn knitted in plated relationship with the former and both extending throughout the entire sock, but also with such terry yarn which may be localized in the heel pocket only (vide Col. 3, lines 54 to 56).

The Board, therefore, can subscribe to the conclusion that the only distinction between the subject-matter of Claim 1 and citation (1) resides in the arrangement of the thickened area in the front portion of the sock instead of the heel.

3.2 The question now arises whether the skilled person also being aware of the remaining background art on file would

have arrived at the claimed subject-matter without exercising an inventive step.

- 3.3 The Board concurs with the Appellant that the effective problem to be solved by the present invention resides in adapting the sock according to document (1) (considered as most pertinent) to render it more suitable for wear with high shaft ski boots by providing adequate protection against chafing of the front of the wearer's leg by the upper part of the ski boot while concomitantly reducing the bulkiness around the leg and maintaining sufficient stretchability.
- 3.4 Except for providing protection for the front portion of the leg against chafing, this problem has already been solved by a sock according to document (1). Optionally this sock has a limited thickened fabric area knit with a terry yarn extending along the heel area only and not completely around the sock. Hence, the areas adjacent the thickened area devoid of terry yarn are knit of body yarn only, thus providing less bulk and reduced tendency to limit stretchability.
- 3.5 On the other hand, document (7) shows a knit sock suitable as footwear in conjunction with ski and mountain boots provided with cushion pads made of textile fibre material localized at the pressure points such as the instep portion extending up to the rim of the shoe, the ankle portions and the areas at and above the heel portion. According to col. 2, lines 46 to 49, they all serve to protect the foot from painful pressure exerted by the shoe on the wearer's foot at these locations. However, as this citation explicitly points out in col. 1, last paragraph, only one or two of such pads may be utilised. The skilled person can readily gather from this passage that merely one single pad may be selected which may be disposed at any one of these three

pressure points. Unquestionably, one such location may be at the front portion of the sock, and figure 1 of the drawings clearly indicates that the front pad extends nearly to the upper end of the sock. It is evident that this serves to protect the foot from pressure exerted by the shaft of the shoe and the pain inflicted thereby.

Hence, the person skilled in the art has at his disposal the deliberate choice to select the front pad if this is a desideratum and by the same token refrain from using any or all of the remaining pads. Such desideratum arises when the pressure exerted reaches an intensity that may cause chafing in conjunction with wearing high shaft ski boots, which incidentally was first experienced when such boots appeared on the market around 1975. Where a problem aims solely at eliminating deficiencies in an object which come to light when it is in use, so that the average skilled person could have posed it, such problem, although it may be new, does not represent a contribution to the inventive merits of the solution (vide decision T 109/82, Abl. 10/84, 473).

- 3.6 The skilled person would hardly encounter difficulties at all in realising that a front pad would be of benefit also to the sock known from citation (1) when confronted with solving the problem in question. Accordingly it would be obvious to that person that he would modify said sock to provide the same advantage. Therefore, the Board comes to the conclusion that placing a thickened area at the front of the known sock and simultaneously adapting the construction of the pad so as to equal that of the heel portion of citation (1), (i.e. incorporating an additional terry yarn knit in plated relationship with the body yarn) amounts to routine work and to a mere matter of choice; such activity is thus obvious.

In the Board's opinion it is legitimate to properly combine these two citations for establishing obviousness because they are compatible. Not only do they belong to the same specific field of sport socks so that the same skilled person is addressed, but in addition neither citation contains any statements that run contradictory to or resist such combination. In particular, both known socks are knit and thus stretchable in the areas between the areas provided with additional fabric thickness whereby the bulk is likewise reduced. The fact that one sock is particularly adapted for wear with a Western type boot and the other with a ski boot is irrelevant simply because their manner of wear has no bearing on their construction.

- 3.7 The Respondent's further contention that a skilled person being aware of citation (1) faced with the problem of the present invention would rather arrive at a sock according to citation (5) than at the subject-matter of the invention is not persuasive for the following reasons:

Firstly, the bulk of a thickened fabric knit all the way around the leg militates against such contention.

Secondly, it holds true that citation (5) deals with a sock particularly adapted for use for ski boots, wherein the leg portion is provided with terry loops extending all around to provide additional fabric thickness for cushioning the wearer's leg against chafing by the top and upper edge of the ski boot. However, this ski sock, at its leg portion, is devoid of non-thickened areas for providing the desirable stretchability. (Instead this is achieved by an elastic upper cuff portion of rib knit fabric for maintaining the upper edge of the sock in snug engagement with the wearer's leg).

Since the problem the invention is concerned with specifically requires that these drawbacks be overcome, the sock of citation (5) cannot possibly provide the solution.

Finally, if a protection is sought for the front part of the leg, there seems to be no need to provide for a cushioning all around the leg of the wearer.

- 3.8 With respect to the question of long felt need, a secondary consideration presented by the Respondent in support of inventiveness, the Appellant asserted the introduction of high shaft ski boots in 1975, which fact the Respondent failed to refute. Hence the problem to overcome the chafing caused by high shaft ski boots goes back at the most to 1975 and evidently persisted during 6 years until the effective application date in 1981.

The Board held in the Decision T 106/84, Abl. 5/1985, 138, Section 8.6, that a nearly equally short period of time could under special circumstances be considered as sufficient to establish long felt need, in particular when significant occupational health problems persisted, which are always sought to be solved as quickly as possible. In the case at issue, the chafing of the leg of a skier constitutes at most a discomfort but can hardly be considered as a serious health hazard causing reduction of life expectancy nor endangering the life of the sportsman. Therefore, the Board is not in a position to honour the Respondent's dealing with the time factor submissions, judging 6 years too short a time during which the need existed.

- 3.9 The other pieces of prior art placed on file in this case are less germane to the subject-matter of the patent in suit than those so far dealt with. Consequently, the Board refrains from dealing with them any further.

- 3.10 For the above reasons, the subject-matter according to Claim 1 of the main request is obvious and does not involve an inventive step within the meaning of Art. 56 EPC; therefore it lacks patentability (Art. 52 (1)). Hence it cannot be allowed.
- 3.11 Since dependent claims can only be allowed if there is an allowable independent claim to which they are appended and since this precondition is not fulfilled in the instant case, Claims 2-14 cannot be patented either.
- 3.12 The same reasoning and conclusion apply in the same way and for the same reasons to the first auxiliary request, which only differs from the main request by a minor amendment (see point 1).
- 3.13 The independent Claim 1 of the second auxiliary request differs from the Claim 1 of the main request in essence only by the addition of the features from the granted dependent Claim 6. This claim was directed to an additional similar thickened fabric area in the rear half of the sock's leg and extending along it. Further, the areas knit solely of body yarns extending between the thickened front and rear halves define opposite stretchable side panels.

As already pointed out in section 3.3 to 3.5 citation (7) teaches the skilled person not only to select one single pad, i.e. a front pad, but equally two separate pads only. Transferring this teaching to citation (1) leads to the provision of a sock having a front pad placed at a circumferential distance from the heel pad already existent, thus leaving stretchable side panels in between, which inevitably reduce bulk. Furthermore, it has been shown earlier that making the front pad of similar construction to said existing heel thickened area (i.e. made of terry loops knit in plated relationship to the body yarn) amounts to routine work. In view of the above, the

Board comes to the conclusion that the solution to the existing problem as set forth in the subject-matter of Claim 1 of the auxiliary request likewise is obvious.

Consequently, pursuant to Art. 56 EPC, the subject-matter of said Claim 1 cannot be accepted. Neither can the sub-claims 2-12 due to their dependency on an unacceptable Claim 1.

Order

For these reasons, it is decided that:

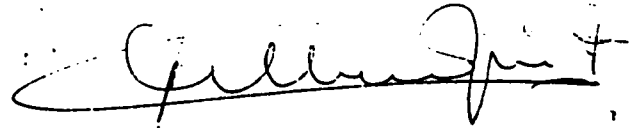
1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:



S. Fabiani

The Chairman:



P. Delbecque