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**D E C I S I O N**  
of 15 November 1996

**Case Number:** T 0647/95 - 3.2.4

**Application Number:** 87903962.6

**Publication Number:** 0268661

**IPC:** A43B 13/12

**Language of the proceedings:** EN

**Title of invention:**  
Multi-Density shoe sole

**Patentee:**  
COMFORT PRODUCTS, INC.

**Opponent:**  
Dr. Ing. Funck GmbH & Co. KG

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 54, 56

**Keyword:**  
"Novelty"  
"Inventive step"

**Decisions cited:**  
T 0002/83

**Catchword:**  
-



Case Number: T 0647/95 - 3.2.4

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.4  
of 15 November 1996

**Appellant:**  
(Opponent)

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**Respondent:**  
(Proprietor of the patent)

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**Representative:**

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**Decision under appeal:**

Decision of the Opposition Division of the  
European Patent Office posted 02 June 1995  
rejecting the opposition filed against European  
patent No. 0 268 661 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** C. A. J. Andries  
**Members:** R. E. Gryc  
M. Lewenton

## Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal, received on 1 August 1995, against the decision of the opposition division, dispatched on 2 June 1995, on the rejection of the opposition against the European patent No. 0 268 661.

The statement setting out the grounds of appeal was received on 12 October 1995.

The fee for appeal was paid on 1 August 1995.

- II. Opposition was filed against the patent as a whole and based on Article 100(a) EPC.

The appellant contended that the claimed invention was not inventive and even not new in view of the state of the art disclosed in documents:

D1: EP-B-0 048 965  
D2: US-A-4 124 946  
D3: US-A-4 130 947 and  
D4: US-A-4 316 332

Nevertheless the opposition division held that, having regard to said documents, the grounds for opposition put forward did not prejudice the maintenance of the patent unamended.

- III. With his statement setting out the grounds of appeal, the appellant further filed the following disclosures:

D5: Article "Dr. Maertens im neuen Look" from the publication "Sonderdruck aus Schuhkurier Nr 3 vom 18 Januar 1991" and

- D6: Prospectus "Dr. Maertens Luftpolsterschuh - Der Komfortable"
- D7: Prospectus "Lloyd Bel Air"
- D8: Models of shoe bottoms alleged to have been manufactured with moulds made in 1984, said models bearing the following cast inscriptions: "Vita Air", "Belair" and "Europa-or Europ. Patent 0 048 965 B1"; and
- D9: Sworn statement dated 11 October 1995 of Matthias Funck .

The appellant contended that the essential features of Claim 1 were taught in D1 and that the core of the technical teachings of respectively Claim 1 and D1 were identical ie a two layers sole structure the upper layer of which comprises a footbed capable of maintaining its shape.

The appellant was also of the opinion that to combine the teachings of D1 and D2 in order to arrive at a composite shoe bottom according to Claim 1 did not involve an inventive step.

- IV. In reply the respondent (proprietor of the patent) pointed out that the documents and evidence provided by the appellant with the statement of grounds of appeal were not submitted in due time and were less relevant than D1. Moreover, the respondent remarked that D5 and D6 were published after the priority date of the opposed patent. He furthermore contended that the appellant had failed to prove that D7, as well as the shoe bottoms corresponding to the models filed had been available to the public before the priority date of the impugned patent.

The respondent was also of the opinion that there was no reason for a skilled person to combine the teachings of D1 and D2 because of lack of hints respectively disclosed therein.

V. Oral proceedings took place on 15 November 1996.

The appellant was of the opinion that, when a shoe having a padded sole according to D1 is worn by a wearer, its composite bottom takes the form of the shoe bottom claimed in Claim 1 since the wearer's foot prints its individual foot bed into the upper cushioning layer (see D1: column 1, lines 52 to 56) and he contended that the complementary shape of the uppermost contoured surface of the upper layer of D1 with the individual wearer's foot is described in column 2, lines 1 to 7.

He also pointed out that the uppermost surface of the upper layer of the sole shown in Figure 2 of the patent is not distinguishable from that shown in Figure 4 of D1.

He contended moreover that the following statement in the description of D1: "...wodurch ein dem Gehen auf Sand-oder Waldboden entsprechender Gehvorgang erreicht wird..." (see D1: column 1, lines 56 to 58) means that the upper layer of the known shoe bottom recovers its original shape each time the pressure of the foot on the layer is released, ie the material of the layer is capable of maintaining its shape against the wearer's weight in the same way as the material of the layer claimed in Claim 1.

Since additionally, according to his opinion, all the other features of the sole known from D1 appeared to be similar to those of the shoe bottom claimed in

Claim 1, the appellant drew the conclusion that the claimed subject-matter was fully anticipated by the prior art disclosed in D1.

If a slight difference between the invention and the disclosure of D1 might be found, the appellant took the view that it would be obvious in any case for the skilled person starting from D1 to complete its teaching with the complementary information given by D2 which relates to the same type of composite shoe bottom having a pre-shaped upper layer as the one of Claim 1.

The respondent disagreed and contested the argumentation of the appellant. He pointed out that the uppermost surface of the upper layer of the sole according to the invention cannot be identical to that of the sole of D1, ie cannot be complementary to the wearer's foot bottom as alleged by the appellant, otherwise the thickness of the upper layer would be constant which is in contradiction with the statement of Claim 1 according to which the upper layer has a varying thickness (see Claim 1: column 15, line 9).

Moreover, the respondent emphasized that the shoe bottom of D1 is conceived according to a technical principle exactly opposite to that according to the invention by the fact that in D1 the shape of an individual footbed is printed into the cushioning layer each time the wearer's foot exerts a pressure on it whereas, according to the invention, a standard footbed is already preshaped in the upper layer.

VI. The appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent requested that the appeal be dismissed.

VII. The wording of Claim 1 as granted reads as follows:

"1. A composite shoe bottom (1) having a toe area, arch area and heel area and including:

- (a) a lower, shaped layer (2) of a material having a predetermined hardness capable of maintaining its shape against the wearer's weight and the layer having an irregular contoured upper stabilizing surface for the wearer's foot
- (b) an upper cushioning layer (3) of a material which is softer than the material of said lower layer and capable of maintaining its shape against the weight of the wearer, and is superposed in face-to-face relation upon an upper surface of said lower layer,

characterized in that

- the lower layer has an increased height around the periphery of the heel area and in the arch area to form a raised arch support, and
- the upper layer (3) has a varying thickness to define an uppermost contoured surface (4) which is preshaped to a contour complementary to the bottom surface of the wearer's foot at least when the upper cushioning layer (3) is in a pre-worn undeformed state, and
- the material of the upper (3) and lower (2) layers can flex, move and distort under the weight of the wearer without permanent deformation."

## Reasons for the Decision

### 1. *Admissibility of the appeal*

After examination the appeal has been found to be admissible with regard to Articles 106 to 108 and Rule 64 EPC.

### 2. *Late filed citations and evidence*

With regard to Claim 1 which has not been amended after grant, disclosures D5 to D9 should have been introduced during the opposition period; they are thus deemed not to have been submitted in due time within the meaning of Article 114(2) EPC.

Since moreover D5 and D6 were published after the priority date and D7 to D9 appear to be less relevant than the state of the art disclosed in D1, the board has decided to disregard these late filed citations and evidence in application of Article 114(2) EPC.

### 3. *Interpretation of Claim 1*

#### 3.1 The following statement in Claim 1:

"...a material... capable of maintaining its shape against the wearer's weight..." (see Claim 1, column 14, lines 51 to 54 and from column 15, line 57 to column 15, line 2), should be interpreted in the light of the patent description (see column 9, lines 18 to 24) as meaning that the layers do not deform permanently and recover their shape after the compression exerted by the foot has ceased, provided of course that the stress on the material remained under the elastic limit.



During the oral proceedings, the appellant contended that this interpretation was inconsistent with the following sentence of the patent description (see column 9, lines 47, 48):

"In order to prevent permanent deformation of the softer upper layer,..."

which seems to acknowledge implicitly that the material of the upper layer can be permanently deformed.

The board does not agree with this opinion since the sentence emphasized by the appellant refers to a situation where the layer is deformed sideways and compressed "too far" (see column 9, lines 52 to 55), ie beyond the elastic limit of its material, whereas the interpretation given above is related to normal walking conditions.

Of course, when the stress exceeds the elastic limit, the material of the layer would be "permanently deformed" but this is not to be expected when using the shoe bottom under normal walking conditions, ie when the material of the upper layer is not compressed "too far".

- 3.2 The upper layer of the shoe bottom according to Claim 1 has an uppermost surface preshaped to be complementary to the shape of a human foot bottom (see the description, column 8, lines 37 to 39) and "a varying thickness" (see Claim 1, column 15, line 9). Consequently the bottom surface of said upper layer cannot also be complementary to the shape of a human foot bottom, otherwise its thickness would be constant, and the in face-to-face relation lying uppermost surface of the lower layer cannot have said complementary shape either.

The following characteristic of the lower layer:  
"irregular contoured upper stabilizing surface" (see Claim 1, column 14, lines 54, 55) should thus not be understood as defining a contour complementary to the bottom surface of a foot, but should be interpreted in the light of the description as designing an uppermost surface contoured so that the layer: "be thicker in areas where the wearer's foot will need extra support" (see the description: column 8, lines 32 to 34).

4. *Novelty (Article 54 EPC)*

4.1 Although D1 discloses a composite shoe bottom of the same general type as the one according to the invention, the shoe bottom described in Claim 1 distinguishes from said prior art by the following essential differences:

- the uppermost surface of its upper layer is preshaped to be complementary to the bottom surface of a standard wearer's foot ie it is preformed to an average orthopaedic foot shape at least when it is in a pre-worn undeformed state (see Claim 1: column 15, lines 12 to 14) whereas, in its pre-worn state, the cushioning layer of D1 has either a flat uppermost surface (see D1: column 2, lines 26, 27 and column 4, lines 10 to 14) or a somewhat profiled, uppermost surface (see D1: Figures 4 to 7, column 4, lines 27 to 33), which due to the varying thickness of the upper layer (see D1: claim 1, column 5, lines 13 to 15) cannot be stated to represent an average orthopaedic foot shape, which is already present, according to its claim 1 (column 5, lines 2 to 6)

in the contact surface between both layers. These uppermost surfaces, according to the disclosure of D1 itself, will become matched to the individual wearer's foot, and

- as already explained in section 3.2 above, the uppermost surface of its lower layer is "irregular contoured" but not to a contour complementary to a human foot bottom like the upper surface of the lower layer of D1;

Therefore, the composite shoe bottom according to the invention appears to be novel in comparison with the prior art described in D1.

- 4.2 In D2, the underface of the upper layer and the uppermost surface of the lower layer of the sole are respectively described and shown as being flat (see D2: Claim 1, column 3, line 38 and Figures 2 to 4) contrary to the lower layer of the shoe bottom according to the invention which has an "irregular contoured upper stabilizing surface" (see section 3.2). Since, moreover, as shown in the Figures of D3 and D4, the uppermost surface of the upper layers of the disclosed composite shoe bottoms are not preshaped to a contour complementary to the bottom surface of the wearer's foot when the upper layer is in a pre-worn undeformed state, also the prior art documents D2 to D4 do not destroy the novelty of the subject-matter set forth in Claim 1.

5. *The closest state of the art*

In agreement with both parties, the board considers that D1 discloses the state of the art closest to the invention.

As already stated in section 4.1 above, the composite shoe bottom claimed in Claim 1 differs from said closest prior art mainly:

- in that the uppermost surface of the upper layer is preshaped to a contour complementary to the standard (or average orthopaedic) bottom surface of a human foot at least when the upper layer is in a pre-worn undeformed state and
- in that the uppermost surface of its lower layer is not preshaped to the bottom surface of the foot but "irregular contoured" to provide stability where needed ie the layer is "thicker in areas where the wearer's foot will need extra support" (see the description: column 8, lines 32 to 34).

6. *Problem to be solved and solution*

When starting from the closest state of the art and taking into account the above mentioned differences, the problem to be solved, as determined objectively, seems to be to provide an alternative shoe bottom to the sole according to D1, said shoe bottom offering cushioning where needed while still providing firm support and stability where needed (see the patent description: column 2, lines 54, 55).

The Board is satisfied that the implementation of the measures claimed in Claim 1 brings a solution to the above-mentioned problem.

7. *Inventive step (Article 56 EPC)*

7.1 The questions to be answered as regards the inventive step are not only whether the skilled person examining the prior art in the light of his general common knowledge would be provided with enough indications so that he could arrive at the solution claimed in Claim 1, but moreover whether, starting from the closest state of the art (ie the composite sole of D1), he would follow the teachings of the prior art to modify said composite sole in the direction of the invention in expectation of the improvement he was searching for (see Decision T 0002/83, OJ EPO 1984, 265).

7.2 Since the teaching of D1 is based on the principle that each padded sole should match itself automatically to the specific individual shape of each wearer's foot and has a support function automatically adapted to the individual requirements of the respective wearer's foot (see D1: column 1, lines 43 to 48 and also column 4, lines 43 to 49), there is a priori no reason for the person skilled in the art to consult and to be led by the teaching of D2 which discloses a composite shoe sole having an upper layer preformed to the standard form of a human foot, in particular since D1 describes such upper walking sole contours having an average orthopaedic foot shape as a disadvantage (see D1: column 1, lines 37 to 42).

7.3 Moreover, even if, nevertheless, the skilled man were to follow the teaching of D2 despite the principle on which the teaching of D1 is based and were to combine the preshaped upper layer of the sole of D2 with the preshaped lower layer of the sole disclosed in D1, he would not arrive at a composite shoe bottom according to Claim 1 not only because the underface of the upper

layer of D2 is flat and cannot be superposed in face-to-face relation in the meaning of the invention upon the contoured uppermost surface of the lower layer of D1, but also since said uppermost surface of D1 contoured to be complementary to the bottom surface of the wearer's foot would not be in any case a stabilizing surface in the meaning of the invention ie a surface such that the lower layer: "be thicker in areas where the wearer's foot need extra support" (see the description: column 8, lines 32 to 34).

- 7.4 For the foregoing reasons, the Board is thus convinced that modifying either the composite shoe bottom known from D1 or the one known from D2 in such a manner as to obtain a shoe bottom according to the teaching of Claim 1 does not follow plainly and logically either from the prior art or from the general knowledge of a skilled person. The subject-matter of Claim 1 therefore implies an inventive step within the meaning of Article 56 EPC.

## Order

**For these reasons it is decided that:**

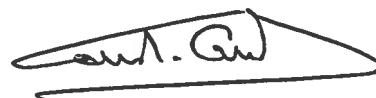
The appeal is dismissed.

The Registrar:



N. Maslin

The Chairman:



C. Andries