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Datasheet for the decision of 12 October 2020

Case Number: T 0482/19 - 3.2.01

Application Number: 13151596.7

Publication Number: 2649896

IPC: A43B13/04, A43B13/12, A43B13/16, A43B13/18, B29D35/12, A43B13/02, A43B13/38, A43B1/00, B29D35/14

Language of the proceedings: EN

Title of invention:
Soles for sports shoes

Patent Proprietor:
adidas AG

Opponents:
1. PUMA SE
2. NIKE Innovate C.V.

Headword:

Relevant legal provisions:
EPC Art. 123(2), 54, 56
RPBA 2020 Art. 13(1), 13(2)

Keyword:
Grounds for opposition - added subject-matter (yes) - main request and auxiliary requests 1, 2, 4-11
Novelty (yes) - auxiliary request 3
Inventive step (no) - auxiliary request 3
Late-filed auxiliary requests - admitted (no)

Decisions cited:
T 0130/89, T 1480/16

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Chambres de recours

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Case Number: T 0482/19 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 12 October 2020

Appellant 1: (Patent Proprietor)	adidas AG Adi-Dassler-Strasse 1 91074 Herzogenaurach (DE)
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Appellant 2: (Opponent 1)	PUMA SE PUMA Way 1 91074 Herzogenaurach (DE)
Representative:	Gosdin, Michael Adam-Stegerwald-Strasse 6 97422 Schweinfurt (DE)
Appellant 3: (Opponent 2)	NIKE Innovate C.V. One Bowerman Drive Beaverton, OR 97005-6453 (US)
Representative:	Müller-Boré & Partner Patentanwälte PartG mbB Friedenheimer Brücke 21 80639 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 18 December 2018 concerning maintenance of the European Patent No. 2649896 in amended form.**

Composition of the Board:

Chairman	G. Pricolo
Members:	A. Wagner
	O. Loizou

Summary of Facts and Submissions

I. The appeals by the patent proprietor (appellant 1 (AP1)) and the opponents 1 and 2 (appellants 2 and 3 (AP2, AP3)) are directed against the decision of the opposition division to maintain the European patent No. 2 649 896 B1 in amended form on the basis of auxiliary request 2 filed with letter dated 14 September 2018.

II. In its decision the opposition division held, *inter alia*, that the subject-matter of claim 1 of the main request (patent as granted) contravenes the requirements of Article 123(2) EPC. The subject-matter of claim 1 of auxiliary request 2 was found, inter alia, new over **D1** (US 2017/0222442 A1) and inventive over the combination of **E1** (US 2009/0277047 A1) with **D1**.

III. Oral proceedings were held before the Board on 12 October 2020.

The appellant 1 (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted (main request), or in the alternative that the patent be maintained in amended form on the basis of one of the auxiliary requests 1 to 11 filed with the statement of grounds of appeal, or one of auxiliary requests 12 and 13 filed with letter dated 14 September 2020. Auxiliary request 3 corresponds to the amended form of the patent as maintained by the opposition division.

The appellant 2 (opponent 1) and the appellant 3 (opponent 2) both requested that the decision under appeal be set aside and that the patent be revoked.

IV. The feature numbering of claim 1 and claim 12 used by opponent 2 is adhered to.

Claim 1 of the main request reads as follows:

1: Sole for a shoe, in particular a sports shoe, comprising:
1.1: a. at least a first and a second surface region,
1.2: b. wherein the first surface region comprises an expanded thermoplastic polyurethane (eTPU) in the form of particles that are bonded to a granular but closed plastic foam structure,
1.3: c. wherein the second surface region is free from expanded TPU, and
1.4: d. wherein by means of the first surface region comprising expanded TPU a particularly large cushioning is achieved whereas by means of using a stiffer material in the remaining region of the sole an increased stability is achieved.

Claim 12 of the main request reads as follows:

12: Method (1400; 1450; 1460) for manufacturing a shoe sole, in particular a shoe sole for a sports shoe, comprising:
12.1: loading (1411; 1413; 1452; 1462) a mold with an expanded thermoplastic polyurethane (TPU) in the form of expanded particles, for a first surface region;
12.2: loading the mold with a material which is free from expanded TPU, for a second surface region;
12.3: feeding steam (1430 ;1454 ; 1464) to the expanded TPU to bond the particles to each other to form a granular but closed plastic foam structure,
12.4: such that by means of the first surface region comprising expanded TPU a particularly large cushioning is achieved whereas by means of using a stiffer

material in the remaining region of the sole an increased stability is achieved.

V. Claim 1 of the auxiliary requests 1 and 4-11 all comprise the same feature 1.2 as claim 1 of the main request.

Claim 1 of the auxiliary request 2 differs from claim 1 of the main request in that feature 1.2 is amended as follows:
1.2': wherein the first surface region comprises an expanded thermoplastic polyurethane in the form of particles that **have been** bonded **to each other by providing heat to the surfaces of the particles such that the particle surfaces at least partially melt, thus** forming a granular but closed plastic foam structure.

Claim 1 of the auxiliary request 3 differs from claim 1 of the main request in that feature 1.2 is amended as follows:
1.2": b. wherein the first surface region comprises an expanded thermoplastic polyurethane in the form of particles that **have been** bonded **to each by feeding steam to the particles to form** a granular but closed plastic foam structure.

Claim 1 of auxiliary request 12 corresponds to claim 12 of the main request.

Claim 1 of the auxiliary request 13 differs from claim 1 of auxiliary request 12 in that feature 12.3 is amended as follows:
12.3': feeding steam (1430 ;1454 ; 1464) to the **surfaces of the expanded particles such that the particle surfaces at least partially melt and the**

particles bond together and form a granular but closed plastic foam structure.

Reasons for the Decision

1. **Main request - Article 123(2) EPC**

1.1 The Board confirms the decision of the opposition division that the main request (patent as granted) does not comply with Article 123 (2) EPC.

1.2 During examination the passage *"in the form of particles that are bonded to a granular but closed plastic foam structure"* was added in feature 1.2. The basis for the amendment is allegedly on page 59, lines 12-15, of the original disclosure. According to the appellants 2 and 3 , the specific foam structure would only be disclosed in combination with the feeding of steam and would clearly be inextricably linked thereto.

1.3 AP1 was of the opinion that the cited passage did **not** establish an inextricable link between the process step of "feeding steam to the particles" and the resultant material structure of "a granular but closed plastic foam structure".
In this respect AP1 referred to page 21, lines 1-6 of the originally filed description, wherein the steam feeding was presented as a preferable option. AP1 argued that it was not the feeding of steam but simply the provision of heat and subsequent melting that resulted in the "granular but closed plastic foam structure".
Furthermore claim 1 was drafted as a product claim while the feature "feeding steam" was a method step which was not necessary for defining the product. Even if claim 1 was partly drafted as a product-by-process

claim, it anyway comprised the structural feature of the "granular but closed plastic foam structure", which was the direct result of feeding steam.

1.4 The arguments of AP1 are not convincing for the following reasons:
In the originally filed application, the feature "granular but closed plastic foam structure" is only disclosed in combination with the feeding of steam, see page 58, lines 6-9, page 59, lines 12-15 or page 60, line 34 - page 61, line 5. All embodiments of the method (see fig. 14a (1430), fig. 14b (1454) or fig. 14c (1464)) disclose a single option for creating the "granular but closed plastic foam structure", namely by feeding steam.

The passage on page 21, lines 1-6, referred to by AP1, discloses in a general context that feeding steam is a preferable process step for partially melting the particles. However, when referring to obtaining a foam structure, the same passage specifies the feeding of steam.

The argument of AP1 (see statement of grounds of appeal page 4/12-5/12, (f)) that the skilled person realizes from the disclosure that the particles must be melted "throughout the entire component" to obtain the "granular but closed plastic foam structure" rather points to the inextricable link between the process step of "feeding steam to the particles" and the resultant material structure of "a granular but closed plastic foam structure" instead of suggesting alternative ways of providing heat. Indeed, steam disperses easily throughout the entire component whilst other ways of applying heat would not necessarily

provide the desired heating gradient throughout the whole component.

1.5 Finally, as correctly pointed out by the Opposition Division (point 2 of the contested decision) whilst the feeding of steam is indeed a process feature, as submitted by AP1, it leads to a specific gradient of heat that will have an impact on the bond between the particles and therefore will structurally characterize the final structure as compared to products obtained by a different (heating) process.

1.6 As a consequence, the subject-matter of claim 1 of the main request extends beyond the content of the originally filed application.

2. Auxiliary Requests 1, 2 and 4 to 11 - Article 123(2) EPC

2.1 The auxiliary requests 1, 2, and 4-11 also contravene the requirements of Article 123(2) EPC.

2.2 Claim 1 of auxiliary request 1 and 4 to 11 recites the same feature as claim 1 of the main request according to which the first surface region comprises an expanded thermoplastic polyurethane (eTPU) in the form of particles that are bonded to a granular but closed plastic foam structure, but fails to define the feature relating to the feeding of steam and thus is not allowable for the same reasons given above.

2.3 Claim 1 of auxiliary request 2 also does not comprise the feature relating to the feeding of steam but generally recites "providing heat". As explained under point 1 above, the feeding of steam is inextricably linked to the obtainment of the claimed structure, the

latter being not necessarily obtained by any other means of applying heat.

In view of this conclusion, there is no need to discuss the issue of admissibility of auxiliary request 2 raised by AP3 (reply dated 17 September 2019, point 3.1).

3. Auxiliary request 3 - Novelty in view of D1

3.1 The subject-matter of claim 1 of the auxiliary request 3 is new over document D1 (Article 54 EPC).

3.2 AP3 is of the opinion that D1 takes away the novelty of claim 1 and 12.
AP3 mainly referred to paragraphs [0006] and [0080-0084] and pointed out that the process described therein automatically led to the feature "a granular but closed plastic foam structure". According to the reply of AP3 dated 7 August 2020 (point 5.2.2), D1 disclosed the application of pressure in the mold, see paragraph [0081], wherein the steam had a temperature of 100°C to 140°C, while paragraph [0092] specified that at this temperature the steam had a pressure from 1.0 bar to 4.0 bar. Furthermore paragraphs [0092, 0093] disclosed that the foam beads *"were charged into a preheated mold with pressure and compaction"* and later that *"the mold was then depressurized*". Thus D1 disclosed the same method as the patent in suit. Consequently also the achieved foam structure must be the same.
The patent in suit did not provide any specific explanation of the term "closed structure". Therefore it could be understood in a broad sense, e.g. that the outer surface of the molded article was closed but the internal structure still might have gaps or voids. Such

gaps anyway would be at least at microscopic level unavoidable.

Referring to the two surface regions, AP3 argued that the second surface region and its properties were disclosed in paragraphs [0084, 0085], as an insole made of eTPU, positioned at the top of a sole structure, typically was smaller than the sole structure. Thus the outer edge of the sole not being covered by the insole presents the second surface region being, on a regular basis, free from eTPU.

3.3 AP1 was of the opinion that the process described in D1, paragraphs [0080, 0081], did not inevitably lead to a "granular but closed plastic foam structure" as shown in fig. 14a (1430) of the patent. It could also lead to a granular foam structure with larger voids or channels between the particles or to an homogenous foam structure as e.g. the range of pressure (1.0-4.0 bar) was very broad. It was unclear what kind of foam structure would be obtained when varying the manufacturing parameters over the ranges mentioned ion D1 (reply dated 14 September 2020, point B.1.b5).

Additionally AP1 denied the direct and unambiguously disclosure of the features concerning the second surface region:
- the sole comprises a second surface region (1.1)
- being free from expanded TPU (1.3)
- using a stiffer material in the remaining region of the sole (1.4).

3.4 The Board judges that claim 1 is new over D1 for the following reason:
D1 does not disclose directly and unambiguously a sole with a second surface region comprising a stiffer

material free from eTPU. D1, paragraph [0084, 0085] only discloses that eTPU can be used in energy absorbing moldings and that a shoe sole, a midsole or an insole can comprise eTPU. The argument of AP3 referring to the insole seems to be based on an ex post facto analysis.

3.5 However, contrary to the view taken by the opposition division in the contested decision, the Board agrees with AP3 that the feature "granular but closed plastic foam structure" should be given a broad interpretation and as such is not limited to a closed internal foam structure of the molded article, wherein the surfaces of the particles are completely closed without any voids or gaps.
The only reference in the patent in suit to a "granular but closed plastic foam structure" is in paragraph [0186] and Fig. 14a shows a "closed plastic foam structure". Considering that paragraph [0186] does not give any definition of what is intended by a "granular but closed plastic foam structure", that Fig. 14a is schematic and cannot be taken as a clear and unambiguous disclosure of a surface completely devoid of voids or gaps, and in any case does not exclude the presence of voids or gaps along the thickness of the structure, the Board takes the view that a "granular but closed plastic foam structure" as recited in claim 1 might well present voids or gaps. Finally, considering that in D1, as in the patent in suit, the expanded TPU is treated in a mold with the application of pressure and steam (see example 2, [92] of D1: foam beads are introduced in a mold, and the mold is heated by steam at 100-140°C and 1-4 bar), the Board concludes that a"granular but closed plastic foam structure" in the meaning explained above is also obtained in D1.

4. **Auxiliary request 3 - Inventive step**

The subject-matter of claim 1 of the auxiliary request 3 is not inventive in view of the combination of E1 with D1 (Article 56 EPC).

4.1 **Closest Prior Art**

4.1.1 The Board agrees with the opinion of the opposition division that E1 constitutes the closest prior art, as E1 discloses a sole for shoes and moreover has the most features in common with the claimed sole.

4.1.2 E1 (fig. 7 to 9) discloses a sole comprising a shock-absorbing layer 32, a stiffening insert 31 and a vapor-permeable element 10 (see AP3, grounds of appeal, page 20). According to paragraph [0120] of E1 the shock-absorbing layer 32 can be made of eTPU. When assembled, the second surface region being free from eTPU is the region of the bridge of the insert 31 in the heel region of the sole.
The tread 33, being free from eTPU (E1, paragraph [0121]), is considered as an outer sole that entirely covers the first surface region similar to an additional outer sole described in the opposed patent (see e.g. patent, paragraph [0110], last sentence, with Fig. 2b, outsole 213, Fig. 3a, outsole 313, paragraph [0120] "continuous outsole" with Fig. 4a, outsole 413, Fig. 8 outsole 813).

4.2 As stated by the opposition division, claim 1 differs from the sole of D1 only in that the eTPU has the form of particles that have been bonded to each other by feeding steam to the particles to form a granular but closed plastic foam structure.

4.3 The technical problem can thus be considered as choosing an appropriate eTPU that can be used for the shock-absorbing layer of the sole of E1.

4.4 The Board agrees with the argumentation of AP3 and considers, as the opposition division in the contested decision did, that the skilled person would take D1 into consideration, as this document deals with providing moldable TPU foams that have good performance in relation to elasticity and to temperature variation (paragraph [0006]). D1 teaches that the disclosed eTPU can be used in energy absorbing moldings, e.g. in midsoles (paragraph [0084, 0085]). The skilled person would therefore be prompted to combine the teachings of E1 and D1 and would use the eTPU as taught by D1 for the shock-absorbing layer 32, arriving as a consequence at the eTPU as defined in claim 1.
This conclusion is in line with T0130/89 cited by AP3 (see also Case Law of the Board of Appeal, 9th Edition, I.D.9.6), wherein it is stated that "*the use of a known material on the basis of its known properties and in a known manner to obtain a known effect in a new combination is not normally inventive ("similar use")*".

4.5 AP1 argued (reply 17 September 2019, point VI.(2)) that E1 already has a solution for shock-absorption. Replacing injection molded materials like EVA, PU, TPU or latex foams as disclosed by E1 would lead to technical difficulties necessitating non-obvious adjustments. The mentioned eTPU would also be understood by the skilled person as being an injection molded eTPU. It would not be possible to produce the structure, in particular the thin bridges of layer 32, with steam chest molding. Furthermore the achieved granular structure would not be stable enough for the thin bridges.

In addition with the tiny bridge of the stiffening insert 31 no increased stability of the sole according to feature 1.4 could be achieved.
AP1 emphasized that the method described in D1 would not lead to a closed structure in the sense of claim 1 (reply of AP1, V.(2)).

4.6 These arguments are not convincing for the following reasons:
E1 discloses an expanded TPU (paragraph [0120]). As E1 does not disclose what kind of eTPU is used, the skilled person has an incentive to look in the prior art for suitable eTPUs. As argued by AP3, D1 discloses very small diameters of the particles which seem to be suitable to manufacture a shape according to the shock-absorbing layer 32 of E1. D1 discloses beads with a diameter of only 0,2mm (paragraph [0079]). Additionally D1 (paragraph [0080]) teaches that the foams can be moldings with complicated geometry.
The stiffening insert 31 is described (E1, paragraph [0102]) as being a torsional stiffening insert. Such inserts have the function of preventing torsional deformation of the sole. This effect is inter alia reached by providing the connecting bridge. Therefore the Board is of the opinion that E1 discloses feature 1.4.
Regarding the granular but closed foam structure in D1 reference is made to point 3.5 above.

4.7 Consequently the claimed sole does not involve an inventive step starting from E1 and applying the teaching of D1.

5. **Auxiliary requests 12, 13 - Admissibility**

5.1 The Board did not admit auxiliary requests 12 and 13 into the appeal procedure.

5.2 Auxiliary request 12 is based on the claims as granted, wherein the product claims have been deleted. Auxiliary request 13 is based on the claims of auxiliary request 2, wherein the product claims have been deleted. Both requests were filed after the parties had been summoned to oral proceedings.

5.3 AP1 argued that the amendments in auxiliary requests 12 and 13 would not be an amendment to the case as they contained no new subject-matter. Therefore Article 13 RPBA would not be applicable. The method claims were part of the granted patent. The opponents did not raise particular objections to the method claim, but only referred to the objections raised in view of the product claim. The fact that the opponents failed to attack all independent claims properly at an earlier stage of the procedure could not be used to the detriment of the patent proprietor.

5.4 AP2 and AP3 requested not to admit auxiliary requests 12 and 13 as they were late filed.
AP3 pointed out that method claim 12 of the patent as granted was never separately discussed and that the opposition division did not decide on the method claim. The features of claim 12 involved issues going beyond those discussed in relation to the product claim. There was no need to discuss these issues at an earlier stage, in particular the issues relating to the co-molding feature, as the features of claim 12 that corresponded to claim 1 were already considered inventive by the opposition division.
The attacks against the product claims were on the table since the beginning of the opposition procedure

and since the beginning of the appeal procedure. Thus, an auxiliary request with the method claim as sole independent claim should have been filed earlier. The late filing was not occasioned by a submission of the opponents or by the preliminary opinion of the Board. AP1 did not provide cogent reasons for the late filing. Furthermore auxiliary request 13 would not prima facie meet the requirements of Article 123(2) EPC.

5.5 In the present case, the summons to oral proceedings was notified after 1 January 2020, the date on which the RPBA 2020 entered into force. Thus Article 13 RPBA 2020 is applicable regarding the question whether to admit the appellant's requests into the appeal proceedings.
Under Article 13(1) RPBA 2020, the boards have discretion to admit and consider any amendment to a party's case after it has filed its grounds of appeal or reply. Under Article 13(2) RPBA 2020, any amendment to the party's appeal case shall, in principle, not taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

5.6 The Board is aware of T 1480/16 wherein an auxiliary request, filed during oral proceedings and based on an auxiliary request on file from which only the method claims were deleted, were admitted into the appeal procedure. In T 1480/16, the Board found that the amended auxiliary request does not constitute an amendment of the case in particular as the discussion in view of novelty and inventive step would be the same.

5.7 The present case lies differently. The method claim indeed is more limited than the product claim because

of features 12.1 and 12.2 wherein a mold is loaded with two different materials before the step of feeding steam. These features did not play any role in the appeal procedure, as the submissions of the parties were mainly related to the product claims that were present in all requests on file. However, these features would require to be considered in particular in relation to the issue of inventive step and this would result in a substantial and unexpected change in the discussion at the oral proceedings. Therefore the filing of auxiliary requests 12 and 13 constitute an amendment of the patentee's case according to Article 13 RPBA 2020 rendering them inadmissible into the appeal proceedings.
The patentee did not provide any exceptional circumstances, which have been justified with cogent reasons, why auxiliary request 12 and 13 were only filed at such a late stage of the procedure. Hence both auxiliary requests are not taken into account according to Article 13(2) RPBA 2020.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated