

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZERO GRAVITY INSIDE INC.,
Petitioner,

v.

FOOTBALANCE SYSTEM OY,
Patent Owner.

Case IPR2015-01770
Patent 8,171,589 B2

Before MEREDITH C. PETRAVICK, JEREMY M. PLENZLER, and
TIMOTHY J. GOODSON, *Administrative Patent Judges*.

PLENZLER, *Administrative Patent Judge*.

DECISION
Denying *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Zero Gravity Inside Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–3 (“the challenged claims”) of U.S. Patent No. 8,171,589 (Ex. 1001, “the ’589 patent”). Paper 1 (“Pet.”). FootBalance System Oy (“Patent Owner”) filed a Preliminary Response. Paper 16 (“Prelim. Resp.”). We review the Petition according to 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons given below, we do not institute an *inter partes* review in this proceeding with respect to any of the challenged claims.

B. Related Matters

Petitioner and Patent Owner indicate that the ’589 patent is the subject of the co-pending federal district court case *FootBalance System Inc. et al. v. Zero Gravity Inside, Inc.*, 15-cv-01058 (S.D. Cal.). Pet. 1; Paper 5, 1.

C. Asserted Grounds of Unpatentability and Evidence of Record

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 103 based on the following grounds (Pet. 21–60).

References	Claims Challenged
Cumberland ¹ and Dieckhaus ²	1–3
Cumberland, Eschweiler, ³ and Campbell ⁴	1–3

¹ U.S. Pat. No. 5,027,461, iss. Jul. 2, 1991 (Ex. 1005, “Cumberland”).

² U.S. Pat. No. 6,543,158 B2, iss. Apr. 8, 2003 (Ex. 1006, “Dieckhaus”).

³ U.S. Pat. No. 6,560,902, iss. May 13, 2003 (Ex. 1007, “Eschweiler”).

⁴ U.S. Pat. App. Pub. No. US 2004/0194352 A1, pub. Oct. 7, 2004 (Ex. 1008, “Campbell”).

Petitioner also provides testimony from Haskell Beckham, Ph.D. (Ex. 1002, “the Beckham Declaration”) and Chimba Mkandawire, Ph.D. (Ex. 1030, “the Mkandawire Declaration”).

D. The '589 Patent

The '589 patent is directed to forming insoles for shoes. Ex. 1001, 1:14–16. The '589 patent explains that “[t]he inventive concept makes it possible to finalize customised insoles [in] only a few minutes” at a retailer. *Id.* at 5:46–48. The retailer may have a number of insole preforms, a molding stand with one or more casting pads, and a heating system. *Id.* at 5:63–6:3. A pair of preforms is selected and “heated up to a temperature that enables reformation of at least predetermined portions thereof as a response to a physical force introduced on them.” *Id.* at 7:65–8:1. The '589 patent explains that the preform materials have a softening temperature that is tolerable by a client (e.g., 85° Celsius), and provides a list of exemplary materials that meet this objective. *Id.* at 4:14–20, 8:1–4. In the example provided, “the heated preforms are preferably placed on a flexible material like a casting pad . . . and the client is instructed to introduce force via his soles to the preform surfaces []while the clerk guides the client’s feet to a proper position.” *Id.* at 8:14–18. The insoles are available for use once their temperature is below the glass transition temperature of the material used. *Id.* at 8:41–44.

E. Illustrative Claim

As noted above, Petitioner challenges claims 1–3 of the '589 patent. Claim 1 is the only independent claim challenged, and claims 2 and 3 depend from claim 1. Claim 1 is reproduced below:

1. A method of producing an individually formed insole, comprising the steps of:

providing an insole preform that comprises

at least one layer made of thermoplastic material of one of the following: ABS, PVC, A-PET and PETG, said thermoplastic material becoming plastic above its glass transition temperature, which is substantially under 95° C. and above 45° C., wherein the at least one layer of thermoplastic material is configured to reach out from under a heel of a foot only to the metatarsophalangeal joint of the foot, and

a lower layer configured to be placed against the footwear, wherein the lower layer is configured to reach from under the heel to the metatarsophalangeal joint and extend further to a toe of the foot;

heating the preform above the glass transition temperature of the thermoplastic layer in case the preform lacks preheating;

guiding the client to step on the heated preform;

adjusting the client's foot so that the plantar arch settles to a normal high position;

adjusting the angle of the ankle to the right position; and

waiting for the temperature of the heated insole preform to drop under the glass transition temperature of the thermoplastic.

Ex. 1001, 9:26–51.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification in which they appear and the understanding of those skilled in the relevant art.

37 C.F.R. § 42.100(b). Under that standard, claim terms are interpreted

according to their ordinary and customary meaning in the context of the patent's written description. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner and Patent Owner each propose constructions for several terms. Pet. 16–21; Prelim. Resp. 18–24. Neither party, however, offers an express construction of “the right position” recited in claim 1’s step of “adjusting the angle of the ankle to the right position,” which is the only term we need to address in order to reach our decision in this proceeding.

Our rules state that “the petition must set forth . . . [h]ow the challenged claim is to be construed” (37 C.F.R. § 42.104(b)(3)) and “[h]ow the construed claim is unpatentable” (37 C.F.R. § 42.104(b)(4)). The only discussion in the Petition of “adjusting the angle of the ankle to the right position” is with respect to the teachings of Cumberland alleged by Petitioner, where Petitioner contends that “Cumberland discloses this step.” Pet. 41. In its challenges, Petitioner never explicitly states that adjusting the ankle to any particular position meets the “right position” limitation. When discussing the teachings of Cumberland relative to this limitation, however, Petitioner contends that “a POSA would therefore understand that the purpose of Cumberland ‘selectively adjust[ing] [the] positioning of the foot’ would be to obtain the normal (i.e., ‘right’) arch position of the foot.” Pet. 42 (citing Ex. 1002 ¶ 135). Petitioner further notes that:

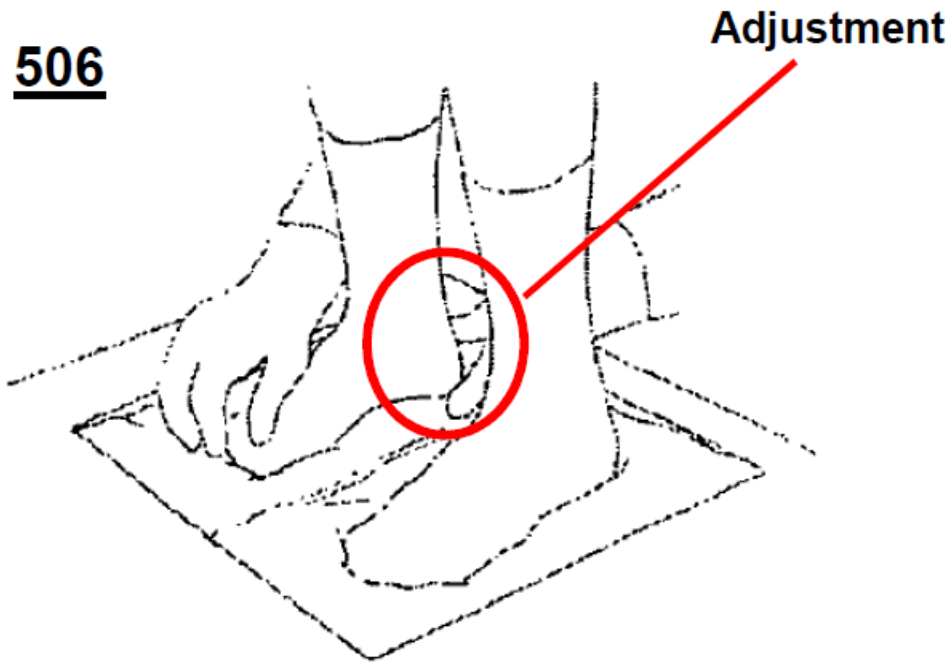
Dr. Mkandawire explains that in order to determine a person’s need for arch supports, their unique foot shape must be determined which is commonly done when the foot and ankle are in a neutral position – i.e., the foot is flat on the ground, the ankle forms a right angle, and the foot is neither pronated (pointed inwards and downwards) nor supinated (pointed outwards and upwards).

Id. at 41–42 (citing Ex. 1030 ¶ 38). Thus, Petitioner appears to contend that one skilled in the art would consider the ankle forming a right angle when the foot is flat on the ground as meeting the “right position” of the ankle limitation in the challenged claims. *See* Pet. 41–43 (citing Ex. 1030 ¶¶ 38, 72), 59.

Absent from the Petition and cited portions of the Beckham and Mkandawire Declarations, however, is any explanation as to why “the right position” of the ankle recited in the challenged claims requires the “right angle” discussed in Petitioner’s challenge. For example, the cited portion of the Mkandawire Declaration repeats what is stated above from the Petition and additionally cites page 2 of Exhibit 1041 for support. The cited portion of Exhibit 1041, however, is neither explained in the Petition nor in paragraph 38 of the Mkandawire Declaration. Page 2 of Exhibit 1041 discusses the subtalar joint neutral (STJN) position, which it describes as “the position in which the foot is neither pronated [n]or supinated.” Ex. 1041, 2. Exhibit 1041 further explains that “current methods of measuring the STJN position are unclear.” *Id.*

Patent Owner appears to disagree with Petitioner’s contentions regarding Cumberland’s teaching regarding “the right position” of the ankle. *See* Prelim. Resp. 33 (“Petitioner comments about forming a ‘right angle’ at the ankle, but does not explain how this bears any relevance to the ‘right position’ of the ‘ankle’ recited in claim 1.”). Patent Owner, however, also fails to provide any interpretation of that limitation. Instead, Patent Owner simply contends that the ’589 patent describes “adjusting the ankle to a proper position.” Prelim. Resp. 30–31. Specifically, Patent Owner notes that “[t]he ’589 Patent describes at step 210 and depicts in Figure 5 at

reference numeral 506 adjusting the ankle to a proper position,” and provides an annotated version of a portion of Figure 5 from the ’589 patent, reproduced below. *Id.* (citing Ex. 1001, 8:14–18).



The annotated figure illustrates numeral 506 of Figure 5, which depicts positioning a foot to form an insole and includes Patent Owner’s annotation labeling a hand grasping the heel of the foot as “adjustment.” Patent Owner fails to offer any explanation as to how the cited figure and text from the ’589 patent are relevant to understanding what is meant by “the right position” of the ankle recited in claim 1.

We note that claim 1 additionally recites “adjusting the client’s foot so that the plantar arch settles to a normal high position.” The ’589 patent explains that “[t]he plantar arch can be adjusted to a proper high position by pulling the client’s toe up and/or by lifting his/her heel up while keeping the toes against a support surface.” Ex. 1001, 4:56–59. The portion of Figure 5 reproduced above illustrates pulling the toes of the foot upward and grasping

the heel of the foot, which seems to correspond to the '589 patent's description of plantar arch adjustment, rather than the ankle adjustment alleged by Patent Owner.

Even if the annotated portion of Figure 5 from the '589 patent could be viewed as adjusting the ankle, we are not apprised of how it defines "the right position" of the ankle recited in the challenged claims. The description of the alleged "adjusting" at step 210 also fails to inform us as to the meaning of the term. The cited portion of the '589 patent explains that

In step 208 the heated preforms are preferably placed on a flexible material like a casting pad (e.g. a pillow/cushion) of a molding stand, for example, and the client is instructed to introduce force via his soles to the preform surfaces []while the clerk guides the client's feet to a proper position and manually, shapes, by physical interaction, e.g. through fingertips, the insoles to conform to the feet and achieve an improved mold according to the principles of the invention, see step 210 in FIG. 2 and numeral 506 in FIG. 5.

Ex. 1001, 8:14–22. Noticeably absent from the portion of the '589 patent reproduced above is any reference to an ankle, and step 210 in Figure 2 simply states "CORRECT THE FOOT/FEET POSITION AND RESHAPE THE INSOLE."

Based on our review of the specification of the '589 patent, we see no guidance as to what meaning was intended for "the right position" of the ankle. Further, we are apprised of no persuasive reason why one skilled in the art would read "the right position" of the ankle as the ankle forming a 90 degree angle when the foot is flat on the ground as required by Petitioner's challenges.

Although the prosecution history of the '589 patent is in the record (see Ex. 1003), neither party provides any guidance as to how it affects our

construction of “the right position” of the ankle. After reviewing the prosecution history, we are apprised of no further guidance in construing that limitation.

By failing to provide an adequate (or any) construction of “the right position” of the ankle, and with no clear guidance from the specification, prosecution history of the ’589 patent, or any other evidence as to the correct construction of that limitation, Petitioner has failed to explain sufficiently its contentions regarding the challenged claims.

Accordingly, Petitioner has failed to establish a reasonable likelihood of success at trial on its challenges, and we do not institute an *inter partes* review of claims 1–3.

III. ORDER

For the reasons given, it is

ORDERED that no *inter partes* review is instituted.

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