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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* HEIDRUN GIGJA RAGNARSDOTTIR,  
ARINBJÖRN VIGGO CLAUSEN,  
HJORDIS THORHALLSDOTTIR, and  
HELGI JÓNSSON

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Appeal 2018-003559  
Application 14/573,220  
Technology Center 3700

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Before MICHAEL L. HOELTER, BRADLEY B. BAYAT, and  
FREDERICK C. LANEY, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 24–31, 34, 35, 37–41, and 43 (all the claims on appeal). Claims 1–23 have been cancelled. Claims 32, 33, 36, and 42 have been withdrawn. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “Ossur hf.” Appeal Br. 2.

### CLAIMED SUBJECT MATTER

The disclosed subject matter relates “to systems and methods having a motion-controlled limb and, in particular, an ankle-motion-controlled foot.” Spec. ¶ 2. Method claim 24 is the sole independent claim, is illustrative of the claims on appeal, and is reproduced below.

24. A method of controlling operation of a prosthetic ankle device comprising a foot unit and a lower limb member rotatably connected to each other about a pivot location near the pivot location of an otherwise natural human foot, the method comprising:

collecting data with one or more sensors located on the prosthetic ankle device while the prosthetic ankle device is connected either to a tibial stump of a transtibial amputee or to a separate prosthetic knee device worn by a transfemoral amputee, while a user of the prosthetic ankle device is moving;

processing data received from the one or more sensors to determine a current state of locomotion for the prosthetic ankle device; and

when the prosthetic ankle device is determined to be in a stance position during locomotion, actuating an actuator to input a mechanical motion to rotate the foot unit relative to the lower limb member about the pivot such that an angle between the foot unit and the lower limb member increases toward a plantarflexion position toward the end of the stance phase.

### EVIDENCE

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Yasui et al. (“Yasui”)	US 2003/0163206 A1	Aug. 28, 2003
Herr (“Herr ’195”)	US 2004/0064195 A1	Apr. 1, 2004
Bedard (“Bedard ’710”)	US 2006/0122710 A1	June 8, 2006
Bédard (“Bédard ’998”)	US 7,137,998 B2	Nov. 21, 2006
Herr et al. (“Herr ’633”)	US 8,075,633 B2	Dec. 13, 2011

## REJECTIONS

Claim 40 is rejected under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement.

Claims 24–31, 34, 35, 37–41, and 43 are rejected under 35 U.S.C. § 103(a) as obvious over Bedard '710 and Herr '195, as evidenced by Yasui, Herr '633, and Bédard '998.

## ANALYSIS

*The rejection of claim 40  
as failing to comply with the written description requirement*

Claim 40 depends from independent claim 24. The Examiner asserts that “applicant did not have possession” of the entirety of the additional limitation recited in claim 40, and emphasizes the portion reciting “member at least when in a stance phase during locomotion.” Final Act. 4 (italics and underlining removed). No further explanation or analysis is provided. Appellant contends, “[b]ecause the Examiner provides no explanation, the Examiner has failed to meet this initial burden, and the rejection is clearly improper.” Appeal Br. 4.

Thereafter, the Examiner provides two reasons for this written description rejection. *See* Ans. 11. The Examiner first addresses the claim language “at least,” and interprets this phrase as encompassing “all other phases in addition to the stance phase” as well as including “any type of locomotion or movement.” Ans. 11. The Examiner states that Appellant’s Specification “does not reasonably convey to one skilled in the art” that the above interpreted scope was disclosed when reciting “movement of the

prosthetic foot relative to the lower limb member at least when in a stance phase during locomotion.” Ans. 11.

We are not in agreement with the Examiner’s broad interpretation of the claim phrase “at least.” *See above, see also* Reply Br. 2–3. More specifically, we disagree with the Examiner that this phrase is to be interpreted so broadly (i.e., “all other” and “any type”). Instead, we review Appellant’s usage of this term in Appellant’s Specification (*see, e.g.,* Spec. ¶¶ 8, 9, 14, 16, 46, 51, 52) and note that such usage is consistent with the normal dictionary definition of this term, i.e., “smallest in size or degree.” *See* <https://www.merriam-webster.com/dictionary/at%20least>. As such, we understand the claim phrase “at least” (consistent with Appellant’s Specification) as meaning, at a minimum, inclusion of the phase or movement specifically recited, and also that other phases or movement may additionally be included, but are not required. We thus do not sustain the Examiner’s rejection of claim 40 which is based on the Examiner’s broad interpretation of the phrase “at least” as enumerated above.

The Examiner also addresses the recitation, in claim 40, to “a preprogrammed algorithm.” *See* Ans. 11–12. As expressed, “the [E]xaminer finds no algorithm whatsoever in the entire specification.” Ans. 11. The Examiner explains that “the claimed invention does not satisfy the written description requirement if detail of how the function is to be performed are not disclosed.” Ans. 12. Appellant replies identifying Paragraph 90 of Appellant’s Specification which “explicitly recites a ‘preprogrammed algorithm’ and paragraph [0107] describes such an algorithm.” Reply Br. 3, *see also* Appeal Br. 4–5.

Indeed, Paragraphs 90 and 107 of Appellant's Specification are as Appellant asserts. Additionally, Paragraph 106 thereof includes Table 2 which is described as illustrating "possible ankle motion strategies for one embodiment of the invention." Paragraph 106 recites:

The first column of TABLE 2 lists different types of locomotion types or gait patterns that may be frequently detected. The second column of TABLE 2 identifies examples of ankle angle adjustment of the prosthetic or orthotic device during the swing phase of each of the identified locomotion types.

In view of the rather explicit disclosures in Appellant's Specification noted above, we are not in agreement with the Examiner's conclusion on this point. *See* Ans. 11–12. More specifically, we do not agree with the Examiner that Appellant's Specification lacks a disclosure of an "algorithm," or that Appellant's Specification lacks "detail of how the function is to be performed." Ans. 11–12. We thus do not sustain the Examiner's rejection of claim 40 based on the phrase "a preprogrammed algorithm" as enumerated above.

In summation, we do not sustain the Examiner's rejection of claim 40 "as failing to comply with the written description requirement." Final Act. 3.

*The rejection of claims 24–31, 34, 35, 37–41, and 43 as obvious over Bedard '710 and Herr '195, as evidenced by Yasui, Herr '633, and Bédard '998*

It is noted from the Examiner's rejection of these claims (*see* Final Act. 4) that the references to Yasui, Herr '633, and Bédard '998 are in terms of providing supporting evidence. The main thrust of the Examiner's

rejection, instead, focuses upon Bedard '710 and Herr '195. Unless required for clarity, we also focus our attention upon Bedard '710 and Herr '195.

Appellant argues all the claims (i.e., claims 24–31, 34, 35, 37–41, and 43) together. *See* Appeal Br. 5–8. Appellant additionally presents further arguments for dependent claim 30. *See* Appeal Br. 8–9. Accordingly, we select independent claim 24 and dependent claim 30 for review, with the remaining claims (i.e., claims 25–29, 31, 34, 35, 37–41, and 43) standing or falling with their parent claim 24. *See* 37 C.F.R. § 41.37(c)(1)(iv).

#### Claim 24

The Examiner primarily relies on Bedard for teaching “a method of controlling operation of a prosthetic.” Final Act. 5. The Examiner also relies on Paragraph 75 of Bedard, which teaches that the invention is not limited to the configuration illustrated, but that the control system may also be “*used with a prosthesis having an ankle joint.*” *Id.* at 6 (emphasis provided by Examiner). The Examiner refers to Herr '195 to establish a known desire to mimic more accurately a healthy limb. *Id.* (referencing Herr '195 ¶ 3, Fig. 8).

Appellant acknowledges that the Examiner proposes “modifications to prior art devices” but that “[c]laim 24 includes far more detailed structures than those listed in the Final Office Action.” Appeal Br. 6. Appellant states that the Examiner “does not explain how these modifications would be made or the reason one of skill in the art would make the modifications.” *Id.* For example, Appellant acknowledges the Examiner’s findings based on a desire to “meet the needs of the patient” and “mimic the natural body,” but Appellant argues that these reasons “cannot be sufficient when the prior art . . . yet failed to teach the subject matter of the claims.” *Id.*; *see also* Reply

Br. 4 (“there is still incredible room for improvement in the field of prosthetic ankles”). Thus, Appellant does not appear to challenge the Examiner’s reasons to combine<sup>2</sup> as much as Appellant challenges the prior art’s failure to “teach the subject matter of the claims,” which recites “a prosthetic *ankle* device.” Appeal Br. 6, 10 (Claims Appendix) (emphasis added).

On this point, Appellant addresses Bedard noting that “it can be used **with** a prosthesis having an ankle joint” and that Bedard’s figures “show knee prostheses **with** ankles.” Appeal Br. 6. “However, the ankles are drawn in phantom lines, indicating that they are a distinct part used **with** a knee prosthesis.” Appeal Br. 6. Appellant continues, “Bedard instead teaches an **actuated knee** device with an **unactuated ankle** device.” *Id.*

The Examiner responds addressing Paragraph 75 of Bedard which states that the invention “can be used with a prosthesis having an ankle joint . . . in addition to a knee joint.” Ans. 14. From this, the Examiner finds, “[t]herefore, it is inherent that the Bedard [reference] teaches that the actuated/powerd prosthetic joint can include an ankle joint.” *Id.* at 15. The Examiner further references Paragraph 210 of Bedard which “defines ‘h’ as a variable with respect to one of the hip joint, knee joint, ankle joint, or metatarsophalangeal joint.” *Id.* at 15–16. Thus, according to the Examiner, “Bedard teaches calculating the trajectory, position, force generated, and force intended for each of the joints *including the ankle joint.*” *Id.* at 16

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<sup>2</sup> It is not disputed that Herr ’195 states, “[i]t is a further object . . . to provide essential elements needed for making prosthetic limbs that more accurately mimic the mechanical behavior of healthy human limbs.” Herr ’195 ¶ 3.

(emphasis added). As indicated above, the Examiner relies on Herr '195 for its disclosure in Figure 8 of “the stance phase of the prosthetic foot system” and that it is desirable to mimic the human foot. Final Act. 6–7.

Appellant acknowledges that Paragraph 210 of Bedard addresses the value “h,” but asserts that “variable ‘h’ is always paired with variable ‘g,’” and that “if ‘h’ can refer to any joint, then by the same reasoning ‘g’ can refer to any direction.” Reply Br. 5. Appellant thereafter applies this “‘g’ can refer to any direction” premise and, by showing how such logic ultimately fails, i.e., a knee is not rotatable in all directions, Appellant concludes that one skilled in the art “would understand Bedard to only describe a knee joint that is actuated.” *Id.*; *see also id.* at 6 (“Bedard does not specifically teach an actuated/powered prosthetic ankle joint”). However, even abiding by Appellant’s logic and reasoning, Appellant’s conclusion that Bedard only pertains to a knee joint does not diminish Bedard’s explicit disclosure which, instead, teaches otherwise, i.e., explicitly teaches the association of variable “h” with an “ankle” joint. Bedard ¶ 210.

Appellant further contends that “Bedard lacks any comparable ‘pneumatic springs’ or a ‘fluid transfer system’” of Herr '195 and thus Bedard “would not be capable of such transfers of energy, **even if it were moved from a knee to an ankle as required to meet the claimed features.**” Appeal Br. 7; *see also* Reply Br. 6. Appellant’s contention is not persuasive because the Examiner’s rejection is not Herr '195 in view of Bedard (which lacks such structure) but, instead, Bedard in view of Herr '195 (which is relied upon for teaching a desire to more accurately mimic a healthy limb). *See* Final Act. 4, 6; Herr '195 ¶ 3. In other words, Appellant does not explain how Bedard’s teachings, as applied to ankles as above,

cannot be combined with Herr '195's disclosure of "when the prosthetic ankle device is determined to be in a stance position" as illustrated in Figure 8 of Herr '195. Final Act. 6. Appellant also fails to explain why it is not obvious to "more accurately mimic the mechanical behavior of healthy human limbs" as expressed in Paragraph 3 of Herr '195. Hence, Appellant's contention that the Examiner "provides no justification" and that "[m]imicking the natural body" is not sufficient justification for the rejection" (Appeal Br. 7, 8) are not persuasive of Examiner error.

Accordingly, and based on the record presented, we sustain the Examiner's rejection of claims 24–29, 31, 34, 35, 37–41, and 43 as being obvious in view of Bedard and Herr '195.

### Claim 30

Claim 30 depends from claim 24 and additionally recites, "wherein the actuator comprises a motor that provides a pushing or pulling force to the foot unit with respect to the lower limb member to change the angle between the foot unit and the lower limb member." The Examiner does not initially address claim 30, stating instead, "[a]ll other limitations are self-evident." Final Act. 13. Appellant references *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) stating, "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Appeal Br. 8.

The Examiner responds, "it is the [E]xaminer's position that a powered/actuated ankle inherently comprises an actuator which inherently comprises a motor. See at least par. 0076 of Bedard . . . ." Ans. 16. Indeed, Paragraph 76 of Bedard discloses an actuator stating that "actuator (14)

usually includes an electrical motor.” Appellant does not address Bedard’s actuator including a motor, but instead asserts “Bedard does not specifically teach an actuated/powered prosthetic ankle joint.” Reply Br. 6. While it may be argued that Bedard does not “specifically teach” a powered prosthetic ankle, it is clear that Bedard teaches an invention that “can be used with a prosthesis having an ankle joint.” Bedard ¶ 75. Thus, Appellant’s assertion is not persuasive that the limitations of claim 30 would not have been obvious in view of Bedard and Herr ’195.

### CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
40	112(a)	Written Description		40
24–31, 34, 35, 37–41, 43	103(a)	Bedard, Herr ’195.	24–31, 34, 35, 37–41, 43	
<b>Overall Outcome<sup>3</sup></b>			24–31, 34, 35, 37–41, 43	40

No period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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<sup>3</sup> 37 C.F.R. § 41.50(a)(1) states: “The affirmance of the rejection of a claim on any of the grounds specified constitutes a general affirmance of the decision of the examiner on that claim.”