

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PERMOBIL, INC.,
Petitioner,

v.

PRIDE MOBILITY PRODUCTS CORPORATION,
Patent Owner.

Case IPR2013-00407
Patent 8,408,598 B2

Before BRIAN J. McNAMARA, JAMES B. ARPIN, and
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Permobil Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–13 (the “challenged claims”) of U.S. Patent No. 8,408,598 B2 (Ex. 1001, “the ’598 patent”). Paper 8 (“Pet.”). Pride Mobility Products Corporation (“Patent Owner”) filed a Preliminary Response. Paper 12 (“Prelim. Resp.”). On January 2, 2014, we granted an *inter partes* review for all challenged claims on certain grounds of unpatentability alleged in the Petition. Paper 13 (“Dec. to Inst.”).

After institution of trial, Patent Owner filed a Patent Owner Response (Paper 23, “PO Resp.”) to which Petitioner filed a Reply (Paper 26¹).

Oral hearing was held on July 31, 2014.²

The Board has jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Petitioner has shown, by a preponderance of the evidence, that claims 1–13 of the ’598 patent are unpatentable.

A. Related Proceedings

Petitioner indicates that the ’598 patent is asserted against Petitioner in *Pride Mobility Products Corp. v. Permobil, Inc.*, Case No. 2:13-cv-01999-LDD (E.D. Pa.). Pet. 1. The parent patent of the ’598 patent, U.S. Patent No. 8,181,992 B2, is the subject of an *inter partes* reexamination captioned Control No. 95/002,355; a district court litigation captioned *Pride*

¹ We cite the public version of Petitioner’s Reply because we do not rely on any of the confidential information in the version filed as “Parties and Board only” (Paper 27).

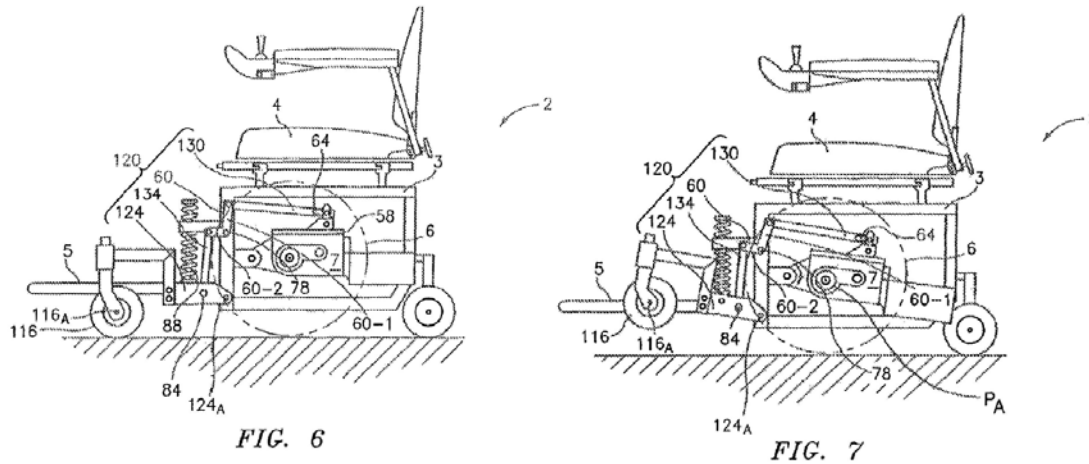
² A transcript of the oral hearing is included in the record as Paper 52 (“Tr.”).

Mobility Products Corp. v. Permobil, Inc., Case No. 2:12-cv-03931 (E.D. Pa.) (*id.*); and an *ex parte* reexamination captioned Control No. 90/013,376 (Paper 51). Petitioner also has filed another petition for *inter partes* review, IPR2013-00411, of claims 1–10 of a related patent, U.S. Patent No. 8,408,343 B2.

B. The '598 Patent

The '598 patent relates to active anti-tip systems for powered vehicles, such as powered wheelchairs. Ex. 1001, col. 1, ll. 22–23. More particularly, the '598 patent relates to a linkage arrangement for providing enhanced curb-climbing capability and/or pitch stability. *Id.* at col. 1, ll. 23–25. Anti-tip systems enhance stability of a wheelchair about its pitch axis and, in some of the more sophisticated anti-tip designs, improve the obstacle or curb-climbing ability of the wheelchair. *Id.* at col. 1, ll. 38–41. Both passive and active anti-tip systems were known in the art. *Id.* at col. 1, l. 47–col. 2, l. 31. Active anti-tip systems offered significant enhancements over passive anti-tip systems. *Id.* at col. 2, ll. 32–34. Nevertheless, the one-piece construction of active anti-tip systems required that both the drive-train assembly and the anti-tip wheel inscribe the same angle, which limited the vertical displacement of the anti-tip wheel. *Id.* at col. 2, ll. 34–41. The location of the pivot axis above the axis of the anti-tip wheel caused the anti-tip wheel to move downwardly when impacting an obstacle horizontally in line with the anti-tip wheel's rotational axis, instead of upwardly, as desired for climbing curbs. *Id.* at col. 2, ll. 42–51.

To address these issues, a linkage arrangement for an active anti-tip system within powered wheelchair 2 is disclosed in the '598 patent. *Id.* at col. 2, ll. 55–56. Illustrative Figures 6 and 7 are reproduced below:



Figures 6 and 7 depict an embodiment of the linkage arrangement in a resting position (Figure 6) and reacting in response to motor torque or acceleration of the vehicle (Figure 7). *Id.* at Figs. 6, 7, col. 3, ll. 38–44. The Specification states that, in Figure 6, linkage arrangement 120 employs suspension arm 124 having pivot point 124_A, which is positioned spatially at or below rotational axis 116_A of anti-tip caster wheel 116. *Id.* at col. 6, ll. 33–36. Anti-tip wheel 116 is a caster-type wheel and, as shown, is usually in contact with the ground. *Id.* at col. 6, ll. 40–42. Links 130 and 134 are connected operatively to drive-train assembly 7 and suspension arm 124. *Id.* at col. 6, ll. 36–37. First link 130 is connected pivotally to drive-train assembly 7 by a substantially vertical projection on drive-train mounting plate 58. *Id.* at col. 6, l. 66–col. 7, l. 1. Second link 134 is mounted pivotally to suspension arm 124, with bell-crank 60 operatively positioned therebetween. *Id.* at col. 6, ll. 37–40. Bell-crank 60 is mounted pivotally about pivot 78 on main structural frame 3. *Id.* at col. 6, ll. 49–51.

As depicted in Figure 7, bell-crank 60 redirects horizontal linear motion of drive-train assembly 7 to create a vertical motion of anti-tip caster wheel 116. *Id.* at col. 7, ll. 11–13. Bell-crank 60 increases the mechanical advantage for a given applied torque, thereby enabling a relatively close positioning of pivot connection 84 to pivot 124_A, while still resulting in significant motion by suspension arm 124. *Id.* at col. 7, ll. 13–17. As a result, anti-tip caster wheel 116 may traverse a larger vertical distance. *Id.* at col. 7, ll. 17–19. Furthermore, upon deceleration, drive-train assembly 7 lifts and creates a force, through linkage 120, that directs anti-tip wheel 116 into the ground and restricts the ability of suspension 88 to compress. *Id.* at col. 7, ll. 32–35. This arrangement limits the pitch of wheelchair 2. *Id.* at col. 7, ll. 35–36.

C. Illustrative Claim

Of the challenged claims, claims 1 and 7 are independent. Claims 2–6 depend, directly or indirectly, from claim 1; and claims 8–13 depend, directly or indirectly, from claim 7. Claim 1 is illustrative and is reproduced below:

1. A wheelchair comprising:
 - a frame;
 - a pair of drive wheels defining a drive wheel axis;
 - a drive assembly operatively coupled to at least one drive wheel of the pair of drive wheels, the drive assembly configured to rotate the at least one drive wheel about the drive wheel axis to thereby cause the wheelchair to move relative to a surface that defines a ground plane;
 - an arm pivotably mounted to the frame at an arm pivot axis; and

a caster wheel coupled to the arm, the caster wheel defining a rotational axis about which the caster wheel rotates,

wherein the vertical position of the arm pivot axis with respect to the ground plane when the caster wheel and the drive wheel are in contact with the surface is spaced from and positioned relatively below a straight line drawn between the drive wheel axis and the rotational axis of the caster wheel, and

wherein the arm is operatively coupled to the drive assembly such that the arm is configured to pivot about the arm pivot axis in response to torque created by rotation of the at least one drive wheel by the drive assembly so as to cause a responsive vertical movement of the caster wheel.

D. Prior Art Supporting the Instituted Challenges

The following prior art references were asserted in the instituted grounds:

Schaffner	US 6,129,165	Oct. 10, 2000	Ex. 1002
Goertzen	WO 02/34190 A2	May 2, 2002	Ex. 1003
Hosino	US 6,454,286 B1	Sept. 24, 2002	Ex. 1004

E. The Instituted Challenges of Unpatentability

The following table summarizes the challenges to patentability on which we instituted *inter partes* review:

Reference[s]	Basis	Claims challenged
Goertzen & Hosino	§ 103	1, 4–8, and 11–13
Goertzen, Hosino, & Schaffner	§ 103	2, 3, 9, and 10

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Also, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner argues that “pivotably mounted to the frame” means “mounted to the frame such that the arm is capable of rotating about a pivot axis.” Pet. 6–7 (citing Ex. 1001, col. 7, ll. 47–48 (“A suspension arm 224 is pivotally mounted to the frame 3 at pivot 224_A.”)). Patent Owner contends that Petitioner’s proposed construction “is vague because, when read in context of the rest of the claim language, it is unclear whether ‘a pivot axis’ in the construction is the recited ‘arm pivot axis’ or some different axis.” Prelim. Resp. 18. We are not persuaded by Patent Owner’s argument because each of claims 1 and 7 specifies that the arm is pivotably mounted to the frame “at an arm pivot axis.” However, we also are not persuaded by Petitioner’s argument that the patentee intended to give “pivotably mounted to the frame” a meaning other than its plain and ordinary meaning. Apart from the claims, the ’598 patent does not use the term “pivotably mounted,” and the portion of the ’598 patent cited by Petitioner describes a suspension arm as “*pivotaly* mounted,” not “*pivotably* mounted.” Ex. 1001, col. 7, ll.

47–48. Thus, we conclude that “pivotably mounted to the frame” does not require express construction.

B. The Level of Ordinary Skill in the Art

“The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). This person is of ordinary creativity, not merely an automaton, and is capable of combining teachings of the prior art. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420–21 (2007). The prior art itself can reflect the appropriate level of skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). In addition, judges on the Board are “persons of scientific competence in the fields in which they work,” and our findings are “informed by [our] scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art.” *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003).

In the Petition, Petitioner does not set forth its contention on the level of the ordinary skill in the art. Patent Owner proffers the testimony contained in the Declaration of Mr. Neil Curran (“Curran Declaration”) on the determination of the level of skill in the art appropriate for the ’598 patent. PO Resp. 28–31 (citing Ex. 2012 (Curran Decl.) ¶¶ 43–47). That testimony concludes that a person of ordinary skill in the art relevant to the ’598 patent would have three years of experience designing, developing, and testing curb-climbing systems for power wheelchairs. PO Resp. 28.

Petitioner disputes Mr. Curran’s opinion regarding the training and experience that one of ordinary skill in the art relevant to the ’598 patent would have had. Pet. Reply 10–12. Petitioner asserts that a person of

ordinary skill in the art would have had an undergraduate degree in mechanical engineering and (1) if (s)he had pursued post-graduate studies, at least one year of experience designing, developing, and testing wheelchairs; or (2) if she had not pursued post-graduate studies, at least three years of experience designing, developing, and testing power wheelchairs. *Id.* at 10–11.

We are not persuaded that the level of ordinary skill in the art required at least three years of experience specific to curb-climbing systems, as Patent Owner contends. The problems identified by Patent Owner and the skills required—e.g., “analysis of the various forces and moments,” “understanding of moment arms,” “understand[ing] the effects on moments and forces,” (PO Resp. 29–30)—are within the ordinary skill of a person with an undergraduate degree in mechanical engineering. Moreover, we note that the named inventor of the ’598 patent—James Mulhern—testified, in a related reexamination, that a person of ordinary skill in the art would have had only “a B.S. in mechanical engineering or equivalent, or at least 3 years of experience in the field of designing powered wheelchairs for personal mobility.” Ex. 1028 ¶ 10 (emphasis added).

Based on our review of the technology claimed in the ’598 patent and the description of the anti-tip systems for powered vehicles set forth in the specification, we determine that a person of ordinary skill in the art would have had either (1) an undergraduate degree in mechanical engineering or an equivalent degree; or (2) at least three years of experience designing powered wheelchairs for personal mobility.

C. Claims 1, 4–8, and 11–13 – Obviousness over Goertzen & Hosino

Petitioner argues that claims 1, 4–8, and 11–13 are unpatentable under 35 U.S.C. § 103(a) as obvious over Goertzen and Hosino. Pet. 34–39, 43–60. In support of this ground of unpatentability, Petitioner provides detailed explanations as to how each claim limitation is met by Goertzen and Hosino, and relies upon the Declaration of Dr. W. Mark Richter (Ex. 1008). *Id.*

Patent Owner counters that (1) Petitioner cannot meet its burden because it failed to set forth the level of skill in the art; (2) Petitioner does not articulate any reason why a person of ordinary skill in the art would have combined Goertzen with Hosino; (3) choosing a pivot location below the axis-to-axis line would not have been a routine design choice; and (4) objective considerations demonstrate the nonobviousness of the claims of the '598 patent. PO Resp. 7–57. As support, Patent Owner proffers the Curran Declaration. *Id.* (citing Ex. 2012).

Upon consideration of the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 4–8, and 11–13 are obvious over the combination of Goertzen and Hosino.

Goertzen (Exhibit 1003)

Goertzen describes a curb-climbing wheelchair having pivotal arm assemblies including pivot arms. Ex. 1003, Abstract. The pivotal arm assemblies include at least one front caster and have the ability to rotate or pivot. *Id.* The pivot arms rotate or pivot in response to moments generated by accelerating or decelerating the wheelchair, thereby raising or lowering the front casters through the rotational movement of the pivot arms. *Id.* By

raising or lowering the front casters, curb-like obstacles may be traversed in a low-impact manner. *Id.* Figure 3 of Goertzen is reproduced below:

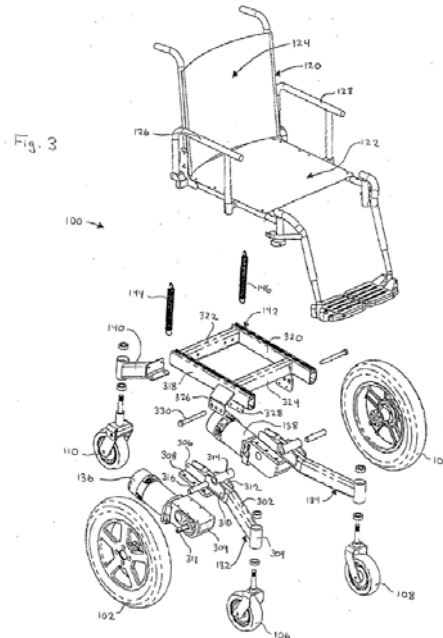
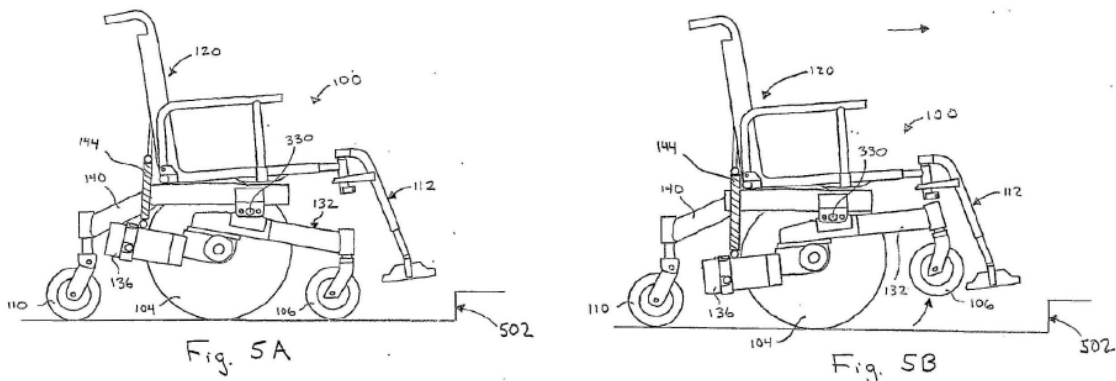


Figure 3 depicts suspension and drive components of wheelchair 100. *Id.* at 7, ll. 3–26, Fig. 3. As depicted in Figure 3, wheelchair 100 comprises frame 142, a pair of drive wheels 102 and 104, drive motor 136 coupled to pivot arm 132 through gearbox assembly 309 and mounting plate 308, drive motor 138 coupled to pivot arm 134 through a gearbox assembly and mounting plate, and front casters 106 and 108. *Id.* at 6, ll. 3–15, 7, ll. 3–26, Fig. 3.

Figures 5A and 5B of Goertzen are reproduced below:



Figures 5A and 5B depict the curb-climbing capability of wheelchair 100. As depicted in Figure 5A, wheelchair 100 approaches curb 502 of approximately two to four inches in height. *Id.* at 10, ll. 5–6. As depicted in Figure 5B, drive motors 136 and 138 are torqued, such as by the occupant directing the wheelchair to accelerate, to cause pivot arms 132 and 134 to pivot about pin 330 and to raise front casters 106 and 108 off the ground. *Id.* at 10, ll. 11–20.

Hosino (Exhibit 1004)

Hosino describes a traveling device, such as an electric-powered wheelchair, in which each wheel moves in conformity with uneven ground to allow comfortable driving thereon. Ex. 1004, col. 1, ll. 51–55. The traveling device comprises a truck member, acting as a platform and having a loop frame, a pair of front and rear casters, and a pair of left and right driving wheels. *Id.* at col. 1, ll. 57–62. The loop frame consists of a pair of side frame parts, each side frame part having a front section and a rear section divided by a bendable portion at which the side frame part is able to bend upwards and downwards. *Id.* at col. 1, ll. 63–67. Each bendable portion is located lower than a rotation axis of the driving wheel and as high as a rotation center of the front caster, such that the casters are able to ride over a projection in uneven ground. *Id.* at col. 2, ll. 36–44. Figure 1 of Hosino is reproduced below:

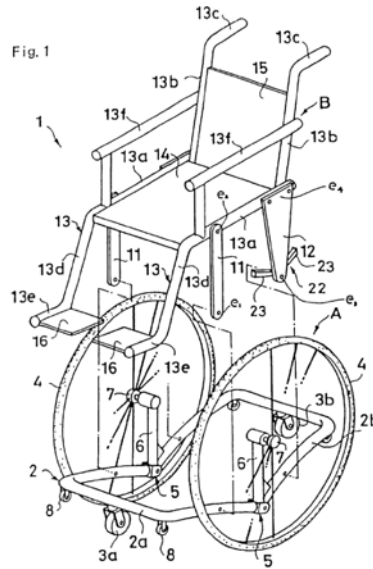


Figure 1 depicts a perspective view of the traveling device according to a first embodiment. *Id.* at Fig. 1. As depicted in Figure 1, loop frame 2 consists of front half-frame 2a and rear half-frame 2b. Front half-frame 2a has a pair of rear-end portions connected by a pivot to front-end portions of rear half-frame 2b to form bendable portion 5. *Id.* at col. 3, l. 64–col. 4, l. 5.

Figure 9 of Hosino is reproduced below:

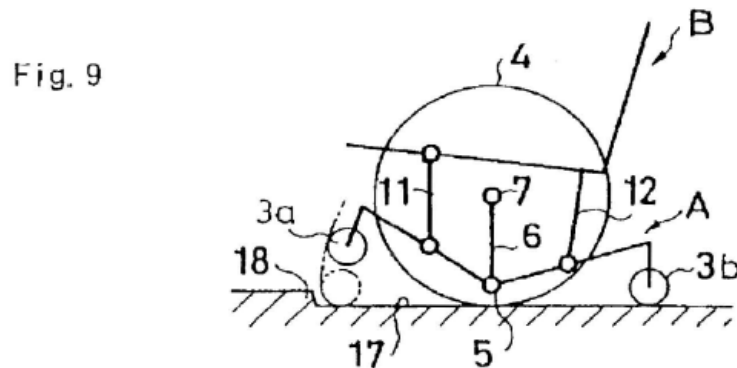


Figure 9 depicts the action of the traveling device when front caster 3a rides over projection 18 in uneven ground. *Id.* at Fig. 9. This structure facilitates travel over uneven ground because bendable portion 5 is located in a relatively low position. *Id.* at col. 4, ll. 13–15. In a preferred embodiment,

a drive assembly	drive motor 136 or 138
an arm	pivot arm 132 or 134
a caster wheel	front caster 106 or 108

In addition, claim 1 recites:

wherein the arm is operatively coupled to the drive assembly such that the arm is configured to pivot about the arm pivot axis in response to torque created by rotation of the at least one drive wheel by the drive assembly so as to cause a responsive vertical movement of the caster wheel.

Goertzen discloses that, “from preferably a standstill position, drive motors 136 and 138 are ‘torqued’ so as to cause pivot arms 132 and 134 to pivot about, for example, pin or bolt 330 and raise front casters 106 and 108 off the ground.” Ex. 1003, 10, ll. 11–22, Fig. 5B.

Claim 7 similarly recites:

wherein the arm is operatively coupled to the drive assembly such that (i) the arm is configured to pivot about the arm pivot axis in response to torque created by rotation of the at least one drive wheel by the drive, and (ii) the arm is configured to pivot about the arm pivot axis in response to braking.

As discussed above, Goertzen discloses that pivot arms 132 and 134 are configured to pivot about pin or bolt 330 in response to torque from drive motors 136 and 138. *Id.* at 10, ll. 11–22, Fig. 5B. Goertzen further discloses that pivot arm 132 is configured to pivot about the arm pivot axis in response to braking. *Id.* at 9, ll. 9–16, Fig. 4C.

Petitioner acknowledges that Goertzen does not disclose, as recited in claims 1 and 7, that:

the vertical position of the arm pivot axis with respect to the ground plane when the caster wheel and the drive wheel are in contact with the surface is spaced from and positioned

relatively below a straight line drawn between the drive wheel axis and the rotational axis of the caster wheel.

Pet. 39. Petitioner's Declarant, Dr. Richter, concludes, however, that:

It would have been obvious for one of ordinary skill in the art to position the pivot axis of the front arm in the Goertzen wheelchair below a line connecting the front wheel axis and the drive wheel axis, as is taught in Hosino, Mulhern '420, and Harakawa. A person of skill in the art would recognize that there are a limited number of design choices for the vertical position of the arm pivot axis – above the line, at the line, or below the line – and choosing one of these three options would be a routine design choice to a person of ordinary skill in the art. Doing so would be nothing more than a combination of known elements used for their known purpose and yielding predictable results.

Ex. 1008 ¶ 54. We find that there is sufficient evidence supporting the reasoning of the above-quoted analysis of Dr. Richter. See Ex. 1008 ¶¶ 52–54, 65.

Dr. Richter's Qualifications to Opine on the Reason to Combine

Patent Owner contends that the reason to combine articulated by Dr. Richter is insufficient because (1) Dr. Richter is not a skilled artisan; (2) Dr. Richter misunderstands the law of obviousness; and (3) Dr. Richter's testimony should be disregarded because he did not articulate whether and how a person of ordinary skill in the art would compensate for the effect on stability of the proposed modification to Goertzen. PO Resp. 11–26.

We are not persuaded by Patent Owner's argument that Dr. Richter is not a person of ordinary skill in the art because, as discussed above, we do not agree that such a person would have to have had three years of experience specific to curb-climbing systems. Dr. Richter has a B.S., M.S.,

and Ph.D. in mechanical engineering, and has been involved in the development of wheelchairs, including power wheelchairs, since 1995. Ex. 1008 ¶¶ 2–9. Accordingly, we determine that Dr. Richter is, at least, a person of ordinary skill in the art, and, therefore, is qualified to testify from the perspective of one of ordinary skill in the relevant art at the time of the invention.

We also are not persuaded by Patent Owner’s argument that Dr. Richter’s testimony cannot be accepted because he “has never heard of ‘hindsight,’” and misunderstands obviousness. PO Resp. 14–16. Dr. Richter’s understanding of the law of obviousness is not determinative. We rely on Dr. Richter’s testimony as to the facts of what a person of ordinary skill in the art would have known and understood at the time of the claimed invention, but not as to the ultimate legal conclusion of obviousness.

Finally, Patent Owner argues that Dr. Richter’s testimony should not be considered because he did not, in his Declarations, address the effect on stability of lowering the pivot. PO Resp. 16–19. The deposition testimony, however, does not support the notion that Dr. Richter ignored stability. Dr. Richter testified that lowering the pivot in Goertzen is safe only “[i]f done properly.” PO Resp. 19 (quoting Ex. 2004, 27:6–28:20); *see also* Ex. 1015, 28:21–30:12 (testifying that “[i]f done properly, [lowering the pivot] should have no – no adverse effect on [tipping over]” (emphasis added)). To the extent there was any doubt, Dr. Richter later testified that “there is no way in the world I would drop a pivot just because it has better obstacle climbing characteristics without taking into account its effect on stability.” Ex. 2004, 158:15–19. Accordingly, we do not agree with Patent Owner that Dr.

Richter did not recognize initially the effect on stability of lowering the pivot of Goertzen.

Patent Owner also faults Dr. Richter for not analyzing declines or deceleration, or doing any of the engineering that, according to Dr. Richter, would be necessary to compensate for the reduced stability caused by a lower pivot. PO Resp. 19–24. The question before us, however, is not whether Dr. Richter did the engineering necessary to combine the prior art into a functional prototype, but whether doing so would have been within the ability of a person of ordinary skill in the art at the time of the claimed invention. In that regard, we credit Dr. Richter’s testimony that a person of ordinary skill in the art would have known how to change various other parameters in order to achieve a stable version of the claimed invention. Ex. 2004, 185:23–186:14. Patent Owner asserts that the proposed modification is anything but routine (PO Resp. 24–26), but does not explain why such calculations would not have been within the ability of a person of ordinary skill in the art.

For the foregoing reasons, we are persuaded Petitioner has articulated sufficiently a reason with rational underpinnings for combining the teachings of Goertzen and Hosino to achieve the wheelchair recited in the challenged claims.

Whether a POSITA Could Compensate for Reduced Stability

Patent Owner contends that a person of ordinary skill in the art would not have considered moving Goertzen’s pivot below the axis-to-axis line to be a routine design choice because doing so would reduce stability. PO Resp. 27, 41. As support, Patent Owner analyzes a hypothetical version of

Goertzen in which the pivot has been lowered, and finds that the hypothetical chair is unstable because it is more prone to tip forward when descending a curb and when decelerating on a decline. PO Resp. 41–50. Compensating for this decreased stability, according to Patent Owner, “would be extremely difficult, if not impossible.” PO Resp. 50 (citing Ex. 2012 (Curran Decl.) ¶ 121).

Petitioner counters that (1) Mr. Curran’s analysis is based improperly upon the patent drawings; (2) a person of ordinary skill in the art would have known to make routine adjustments to compensate for the reduction in stability caused by lowering the pivot; and (3) Goertzen suggests several such adjustments. Pet. Reply 2–9.

We are persuaded that a person of ordinary skill in the art at the time of the claimed invention would have known how to compensate for the reduction in stability caused by lowering the pivot. As Petitioner points out, Goertzen teaches three design options for increasing stability. Pet. Reply 7–9. Patent Owner’s expert, Mr. Curran, addresses only two of these three options. Ex. 2012 ¶¶ 118–121. Moreover, Petitioner’s Declarant, Dr. Richter, testifies as to other ways in which a person of ordinary skill in the art would have known to compensate for the reduction in stability caused by lowering the pivot. Ex. 1015, 182:6–190:20. Mr. Curran does not explain adequately why those techniques would not have been known to a person of ordinary skill in the art.

For the foregoing reasons, we find that Petitioner has shown that a person of ordinary skill in the art would have known how to compensate for the reduction in stability caused by lowering the pivot of Goertzen.

Physical combinability of Goertzen and Hosino

Patent Owner argues that a person of ordinary skill in the art would not have looked to Hosino to modify the teachings of Goertzen because (1) the size of the caster wheels in Goertzen already would be higher than the obstacles at issue in Hosino; (2) Goertzen is directed to curb-climbing, whereas Hosino is directed to keeping its caster on the ground at all times for stability; and (3) Hosino does not include an arm that is pivotably mounted to the frame. PO Resp. 51–53.

Petitioner counters that (1) physical combinability of prior art references is irrelevant; and (2) the claims of the '598 patent are silent as to obstacle size and caster wheel size. Pet. Reply 4–5, 9.

We are not persuaded by Patent Owner's argument that a person of ordinary skill in the art would not look to Hosino to modify the teachings of Goertzen due to the physical differences and the different uses for the respective chairs. The principle taught in Hosino—that low pivot point enables a front caster wheel to move “rear upward” and thereby more easily rise up and overcome the obstacle—applies equally to Goertzen, regardless of the differences in front caster wheel size, and nature of the obstacle being overcome.

For the foregoing reasons, we find that Petitioner has shown adequately that a person of ordinary skill in the art would have looked to Hosino to modify the teachings of Goertzen.

Secondary Considerations of Nonobviousness

Patent Owner asserts that Invacare's TDX SP and TDX SI, Sunrise Medical's Pulse, and Petitioner's M-Series wheelchairs are copies of the

product of the '598 patent (its Q6 Series wheelchair). PO Resp. 53–55. To support its allegations, Patent Owner submits a Declaration of Mr. Scott Meuser (Ex. 2015), its chairman and CEO, and relies upon an infringement analysis by Mr. Curran (Ex. 2012 ¶¶ 134–136). Petitioner contends that Patent Owner did not provide sufficient evidence of copying—particularly “evidence of actual efforts to replicate a specific product”—because Mr. Curran merely assumed copying by Petitioner. Pet. Reply 12–14. We agree. None of the evidence submitted by Patent Owner demonstrates that Invacare, Sunrise Medical, or Petitioner was aware of the '598 patent prior to developing its product, or that Invacare, Sunrise Medical, or Petitioner developed its product by copying the '598 patent.

Patent Owner also asserts commercial success because (1) Patent Owner's estimated share of the market increased following the introduction of the product of the '598 patent (its Q6 Series wheelchair); and (2) sales of the Q6 series outpaced sales of Patent Owner's previous (high-pivot) product. PO Resp. 56–57. Petitioner contends that Patent Owner provides insufficient evidence of a nexus between the claimed invention's low front-arm pivot and its purported commercial success. Pet. Reply 14–15. We agree that Patent Owner does not provide persuasive evidence that the company-wide increase in market share is attributable to the patented feature of the Q6 Series wheelchair. Patent Owner also does not provide persuasive evidence that the commercial success of the Q6 Series wheelchairs was attributable to the patented invention. The evidence shows only that the Q6 Series wheelchairs outsold the Jazzy series wheelchairs from 2005 onward. Ex. 2015 ¶¶ 38–39. The facts that the Q600 outsold the Jazzy 1121 from

2005 onward, and that the Q6000 outsold the Jazzy 1122, 1400, and 1402 combined from 2006 onward, do not establish sufficiently that customers were buying the Q600 and Q6000 because of their low-pivot.

Conclusion

For the foregoing reasons, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 4–8, and 11–13 are unpatentable under 35 U.S.C. § 103(a) as obvious over Goertzen and Hosino.

*D. Claims 2, 3, 9, and 10 –
Obviousness over Goertzen, Hosino, and Schaffner*

Petitioner argues that claims 2, 3, 9, and 10 are unpatentable under 35 U.S.C. § 103(a) as obvious over Goertzen, Hosino, and Schaffner. Pet. 47–52. In support of this ground of unpatentability, Petitioner provides detailed explanations as to how each claim limitation is met by Goertzen, Hosino, and Schaffner and relies upon the Declaration of Dr. Richter. *Id.*

Patent Owner does not argue the patentability of claims 2, 3, 9, and 10 separately.

Schaffner (Exhibit 1002)

Schaffner describes a curb-climbing front wheel drive powered wheelchair with a frame, a seat connected to the frame, and a pair of drive wheels connected to the frame. Ex. 1002, Abstract. The powered wheelchair has anti-tip wheels forward of the drive wheels rigidly connected to the motors for pivotal movement. *Id.* Figure 27 of Schaffner is reproduced below:

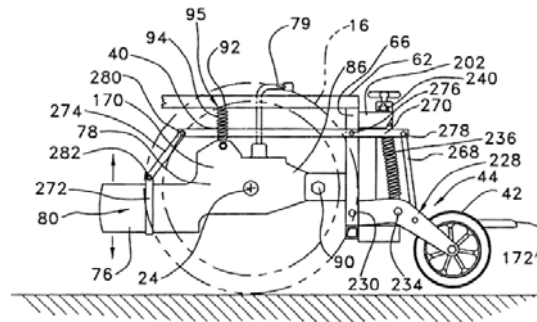


FIG. 27

Figure 27 depicts a side view of a suspension apparatus for the powered wheelchair's drive wheels and forward anti-tip wheels. *Id.* at Fig. 27. As depicted in Figure 27, drive motor housing 80 is connected pivotally to frame 12 at pivotal connection 90. *Id.* at col. 26, ll. 47–52. Spindle 228 pivots about connection point 230. *Id.* at col. 25, ll. 63–67.

Movement of motor 76—especially pivotal movement of housing 80 relative to frame 12—indirectly controls the action of anti-tip wheels 42. *Id.* at col. 26, ll. 53–56. Pivoting beam 270 is connected pivotally to a forward, vertically-extending member 66 of frame 12 via pivotal connection 276. *Id.* at col. 26, ll. 56–58. Vertical link 268 is connected pivotally to a forward end of pivoting beam 270 at pivot connection 278. *Id.* at col. 26, ll. 59–61. The lower end of vertical link 268 is connected pivotally to spindle 238 via a pivotal connection that is not numbered in Figure 27. *Id.* at col. 26, ll. 61–63. At the opposite, rearward end of pivoting beam 270, intermediate link 274 is connected pivotally thereto via connection 280. *Id.* at col. 26, ll. 64–66. At the other end of intermediate link 274, pivotal connection 282 connects intermediate link 274 and motor link 272, which preferably is connected fixedly to housing 80 of motor 76 and transmission 78. *Id.* at col. 26, l. 66–col. 27, l. 3. The linkage, consisting of pivoting beam 270, vertical

link 268, and intermediate link 274, transfers motion between the rear end of housing 80 remote from pivot point 90 and forward anti-tip wheels 42, thereby accomplishing the action/reaction of these components to drive wheel acceleration/deceleration. *Id.* at col. 27, ll. 3–10.

Petitioner's Contentions

Upon consideration of the parties' contentions and supporting evidence, we are persuaded that Petitioner has demonstrated, by a preponderance of the evidence, that claims 2, 3, 9, and 10 are obvious over Goertzen, Hosino, and Schaffner.

Claims 2 and 9 depend from independent claims 1 and 7, respectively. As discussed above, we find that Petitioner has demonstrated, by a preponderance of the evidence, that Goertzen and Hosino teach the limitations of independent claims 1 and 7. Dependent claims 2 and 9 further recite “wherein the drive assembly is pivotally coupled to the frame at a drive assembly pivot axis that is substantially vertically aligned with the arm pivot axis.” Petitioner acknowledges that pivot point 90 in Schaffner is not “substantially vertically aligned” with connection point 230, as recited in claims 2 and 9. Pet. 48–49. Petitioner argues, however, that “arranging the pivots in a substantially vertical alignment would [have been] an obvious design choice based on a finite number of possible locations for the two pivots with a reasonable expectation of success.” Pet. 49–50.

Petitioner points to the analysis of the Examiner in an Action Closing Prosecution in *Inter Partes* Reexamination of Patent No. US 8,181,992 B2—the parent of the '598 patent—in concluding that:

One of ordinary skill in the art would appreciate that the relative positions of the pivots 90 and 230 could be modified by

moving the pivots 230 rearward and/or the pivots 90 forward in order to adjust the suspension characteristics to suit particular design criteria. For example, moving the pivots 230 rearward and the pivots 90 forward would produce increased pivot radii for the anti-tip wheels 42 and the housings 80, thereby resulting in greater upward movement of the anti-tip wheels 42 during acceleration and greater downward movement of the anti-tip wheels 42 during deceleration. Greater upward movement of the anti-tip wheels 42 enables the wheels 42 to ride up and over taller obstacles. Greater downward movement of the anti-tip wheels 42 insures that the wheels 42 will contact the ground and perform their anti-tipping function even when the normal height of the wheels 42 is adjusted to a relatively high height. *Therefore, it would have been obvious to one of ordinary skill in the art to modify Schaffner et al. by positioning the pivots 90 and 230 in substantial vertical alignment in order to produce the desired upward and downward movement of the anti-tip wheels 42 for a particular application and/or end user.*

Ex. 1010, 13–14 (emphasis added). The same rationale applies with respect to the challenged claims of the '598 patent. We are persuaded that it would have been obvious to a person of ordinary skill in the art to modify Goertzen in view of Hosino and Schaffner for the reasons expressed by the Examiner. In consideration of the above evidence, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that these claims are unpatentable.

Claims 3 and 10 depend from claims 2 and 9, respectively. As discussed above, we are persuaded that Goertzen, Hosino, and Schaffner teach the limitations of dependent claims 2 and 9. Dependent claim 3 further recites “a suspension link connecting the drive assembly to the arm, the suspension link operatively transferring motion of the drive assembly to the arm to cause the arm to rotate about its pivotal mounting in response to

the torque created in rotation of the drive wheels.” Dependent claim 10 further recites “a suspension link connecting the drive assembly to the arm, the suspension link operatively transferring to the arm, motion of the drive assembly about its pivotal mounting in response to the torque created in rotation of the drive wheels.” We agree that the limitations of dependent claims 3 and 10 are taught by the linkage in Schaffner consisting of pivoting beam 270, vertical link 268, and intermediate link 274, which connect housing 80 to spindle 228, causing spindle 228 to rotate about connection point 230 in response to the torque created in the rotation of drive wheels 16. Pet. 50–52.

Conclusion

For the foregoing reasons, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claims 2, 3, 9, and 10 are unpatentable under 35 U.S.C. § 103(a) as obvious over Goertzen, Hosino, and Schaffner.

E. Petitioner’s Motion to Exclude Evidence

Petitioner filed a Motion to Exclude Evidence (Paper 38), to which Patent Owner responded (Paper 45). Petitioner filed a Reply in Support of its Motion to Exclude. Paper 49. Petitioner’s Motion to Exclude Evidence seeks to exclude (1) paragraphs 3–6, 12, 13, 21–23, 25–30, and 32–40 of the Declaration of Scott Meuser (Ex. 2015); and (2) paragraphs 133–136 of the Declaration of Neal Curran (Ex. 2012). Paper 38, 1. As movant, Petitioner has the burden of proof to establish that it is entitled to the requested relief. See 37 C.F.R. § 42.20(c).

We decline to assess the merits of Petitioner's Motion to Exclude Evidence. As discussed above, even without excluding the identified evidence, we have concluded that Petitioner has demonstrated, by a preponderance of the evidence, that the challenged claims are unpatentable. Accordingly, Petitioner's Motion to Exclude Evidence is *denied*.

F. Patent Owner's Motion to Exclude Evidence

Patent Owner also filed a Motion to Exclude Evidence (Paper 35), to which Petitioner responded (Paper 46). Patent Owner filed a Reply in Support of its Motion to Exclude. Paper 48. Patent Owner's Motion to Exclude Evidence seeks to exclude the testimony of Dr. Richter on the grounds that he is not an expert under Federal Rule of Evidence 702. Paper 35. As movant, Petitioner has the burden of proof to establish that it is entitled to the requested relief. *See* 37 C.F.R. § 42.20(c). For the reasons stated below, Petitioner's Motion to Exclude is *denied*.

Patent Owner's motion is predicated on a definition of the level of ordinary skill in the art that we declined to adopt, as discussed above. Based on the level of ordinary skill in the art that we determined above, Dr. Richter is a person of at least ordinary skill.

Patent Owner also argues that Petitioner improperly needs the evidence regarding the level of skill in the art relied upon in the Reply to make out a prima facie case for the Petition. Patent Owner, however, cites no case law to support that proposition. Petitioner asserts that the Board has routinely found claims to be obvious without identifying a specific level of ordinary skill in the art. Paper 46, 8–9, n.5. We are not persuaded that Petitioner failed to make sufficient case of obviousness because the Petition

lacked an explicit contention in the Petition regarding the level of ordinary skill in the art. *See supra* Section II.B.

III. CONCLUSION

Petitioner has shown, by a preponderance of the evidence, that claims 1–13 of the '598 patent are unpatentable based on the following grounds of unpatentability:

Reference[s]	Basis	Claims challenged
Goertzen & Hosino	§ 103	1, 4–8, and 11–13
Goertzen, Hosino, & Schaffner	§ 103	2, 3, 9, and 10

IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1–13 of the '598 patent are held unpatentable;
FURTHER ORDERED that Petitioner's Motion to Exclude is *denied*;
FURTHER ORDERED that Patent Owner's Motion to Exclude is
denied; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2013-00407
Patent 8,408,598 B2

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