

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GODBERSEN-SMITH CONSTRUCTION COMPANY
d/b/a GOMACO CORPORATION,
Petitioner,

v.

GUNTERT & ZIMMERMAN CONST. DIV., INC.,
Patent Owner.

Case PGR2024-00026
U.S. Patent No. 11,772,723

PATENT OWNER'S RESPONSE

[REDACTED VERSION]

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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corp. v. Guntert & Zimmerman Const. Div., Inc.</i> , No. IPR2021-00135, Paper 11 (P.T.A.B. May 21, 2021)
2002	Petition for <i>Inter Partes</i> Review, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corp. v. Guntert & Zimmerman Const. Div., Inc.</i> , No. IPR2021-00135, Paper 1 (P.T.A.B. Nov. 6, 2020)
2003	U.S. Patent Application Publication No. 2011/0236129 ("Guntert Application")
2004	Patent Owner's Preliminary Response, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corp. v. Guntert & Zimmerman Const. Div., Inc.</i> , No. IPR2021-00135, Paper 8 (P.T.A.B. Feb. 25, 2021)
2005	Declaration of Kenneth "Mark" Bryden in Support of Patent Owner's Response, FILED UNDER SEAL
2006	Declaration of Ronald M. Guntert, Jr. in Support of Patent Owner's Response
2007	Email correspondence between J. Dahlinger and D. Pope, dated July 14, 2009, FILED UNDER SEAL
2008	Deposition Transcript of William Singhose, Ph.D., <i>Godbersen-Smith Construction Company d/b/a Gomaco Corporation v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2024-00835, taken on February 12, 2025

Exhibit	Description
2009	Deposition Transcript of William Singhose, Ph.D., <i>Godbersen-Smith Construction Company d/b/a Gomaco Corporation v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. PGR2024-00026, taken on February 13, 2025
2010	Excerpts of the Deposition Transcript of Kevin Klein, <i>Guntert & Zimmerman Const. Div., Inc. v. Gomaco Corp.</i> , Case No. 5:20-cv-04007-CJW-KEM (N.D. Iowa), taken on August 25, 2020, FILED UNDER SEAL
2011	“HELAC Conference Calls Notes” by S. Johnson, dated May 6, 2014, FILED UNDER SEAL
2012	“Helac Rotary Actuators Specification Sheet,” dated May 28, 2013, FILED UNDER SEAL
2013	U.S. Patent No. 6,890,123
2014	Heavy Equipment Guide Webpage, “New S600 Slipform Paver The Multi-Tool Every Paving Contractor Needs,” dated November 22, 2010, available at https://www.heavyequipmentguide.ca/article/15235/new-s600-slipform-paver
2015	Construction Equipment Guide Webpage, “S600 Slipform Paver Designed for Multiple Tasks,” dated November 18, 2010, available at https://www.constructionequipmentguide.com/s600-slipform-paver-designed-for-multiple-tasks/15267
2016	World Highways Webpage, “Repairing concrete roads using new technology,” dated July 28, 2015, available at https://www.worldhighways.com/wh4/feature/repairing-concrete-roads-using-new-technology
2017	“Angular Position Engineering,” by Camille Bauer

Exhibit	Description
2018	Angular Sensor 1 Diagram
2019	Guntert & Zimmerman Brochure, "S600 Multi-Purpose Slipform Paver"
2020	Definition of "On" from Webster's Third New International Dictionary (2002)
2021	Guntert & Zimmerman Newsletter, "Construction Profiles," dated Fall 2010
2022	Declaration of Todd Greenwood in Support of Patent Owner's Response, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corporation v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2020-01698, dated July 22, 2021
2023	Declaration of Jeff Holley in Support of Patent Owner's Response, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corporation v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2020-01698, dated July 20, 2021
2024	Email correspondence between J. Dahlinger and A. Moser, dated June 24, 2009, FILED UNDER SEAL
2025	Guntert & Zimmerman Newsletter, "Construction Profiles," dated Spring 2011
2026	Masonry Webpage, "CONEXPO-CON/AGG & IFPE 2011 a Huge Success," dated February 10, 2025, available at https://www.masonrymagazine.com/Default?pageID=4818
2027	CONEXPO-CON/AGG Webpage, "CONEXPO-CON/AGG 2026: International Construction Trade Show," dated February 10, 2025, available at https://www.conexpoconagg.com

Exhibit	Description
2028	Gomaco Press Release, "GOMACO Introduces the GP-2400, the New Economical Slipform Paver," dated February 14, 2025, available at https://www.gomaco.com/resources/pressreleases/pressreleases_2400.html
2029	Gomaco Brochure, "New GP3 Slipform Paver" (2016)
2030	Excerpts of the Declaration of Ronald M. Guntert, Jr. in Support of Patent Owner's Preliminary Response, <i>Godbersen-Smith Construction Company d/b/a Gomaco Corporation v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2020-01698, dated January 18, 2021
2031	Spreadsheet – Guntert & Zimmerman Pavers and Swing Leg Sales, FILED UNDER SEAL
2032	Intentionally Omitted
2033	Intentionally Omitted
2034	Intentionally Omitted
2035	Guntert & Zimmerman / Miller Formless – Industry Analysis for Fiscal Year 2015, by Lieven Van Broekhoven, dated July 30, 2021, FILED UNDER SEAL
2036	The Global Paving Industry Report by Lieven Van Broekhoven, dated July 30, 2021, FILED UNDER SEAL

I. INTRODUCTION

The Board should affirm the patentability of the Challenged Claims¹ because, as a pre-AIA patent, the '723 Patent is not eligible for post-grant review ("PGR"). The panel previously determined that claim 8 of the '571 Patent²—which Petitioner relies on here for alleged AIA status (Pet. at 118-19)—has written description support in the original pre-AIA patent application after its effective filing date was contested, litigated, and evaluated in IPR2021-00135 (the "00135 IPR") challenging the '571 Patent. *See* Ex. 2001 ("00135 Decision") at 11-12. Collateral estoppel bars Petitioner from relitigating this issue. On the other hand, collateral estoppel does not attach to the Board's determination in IPR2021-00136 (the "00136 IPR") because the issue was not actually litigated in that case. And although it need not reach any other issue, the Challenged Claims are patentable on the merits.

Almost without exceptions, conventional paving machines for concrete road building had fixed connections between the inner tube of a jacking column and the yoke of a crawler track using a torque arm and hydraulic cylinder to rotate the inner tube with the crawler track. When rotating a crawler track to a new orientation, the

¹ In this PGR proceeding, the Petition challenges Claims 1-7 ("the "Challenged Claims") of U.S. Patent. No. 11,772,723 (the "'723 Patent," Ex. 1001).

² U.S. Patent No. 9,908,571 (the "'571 Patent").

crawler track and inner tube would be rotated together. The concept was carried forward in *Rio*'s design for an asphalt road milling machine, which uses a rotary actuator to turn the inner tube of a jacking column through a complex key / keyway system and this inner tube had a fixed connection with the yoke of the crawler track. Both designs suffer from the same fundamental flaws: (1) In order to reposition a swing leg, the crawler track had to be lifted off the ground, and (2) the swing leg had to be secured in place while the machine was in motion.

In contrast, G&Z's design couples one end of a slew drive to the inner tube of each jacking column inner tube and the other to the yoke of the crawler track, such that no part of the jacking column rotates when rotating the crawler track. The claimed design also replaced the conventional turnbuckles, which were used to hold the swing leg stationary under motion, with a hydraulic actuator that coordinates movements of the swing leg with movements of the crawler track under load and on the fly. When coupled with its angular position sensors and processor, G&Z found this design capable of reconfiguring the angular orientation of the swing leg in relationship to the modular frame while at the same time keeping its crawler track moving precisely in the desired direction.

The Challenged Claims of the '723 Patent (Claims 1-7) are not rendered obvious by the combination of CIII and *Rio*. *Rio*'s swing arm apparatus was unable to accomplish any swing leg reconfiguration while the machine was under load and

relied upon a fixed connection (anti-rotation collar) between the lower tube of its jacking column and crawler track.

Claims 6 and 7 are independently patentable because they recite coordinated steering of the crawler tracks and swing legs while under load, which CIII and Rio expressly prohibit. *See, e.g., '723 Patent at 16:6-53.* Unlike the '723 Patent's claimed invention, CIII and Rio require their respective machines to be stopped and their swing legs/tracks raised off the ground for any swing leg repositioning, as Petitioner acknowledges. *See Pet. at 16. Ex. 1016 ("Tax"),* which was filed 42 years before the effective filing date of the '723 Patent, was not cited with respect to Claim 7 and does not cure CIII's and Rio's deficiencies with respect to Claim 6 at least because Tax's wheel-based crane does not (and is not proposed) to solve the problem that requires locking CIII's and Rio's swing legs while moving and under load.

The '723 Patent also provides written description support for the claimed angular position transducer because it discloses locating the transducer at the pivot connection between the swing leg and frame to measure the rotational angle between those two components. Petitioner's written description challenge rests on two fundamental mistakes: (1) Petitioner assumes that the hinge bracket, where the swing leg attaches to the frame, is not *part of* the frame, but it is; and (2) Petitioner's argument depends on construing "disposed on" to mean "disposed directly on,"

which contradicts its plain and ordinary meaning of the term and finds no support in the intrinsic record.

The objective indicia of nonobviousness also confirms the patentability of the Challenged Claims over the CIII-Rio combination as there was a long-felt need, copying, industry praise, and commercial success directly tied to the claimed invention's on-the-fly steering capabilities.

II. THE '723 PATENT IS NOT PGR ELIGIBLE

A. Collateral Estoppel Bars Petitioner from Relitigating the AIA Status of the '571 Patent

The '723 Patent is not eligible for post-grant review because it is a pre-AIA Patent, and each application in its priority chain is a pre-AIA patent. Petitioner's sole basis for asserting that the '723 Patent is an AIA patent (*i.e.*, the question of whether Claim 8 of the ancestral '571 Patent has an effective filing date after March 15, 2013) has already been litigated and decided in Patent Owner's favor. Collateral estoppel bars Petitioner's attempt to relitigate this issue, and collateral estoppel does not apply to the Board's decision in the -00136 proceeding, where the issue was not actually litigated.

The application of collateral estoppel is not optional; if each of the requirements for collateral estoppel is met with respect to an issue, a party is prohibited from re-litigating that issue. *See Nestle USA, Inc. v. Steuben Foods, Inc.*, 884 F.3d 1350, 1351 (Fed. Cir. 2018) ("Collateral estoppel protects a party from

having to litigate issues that have been fully and fairly tried in a previous action and adversely resolved against a party-opponent.”) (quoting *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013)).

Petitioner is prohibited from relitigating the effective filing date in this case because the -00135 Decision meets all requirements for the application of collateral estoppel. Ex. 2001 at 11-12; *see also Google LLC v. Hammond Dev. Int’l., Inc.*, 54 F.4th 1377, 1381 (Fed. Cir. 2022) (“The party seeking to invoke collateral estoppel must show: (1) the issue is identical to one decided in the first action; (2) the issue was actually litigated in the first action; (3) resolution of the issue was essential to a final judgment in the first action; and (4) [the party against whom collateral estoppel is being asserted] had a full and fair opportunity to litigate the issue in the first action.”) (citation omitted). In its Preliminary Reply, Petitioner disagreed that the issue was “actually litigated” (it was) and challenged whether decisions to deny institution are final judgments (they are). Reply at 4.

Petitioner’s argument that decisions denying institution cannot give rise to collateral estoppel because they are **unappealable** fails as a matter of law. *Id.* at 1-2. The rule that Petitioner attempts to invoke does not turn on whether the decision is **appealable**, it applies when “[t]he party against whom preclusion is sought could not, as a matter of law, have obtained review of the judgment in the initial action.” *Jackson Jordan, Inc. v. Plasser Am. Corp.*, 747 F.2d 1567, 1576 (Fed. Cir. 1984).

The Restatement, which the Federal Circuit follows,³ clarifies that this exception does not apply to decisions that are reviewable on “extraordinary writ.” Restatement (Second) of Judgments § 28 cmt. *a* (1982) (issues decided in “a valid and final judgment” are only exempt from collateral estoppel when “the party who lost on that issue is . . . disabled as a matter of law from obtaining review by appeal or, **where appeal does not lie**, by injunction, **extraordinary writ**, or statutory review procedure.”) (emphasis added).

Because the Federal Circuit maintains jurisdiction to hear petitions for writs of mandamus from decisions denying institution of *inter partes* review, Petitioner was not “disabled as a matter of law from obtaining review by . . . extraordinary writ.” *Id.*; see also *Mylan Lab’ys Ltd. v. Janssen Pharmaceutica, N.V.*, 989 F.3d 1375, 1379 (Fed. Cir. 2021) (“While there is no avenue for direct appeal of decisions denying institution, we conclude that judicial review is available in extraordinary circumstances by petition for mandamus.”). And it is no defense that Petitioner did

³ The Restatement (Second) of Judgments guides the Federal Circuit’s application of the principles of collateral estoppel. *Purdue Pharma L.P. v. Iancu*, 767 F. App’x 918, 922 (Fed. Cir. 2019) (citing *Voter Verified, Inc. v. Election Sys. & Software LLC*, 887 F.3d 1376, 1383 (Fed. Cir. 2018); *Jackson Jordan*, 747 F.2d at 1575-76 (citing cases); see also *Arizona v. California*, 530 U.S. 392, 414 (2000)).

not seek review of the Board's decision. Restatement § 28 cmt. *a* ("The exception in Subsection (1) applies only when review is precluded as a matter of law. It does not apply in cases where review is available but is not sought.").

Petitioner's second argument, that the issue of written description support for Claim 8 of the '571 Patent was not "actually litigated" in the -00135 proceeding, is meritless because Petitioner raised the issue, and Patent Owner contested it. Reply at 3-4. Petitioner's admission that it did not "raise a meaningful challenge" (*id.* at 3) in IPR2021-00135 does not mean that the issue was not actually litigated in that case.

On the contrary, a determination giving rise to collateral estoppel "may be based on a failure of pleading or of proof as well as on the sustaining of the burden of proof." Restatement (Second) of Judgments § 27 cmt. *d* (1982). The critical question is whether the parties contested the issue, not whether the party with the burden of proof met its burden. *Id.* at cmt. *e* (an issue is not actually litigated when a party does not "contest an assertion"); *see also VirnetX Inc. v. Apple Inc.*, 792 F. App'x 796, 804-05 (Fed. Cir. 2019) (distinguishing "adversarial contest" from "such a 'feeble effort' at presenting an issue that the case could be characterized as not involving actual litigation of the issue") (citations omitted).

Not only did G&Z contest Petitioner's argument in the -00135 case, the Board determined that "Patent Owner details where and how Guntert discloses each of the

limitations,” including the *laterally telescoping leg* and *linear position transducer* limitations, and stated it was “satisfied that Patent Owner has demonstrated sufficient written description support for Petitioner’s listed imitations.” Ex. 2001 (-00135 Decision) at 11-12, 23.

B. Collateral Estoppel Does Not Bar Patent Owner’s Arguments

The Board’s Institution Decision rested on its finding from the -00136 Decision without revisiting the underlying merits of the issue or finding that collateral estoppel attaches to that determination. Paper 11 (“DI”) at 12. However, because Petitioner did not actually raise the relevant ’571 Patent written description issue in this case, collateral estoppel provides the only possible basis for finding that the ’723 Patent is PGR eligible. Sur-Reply at 4-5. Collateral estoppel cannot apply because the issue was not actually litigated in IPR2021-00136. See Paper 8 (“POPR”) at 9-12; Sur-Reply at 4-5; DI at 12; *see also Comair Rotron, Inc. v. Nippon Densan Corp.*, 49 F.3d 1535, 1537 (Fed. Cir. 1995) (collateral estoppel does not apply where “the issue was [not] actually litigated.”) (citations omitted).

The Restatement (Second) of Judgments (1982) explains that uncontested issues do not give rise to collateral estoppel:

An issue is not actually litigated if . . . it is raised by a material allegation of a party’s pleading but is admitted (explicitly or by virtue of a failure to deny) in a responsive pleading . . . if it is the subject of a stipulation

between the parties. . . . In the case of a judgment entered by confession, consent, or default, none of the issues is actually litigated.

Restatement (Second) of Judgments § 27 cmt. *e* (1982). Thus, collateral estoppel does not attach when a party raises an issue in its pleadings, and the opposing party admits or fails to deny the underlying allegation. *Jackson Jordan*, 747 F.2d at 1576 n.8 (an issue is not “actually litigated if it is raised by a material allegation of a party’s pleading but is admitted (explicitly or by virtue of a failure to deny) in a responsive pleading” (citing Restatement (Second) of Judgments § 27 cmt. *e*)); *Voter Verified*, 887 F.3d at 1382-83 (refusing to apply collateral estoppel when one party made an assertion in the prior proceeding, and the other party did not contest it); *In re Corey*, 583 F.3d 1249, 1251-52 (10th Cir. 2009) (because there are “many reasons why a party may choose not to raise an issue, or to contest an assertion, in a particular action,” collateral estoppel does not apply to “unraised or uncontested issues”).

Unlike in the -00135 IPR,⁴ written description support for the “laterally telescoping leg” and “linear position transducer” limitations was not “actually

⁴ If the Board agrees that collateral estoppel cannot attach to its determination in the -00135 case on the basis that Petitioner’s argument was too feebly presented, then collateral estoppel cannot attach from the -00136 case for the same reason: Petitioner’s arguments in the two cases were exactly the same.

litigated” in the ’00136 IPR because Patent Owner did not contest Petitioner’s argument. Ex. 1037 at 11 (“Patent Owner does not dispute Petitioner’s arguments.”); Pet. at 8. In these circumstances, collateral estoppel does not apply because the issue was not actually litigated. *Purdue Pharma*, 767 F. App’x at 922-23 (declining to apply collateral estoppel to an issue that could have been, but was not, raised because that is the standard for applying *res judicata*, not collateral estoppel).

C. The Alleged Written Description Defect Does Not Transform the ’723 Patent Into an AIA Patent

Although Petitioner challenges whether the ’723 Patent contains adequate written description for the claimed “angular position transducer” (it does, see § IX, *infra*), that alleged written description does not transform the ’723 Patent into an AIA patent because the allegedly unsupported limitations were added in amendments after the application was filed. See Pet. at 109. Consistent with this rule, Patent Owner designated the transition application that led to the ’723 Patent as a pre-AIA application during prosecution:

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

<p>This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.</p> <p>☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.</p>
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Ex. 1004 at 4.

The Manual of Patent Examining Procedure (“MPEP”) § 2159 states, amendments—other than preliminary amendments filed on the same day as the application—lacking written description support in the originally-filed application, do not transform an application from a pre-AIA application to an AIA application:

If an application filed on or after March 16, 2013, that did not previously contain any claim to a claimed invention having an effective filing date on or after March 16, 2013, (a pre-AIA application) is amended to contain a claim to a claimed invention having an effective filing date on or after March 16, 2013, the application becomes an AIA application (AIA 35 U.S.C. 102 and 103 apply to the application), **provided that the newly added claimed invention has support under 35 U.S.C. 112(a) in the application filed on or after March 16, 2013.**

MPEP § 2159.02 (emphasis added). Thus, aside from preliminary amendments filed on the same day as the application, claim amendments that add new matter do not transform the application from a pre-AIA application to an AIA application:

[A]n amendment (other than a preliminary amendment filed on the same day as such application) **seeking to add a claim to a claimed invention that is directed to new matter in an application filed on or after March 16, 2013**, that, as originally filed, discloses and claims only subject matter also disclosed in an earlier application filed before March 16, 2013 to which the application filed on or after March 16, 2013, is entitled to priority or benefit under 35 U.S.C. [§§] 119, 120,

121, or 365, would not change the application from a pre-AIA application into an AIA application.

POPR at 12-13 (quoting MPEP § 2159.02 (emphasis added)).

This rule specifically bars the transformation of a pre-AIA application into an AIA application based on a written description defect introduced via amendment after the application's filing date. Because the alleged written description defect in the '723 patent stemmed from an amendment introduced after the '723 Patent's filing date, that amendment did not transform the '723 Patent into an AIA Patent. In any event, Petitioner's "disposed on" written description challenge (Ground 3) is without merit because the claim term finds support in the specification. § XI, *infra*.

Because Petitioner fails to meet its burden of establishing eligibility by identifying any claim element as allegedly missing support, the '723 Patent is PGR-ineligible. *See Resmed Corp. v. Cleveland Med. Devices, Inc.*, No. PGR2024-00012, Paper 9 at 3 (P.T.A.B. Oct. 17, 2024) (Petitioner "has the burden of establishing eligibility for post-grant review" by identifying claim elements "as allegedly missing support").

III. OVERVIEW OF THE '723 PATENT

The '723 Patent describes a novel paving machine (for concrete roadbuilding) that repositions its swing leg and/or crawler track on the fly. No traditional paving machine had these capabilities, including the *CIII* and *Rio* reference cited against the

Challenged Claims. Prior to G&Z's invention, repositioning a traditional paving machine's swing leg/crawler track required the operator to stop the machine, support the machine, and lift the crawler track off the ground:

[W]hen repositioning the crawler tracks of a paving machine in accordance with conventional methods, the machine is initially appropriately supported so that a first one of the bolster swing leg-mounted crawler tracks can be lifted off the ground. The turnbuckle is then used to pivot the bolster swing leg until the jacking column and the associated crawler are at the desired (lateral) position and have the required crawler orientation.

'723 Patent at 4:57-64; *see also id.* at 4:57-5:22, 16:6-16. This process was time-consuming and costly. *Id.*; Ex. 2005 ("Bryden Decl."), ¶21.

The '723 Patent improved over the state-of-the-art with a paving machine that can reposition its swing legs and crawler tracks "on the fly" when the crawler track is moving and under load:

These swing legs can be coordinated electronically allowing ease of automatically or semi-automatically reconfiguring the machine to go into a transport position, an operational paving position, or to reposition jacking column and/or crawler track positions ***on the fly*** to avoid obstacles or severe grade deviations during paving.

'723 Patent at 15:65-16:3 (emphasis added); *id.* at 16:14-16 ("[T]he present disclosure provides for machines that can adjust leg and crawler track location while in operation ('***on the fly***').") (emphasis added); *id.* at Claim 1 ("slew gear drive . . .

capable of steering the crawler track under load without lifting the crawler track”); Bryden Decl., ¶22.

In this operation, a swing leg hydraulic actuator, a slew drive, and angular position transducers work in connection to achieve the coordinated movement of the swing leg and crawler track while moving and under load. ’723 Patent at 6:19-7:25. For example, in keeping the machine in an operational paving position, the swing leg’s hydraulic actuator and the crawler track’s slew drive work in connection with angular position transducers:

A closed loop system feedback system that connects the hydraulic actuator for the swing leg, the rotary power drive for the crawler

If the swing leg migrates away from a preset angle, the swing leg hydraulic cylinder is actuated to maintain the preset angle and at the same time the necessary adjustments to the crawler track orientation are made with the hydraulic rotary power drive

Id. at 6:43-54; *see also id.* at 6:25-33 (describing “pivot[ing] the crawler track relative to the associated jacking column to keep the crawler tracks oriented in the paving direction when the angular orientation of the swing leg changes”).

This coordinated process also enables the relocation of the swing leg/crawler track (for example, to maneuver around paving obstacles). *See id.* at 16:44-53 (“While the paving machine is moving, allowing automatic repositioning of one or more swing legs (inclusive of jacking column and crawler tracks) into new positions

provides for the ability to avoid obstacles (e.g., manholes, guard rails, posts, etc.)”); *id.*, Claim 6; Bryden Decl., ¶23.

Thus, the '723 Patent discloses a slipform paver capable of on-the-fly coordinated swing leg and crawler track steering while under load, which provides seamless maneuverability while paving, transforming the machine between paving and transport modes, and navigating around a jobsite. Bryden Decl., ¶24.

IV. THE ASSERTED REFERENCES

A. CIII (Ex. 1005)

CIII is a traditional paving machine that implements the conventional swing leg/crawler track relocation process. Indeed, Petitioner acknowledges that “to swing the leg, an operator ***raises the crawler track off the ground.***” Pet. at 16 (emphasis added); *see also* CIII at 253-55 (disclosing that to transform the machine, the crawler track is also lifted off the ground); Bryden Decl., ¶25.

CIII's swing leg includes locking pins that hold the swing leg in place while under load and which are only removed after the machine is supported, the crawler track is lifted off the ground, and the hydraulic pivot cylinder is engaged to pivot the swing leg:

[An operator] removes the pin locking the leg in place, and holds a switch to extend or retract the pivot cylinder until the leg reaches the desired position.

Pet. at 16. Accordingly, unlike the '723 Patent's on-the-fly operation, which enables the coordinated movements of the swing leg and crawler track under load, CIII machine must be stopped, supported, the track lifted off the ground, and the locking pins removed before there is any movement of the swing leg. Bryden Decl., ¶26.

B. Rio (Ex. 1006)

Rio, like CIII, also requires the operator to stop the machine and raise the crawler track before adjusting the swing leg. Similar to CIII, Rio's anti-swing device is only disengaged after the track is raised:

First, the ***operator stops the machine 10*** and engages the parking brake which sends a brake set signal 116 to the controller 32 Next, . . . ***the lifting column 46 [is] raised relative to the machine frame 12*** In response to receiving the permissive signals indicating ***that the machine is safely stopped***, . . . the controller 32 activates ***the anti-swing actuator 85*** and the anti-rotate actuator 98 to release the corresponding protrusions 86, 102 from engagement with the respective receptacles 88, 96.

Rio at 7:62-8:27 (emphasis added). Just like CIII, the Rio machine must be stopped, the track must be lifted off the ground, and the anti-swing device disengaged before any movement of the swing leg is permitted. Bryden Decl., ¶27.

V. LEVEL OF ORDINARY SKILL IN THE ART

G&Z applies Petitioner's definition of a person of ordinary skill in the art ("POSITA" or skilled artisan), as one who "would have had at least a four-year

degree in mechanical engineering or a closely related field and at least two years of experience designing, developing, or operating heavy machinery, including their components and control systems.” Pet. at 10. “Additional experience could substitute for a formal degree, and an advanced degree could substitute for experience.” *Id.*; Bryden Decl., ¶¶ 11-14.

VI. CLAIM CONSTRUCTION

A. “A Crawler Track Coupled to a Yoke Which is Rotatably Coupled to the Jacking Column” and “a Slew Gear Drive Secured at a Lower End of the Inner Tube and to a Top of the Yoke to Translate Relative Rotational Movements Between the Jacking Column and the Crawler Track About the Upright Axis”

The term “a crawler track coupled to a yoke which is rotatably coupled to the jacking column” should be construed to mean that *one side of the slew drive is coupled to the jacking column, one side of the slew drive is coupled to the crawler track, and neither cylinder of the jacking column rotates along with the crawler track.* Bryden Decl., ¶28.

Unlike U.S. Patent No. 10,029,749 (“’749 Patent”), the ’723 Patent’s express claim language requires a slew drive that rotatably couples the crawler track to the jacking column and rotates the crawler track relative to the entire jacking column:

1. A paving machine comprising:

* * *

a crawler track coupled to a yoke which is *rotatably coupled to the jacking column*;

a slew gear drive secured at a lower end of the inner tube and to a top of the yoke ***to translate relative rotational movements between the jacking column and the crawler track about the upright axis***

'723 Patent at Claim 1 (emphasis added). This express language does not recite causing the crawler track to rotate relative to a *portion* of the jacking column. Bryden Decl., ¶29.

This plain language reading of the claims is entirely consistent with every embodiment of the invention disclosed in the '723 Patent, which describes coupling a slew drive to the bottom of a rotationally-fixed jacking column, such that the crawler track rotates relative to the entire jacking column. '723 Patent at Abstract ("The jacking column can include telescoping outer and inner tubes The slew gear drive can be secured between the inner tube and a yoke"), 8:67-9:3 (The crawlers are mounted to the lower ends of the jacking columns, and they are rotatable relative to the jacking columns about vertical axes"), 11:67-12:2 ("Supports 74 extend across opening 69 and secure the can with transducer 70 at the rotational center between the jacking column and the yoke."), 12:8-11 ("a signal that indicates the angular position of yoke 62 relative to jacking column 14 and any changes in the angular position due to rotational movements of the yoke"), 12:59-63 ("The onboard computer then signals by how much worm gear drive 60 must rotationally adjust the orientation of yoke 62 and crawler tracks 16 to again align the crawler tracks with the paving direction."), 13:27-32 ("With the crawlers resting on the ground and

initially facing in the paving direction 18, they are rotated 90° about the vertical jacking column axis with worm gear drive 60 into a position in which they are substantially transverse to the paving direction.”); Bryden Decl., ¶30.

Thus, a person of ordinary skill in the art applying the plain and ordinary meaning for these limitations would construe it to exclude arrangements where a rotary actuator turns either cylinder of the jacking column along with the crawler track. Bryden Decl., ¶31.

VII. GROUND 1: THE CLAIMED INVENTION IS PATENTABLE OVER THE CIII-RIO-FILES COMBINATION (ALL CLAIMS)

A. CIII in View of Rio Does Not Render Obvious “A Crawler Track Coupled to a Yoke Which is Rotatably Coupled to the Jacking Column” or “a Slew Gear Drive Secured at a Lower End of the Inner Tube and to a Top of the Yoke to Translate Relative Rotational Movements Between the Jacking Column and the Crawler Track About the Upright Axis” (Independent Claim 1)

The Challenged Claims are patentable because neither CIII nor Rio discloses a crawler track rotatably coupled to a jacking column, and Petitioner's argument for combining CIII and Rio such that CIII's crawler track would rotate with respect to the entirety of its jacking column is the product of impermissible hindsight. Bryden Decl., ¶32.

Collateral estoppel from Ex. 1036 (“the '749 FWD”) does not bar any of the following arguments for several reasons. First, the language of the '749 Patent is materially different from that of the '723 Patent, so the issues presented are not

identical. *C.R. Bard, Inc. v. Medline Indus., Inc.*, No. IPR2019-00035, Paper 102 at 54 (P.T.A.B. Nov. 23, 2022) (“The material differences in the claims, alone, and thus the issues previously decided, precludes a finding of collateral estoppel.”); *see also TQ Delta, LLC v. 2Wire, Inc.*, No. 13-1835-RGA, 2021 WL 2671296, at *5-6 (D. Del. June 29, 2021) (finding that explanation of how the additional limitations alter the invalidity analysis overcomes the application of collateral estoppel). For example, whereas the ’723 Patent requires coupling a slew drive to a jacking column and crawler track (via the yoke) to implement the claimed rotatable coupling, the ’749 Patent merely required a rotary actuator physically between the jacking column and crawler track, without any requirement that it be coupled to, or provide a rotatable connection between those elements. ’749 FWD at 68-79.

Patent Owner’s arguments also depend at least in part on a claim construction issue that the Board declined to decide in the ’749 FWD. *See id.* at 36-37 (declining to consider whether the claims of the ’749 Patent required the crawler track to rotate with respect to the entire jacking column). Collateral estoppel does not attach to any issues that were not decided in the earlier action. *Google LLC*, 54 F.4th at 1381.

Still further, many of the Board’s earlier determinations regarding how and why a POSITA would have combined CIII and Rio depended on construing the claims to encompass embodiments where the swing leg and crawler track were moved with the track off the ground. That reasoning would not apply in this case

because the Challenged Claims *are* limited to the on-the-fly steering embodiments, meaning again that the issues presented in this case are not identical, and collateral estoppel cannot resolve them.

Further, while the Federal Circuit affirmed the '749 FWD, it did so in a Rule 36 Judgment, which means that collateral estoppel *only* attaches to those determinations that were “implicitly or explicitly decided on appeal.” *TecSec, Inc. v. Int’l Bus. Machs. Corp.*, 731 F.3d 1336, 1341-42 (Fed. Cir. 2013) (citation omitted). Because the Court did not explicitly decide any issues on appeal, collateral estoppel only applies to decisions “decided by *necessary* implication.” *Id.* at 1342 (citation omitted). However, because the '749 FWD applied a broad construction (requiring only that the actuator be located physically between the jacking column and crawler track), the disclosure of Ex. 1008 (“Miller”) is not relevant to the claims of the '723 Patent.

1. Neither CIII nor Rio Expressly Discloses “a crawler track rotatably coupled to the jacking column”

Neither CIII nor Rio discloses a swing leg assembly with a crawler track rotatably coupled to the entire jacking column. Instead, CIII and Rio both disclose assemblies where the inner tube of the jacking column rotates along the crawler track. CIII at 378 (“On 4-track capable machines, the track yoke is bolted to the base plate of the inner guide tube.”); Rio at 5:32-6:6 (discussing the rotation of the inner tubular member 58 using a key and keyway arrangement to permit sliding

between it and the outer cylinder 66); *see also* '749 FWD at 11-12, 77 (Rio discloses a complex jacking column with an internal “key and keyway arrangement” controlling the rotation of the “inner tubular member” of its lifting column that “is connected to the bracket 54” which “may be a simple axial wheel support . . . or may support a track section”); Bryden Decl., ¶33.

The jacking column of the '723 Patent similarly includes inner and outer tubes. '723 Patent at 11:22-41. However, unlike the fixed connections between the inner cylinders and crawler tracks disclosed in CIII and Rio, the claimed crawler track is rotatably coupled to the jacking column in its entirety. Construing the claims to encompass rotation of the inner tube along with the crawler track would be inconsistent with the claim's requirement that only the crawler track must rotate relative to the jacking column. *See* § VI.A, *supra*. Accordingly, as Dr. Singhose acknowledged on cross-examination, Rio does not expressly disclose a crawler track rotatably coupled to a jacking column. Ex. 2009 (“Singhose Tr. II”) at 18:3-18, 30:12-25; Bryden Decl., ¶34.

2. Neither CIII nor Rio Expressly Discloses a Slew Drive Coupled to a Jacking Column and a Crawler Track

Nor do CIII and Rio disclose coupling “a slew gear drive secured at a lower end of the inner tube and to a top of the yoke to translate relative rotational movements between the jacking column and the crawler track” '723 Patent at Claim 1; Bryden Decl., ¶35.

CIII admittedly does not disclose a slew drive (Pet. at 14, 31), and Rio is clear that its second rotary actuator turns the asphalt milling machine's crawler track by rotating the portion of the jacking column that is fixedly coupled to the crawler track:

The second actuator 44 is connected to the lifting column 46 and is ***adapted to cause at least a portion of the lifting column 46 to rotate about a lifting column axis 48*** that is oriented generally vertically relative to the work machine 12.

Rio at 4:56-60 (emphasis added); *id.* at 5:32-61 (The rotary actuator “causes the cylinder 66 to rotate as the cylinder flange 68 slides on the outer tubular member 60” of the lifting column). “The cylinder 66 is engaged with the inner tubular member 58 by a pair of keys 74” and the corresponding key and keyway prevents relative rotational movement between the crawler track, inner tubular member 58, and cylinder 66. *Id.* at 5:63-6:6; Bryden Decl., ¶36.

Rio does not describe *any* embodiments in which its second rotary actuator does not “cause at least a portion of the lifting column 46 to rotate about a lifting column axis 48.” *Id.* at ¶ 37. Therefore, Rio fails to reasonably suggest “a slew gear drive secured at a lower end of the inner tube and to a top of the yoke to translate relative rotational movements between the jacking column and the crawler track.” *Id.*

3. Petitioner's Proposed Combination of *Rio* and *CIII* is the Product of Impermissible Hindsight

Petitioner's proposal to modify "CIII's leg assembly by substituting its steering cylinder for Rio's rotary actuator 44 positioned between the bottom of the jacking column and the top of the yoke associated with each crawler track, such that the rotary actuator translates relative rotational movements between the jacking column and the crawler track" is the product of impermissible hindsight. Pet. at 82; *see also id.* at 81; Bryden Decl., ¶38.

a) The "State-of-the-Art" References are Not "State-of-the-Art" and Do Not Establish That it Was Well Known to Rotatably Couple a Crawler Track to a Jacking Column

Because neither CIII nor Rio teaches or suggests modifying their fixed crawler track/jacking column couplings with rotatable couplings, Petitioner cites several "state-of-the-art references" for the proposition that "this design was well known." Pet. at 81; *see also id.* at 34-35. However, *none* of the many "state-of-the-art" references cited in the Petition—which are many decades old—disclose or even fairly suggest rotatably coupling a crawler track to a jacking column. Certainly none establishes that such couplings were "well known" or would have provided the many benefits that customers in the paving industry can no longer live without. *See* § IX, *infra*; Bryden Decl., ¶39.

Miller does nothing to cure CIII and Rio's deficiencies because its steering housing 122 is not a slew drive and is not coupled to the jacking column and crawler track, as claimed. Miller's steering housing 122 is connected to the walking beam of the machine's frame, not the inner tube of a jacking column. See Miller at 5:21-26 (describing that the "extendable support member" attaches to bogey-mount 66, 68 not "steering housing 122"), 6:8-13 ("A steering spindle is provided at the ends of each walking beam. Thus, as previously described, the walking beam 64 has the steering spindles or housings 122 at its ends"); Bryden Decl., ¶40.

Littman's prime mover is far afield from the paving machine disclosed in the '723 Patent and fails to disclose a slew drive between a jacking column and a crawler track. See Ex. 1007 ("Littman") at 1:11-27; Ex. 2008 (Singhose Tr. I") at 152:1-153:12 (stating that Littman's use in road construction would be similar to a forklift). Rather than being coupled to a jacking column and crawler track, Littman's rotary actuator is located fully within the telescoping second section 70 that Petitioner likens to a jacking column. Littman at Figs. 4, 5. Indeed, rather than disclose the type of upright jacking columns found in the '723 Patent, Littman's elongated legs articulate at angles during operation and, as such, its wheels are subject to an entirely different set of forces than those seen in the claimed paving machine in the '723 Patent. Littman at Fig. 2; Bryden Decl., ¶41.

Whitaker's supporting means 26 (which Petitioner likens to the claimed jacking column) has rectangular upper telescopic sections and a round lower section 28 that is fixedly coupled to the crawler track and ring gear 31. Ex. 1011 ("Whitaker") at Fig. 3. Motor 32 is mounted on the lower end of the support shaft 26 and rotates lower section 28 in conjunction with its crawler track. *Id.* Accordingly, like CIII and Rio, Whitaker discloses rotating the crawler track along with a portion of the jacking column. Thus, Whitaker also does not establish that it "was well known" to rotate a crawler track relative to an entire jacking column, let alone doing so with a slew drive coupled to the jacking column and crawler track such that the crawler track rotates relative to the entire jacking column. Pet. at 45; Bryden Decl., ¶42.

Ex. 1009 ("Johns") also fails to establish that it was "well known" to place a slew drive physically between a jacking column and crawler track because Johns "mobile work platform" entirely lacks a swing leg assembly and jacking column. It is also not comparable in weight to a conventional large paving machine. Johns at Fig. 2; Singhose Tr. II at 25:12-21. It also turns wheels, which are much easier to turn than crawler tracks. Bryden Decl., ¶43.

Neither of Petitioner's primary references teach or suggest rotatably coupling a crawler track to a jacking column with a slew drive. *Id.* at ¶44. And far from confirming that the claimed design was well known, the "state-of-the-art" references

disclose several ways to turn a wheel or a crawler track with a rotary actuator that *do not* involve (1) rotating the crawler track with respect to an entire jacking column or (2) coupling a slew drive to a crawler track and jacking column to cause such rotational movement. “Without any explanation as to how or why the references would be combined to arrive at the claimed invention, we are left with only hindsight bias that *KSR* warns against.” *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (citation omitted).

b) Petitioner's Proposed Combination Merely Retraces the Inventor's Steps With the Benefit of Hindsight

Lacking evidence that the claimed arrangement was known, let alone “well known” in the art, Petitioner's proposal to rotatably couple CIII's crawler track to its jacking column with Rio's rotary actuator simply retraces the path the inventor took to achieve the claimed invention. *See Otsuka Pharm. Co. v. Sandoz, Inc.*, 678 F.3d 1280, 1296 (Fed. Cir. 2012) (“The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight.”) (citations omitted). Dr. Singhose tells a just-so story about all of the modifications a POSITA would have found *obvious* at the time of the invention without showing that the claimed arrangement of components was known or even likely to produce the considerable benefits that caused the entire industry to copy the design. *See Ex. 1002* (“Singhose Decl.”), ¶¶ 64-87; Bryden Decl., ¶45.

Petitioner perversely asserts that the benefits of G&Z's invention, including the relative simplicity G&Z's jacking column design compared to prior art designs, provided *a priori* motivation for the modification. See Pet. at 34-35. The opposite is true. *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (“[S]implicity does not establish obviousness; indeed, simplicity may represent a significant and unobvious advance over the complexity of prior devices.”). Petitioner's recognition that the simplicity of G&Z's design is an “advance over the complexity of prior devices” like CIII and Rio is evidence that the claims are *patentable*, not evidence that they are obvious. *Id.*

As in *Sensonics*, “the references discussed . . . do not . . . lead one of ordinary skill in the art to the invention in suit.” *Id.* CIII, Rio, Miller, Littman, Whittaker, and Johns *all* fail to disclose a crawler track that rotates with respect to a jacking column or a slew drive coupled to a jacking column and crawler track that causes such rotation. “To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability.” *Id.* (citation omitted).

B. The CIII-Rio-Files Combination Does Not Disclose Nor Render Obvious the Claimed Processor (Claim 7)

Independent Claim 1 recites rotating the crawler track when “***under load without lifting the crawler track***,” which limits the claimed invention to the “on-

the-fly steering embodiment. '723 Patent at Claim 1 (emphasis added). Claim 7 further requires a processor that coordinates the steering of the crawler track in response to changes in the orientation of the swing leg. *Id.* at Claim 7; Bryden Decl., ¶46.

The CIII-Rio combination⁵ does not disclose a processor that determines an angular position change of a swing leg and sends signals to rotate the crawler track *when moving and under load*. Because the swing legs in CIII and Rio must be locked when moving and under load, there would never be any change in the swing leg's angular position for the processor to determine. Pet. at 98-103; Bryden Decl., ¶46.

There is no basis for the Board to apply collateral estoppel from the '749 FWD to this issue because Claim 7 is limited to coordinated steering of swing legs and crawler tracks while the paver is moving and under load whereas the Board declined to limit the claims to the “on the fly” embodiment in the '749 FWD. *See Google*, 54 F.4th at 1381 (collateral estoppel requires the issues of patentability be identical) (citing *Ohio Willow Wood*, 735 F.3d at 1342); '749 FWD at 39-40 (construing the independent claims to encompass an embodiment “where the crawler track is lifted off the ground and rotated”).

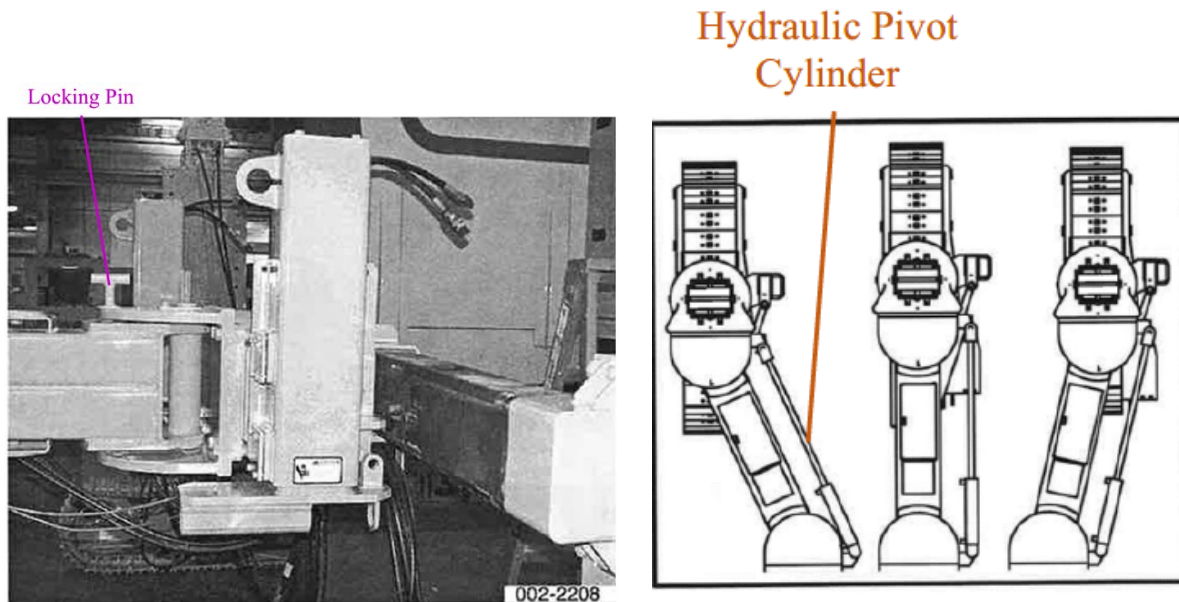
⁵ Petitioner does not suggest that Tax, which does not disclose any means for steering its elongated arms, is relevant to this claim. *See* Pet. at 96, 98.

CIII describes a traditional paving machine that required a team to stop the machine and lift the crawler track to change the swing leg position:

To swing the leg, an operator ***raises the crawler track off the ground*** with the jacking column, removes the pin locking the leg in place, and holds a switch to extend or retract the pivot cylinder until the leg reaches the desired position.

Pet. at 16 (emphasis added); CIII at 85 (describing how CIII's swing leg/crawler track is repositioned by lifting the crawler track off the ground). After raising the crawler track, the team would remove the locking pins⁶ used to keep the swing leg from moving while under load and move the swing leg to the desired position:

⁶ CIII's three-track configuration includes locking pins while its four-track configuration includes turnbuckles, each are used to keep the swing leg locked in place when under load. See Pet. at 18; '723 Patent at 3:15-36; Ex. 2013 at Fig. 3 (depicting the traditional paving machine having two locking pins for each swing leg).



Pet. at 16-17 (citing CIII at 85, 79-80); *see also id.* at 48 (“CIII discloses pivoting the swing leg about a vertical access of the hinge bracket attached to the frame **by removing the locking pin from the hinge bracket** and ‘mov[ing] the swing control switch to extend the swing cylinder.’”) (citing CIII at 80) (emphasis added); Bryden Decl., ¶47.

Rio’s swing leg movement likewise only occurs when the machine is stopped and the lifting column lifted off the ground:

First, the **operator stops the machine 10** and engages the parking brake which sends a brake set signal 116 to the controller 32 Next, . . . **the lifting column 46 [is] raised relative to the machine frame 12** In response to receiving the permissive signals indicating **that the machine is safely stopped**, . . . the controller 32 activates **the anti-swing actuator 85** and the anti-rotate actuator 98 to release the corresponding

protrusions 86, 102 from engagement with the respective receptacles 88, 96.

Rio at 7:62-8:27 (emphasis added); Bryden Decl., ¶48.

In the CIII-Rio combination, Petitioner replaces CIII's locking pins (turnbuckles) with Rio's anti-swing device "to fully automate rotation." See Pet. at 38. But even with this substitution, the anti-swing device is only disengaged when "the machine is safely stopped" and the "lifting column raised." Rio at 7:62-8:27. Once the track is raised the swing leg is unlocked, the operator can relocate the swing leg. See Pet. at 37-38; *id.* at 16 (acknowledging that CIII's hydraulic pivot cylinder is engaged only after the crawler track is raised off the ground and the locking pins (or, in this case, the anti-swing device) disengaged); Bryden Decl., ¶49.

On cross-examination, Dr. Singhose confirmed the use of a locking mechanism in the CIII-Rio combination:

So the pins --yeah, it's somewhat similar. The pins in the CIII that we talked about before, just to clarify, those were pins that were holding the swing arm in place to the frame, and then also holding the jacking column in place relative to the swing arm. But yeah, it's very similar idea is that you ***have manual pins that help lock the CIII in place. Rio is using a very similar locking pin device***, but it's telling you that you can control it with a computer, you can turn it on and off with a computer and a control system.

Singhose Tr. I at 104:7-19 (emphasis added); *see also id.* at 52:24-54:5, 57:23-58:14 (testifying that this CIII's turnbuckles (locking pins) are “designed **to hold those swing arms in place** once you've swung them into the place that you want”) (emphasis added); Bryden Decl., ¶50.

Therefore, the CIII-Rio combination would have, at most, provided for repositioning when the machine is stopped and the swing leg/crawler track raised off the ground. Accordingly, the CIII-Rio combination does not disclose the claimed processor's coordinated performance with the angular position transducers when the swing leg/crawler track is moving and under load. Bryden Decl., ¶51.

C. CIII-Rio-Files Combination Does Not Disclose Nor Render Obvious a Swing Leg Configured to Relocate a Jacking Column With a Crawler Track While Moving and Under Load (Claim 6)

The CIII-Rio combination does not disclose nor render obvious the “swing leg is configured to relocate the jacking column with the crawler track while moving and under load”⁷ for at least two reasons. *First*, because the anti-swing device holds the swing leg in place when moving and under load, the CIII-Rio combination *only relocates the swing leg when the machine is stopped and not load bearing*. *Second*, Petitioner fails to show why it would have been obvious to modify the CIII-Rio

⁷ Hereinafter referred to as the “swing leg relocation” limitation.

combination in such a way that the swing leg is relocated while moving and under load, absent hindsight. Bryden Decl., ¶52.

1. The CIII-Rio Combination Does Not Disclose the Swing Leg Relocation Limitation Because it Relocates the Swing Leg When Stopped and Raised Off the Ground

The paving machine disclosed in the '723 Patent can coordinate the steering of the swing legs and crawler tracks to maneuver around obstacles while moving and under load. *See* § III, *supra*. The CIII-Rio combination does not disclose this capability because its machine must be stopped and the crawler track must be lifted before attempting to relocate the swing leg. Bryden Decl., ¶53.

The '723 Patent describes and claims the on-the-fly relocation of the swing leg (inclusive of the jacking column and crawler track) when the machine is in operation. '723 Patent at 16:14-16 (“[T]he present disclosure provides for machines that can ***adjust leg and crawler track location while in operation ('on the fly').***”) (emphasis added); *id.*, Claim 6. In particular, the swing leg is relocated through the coordinated use of a processor, angular position transducers, a slew gear drive, and a hydraulic swing leg actuator:

While a paving machine is moving, it is capable of automatically going from a working position to the narrow and predetermined profile of the transport position, ***relocating the crawler tracks attached to jacking columns via slew drives and transducers attached the swing legs***. The ***transducers can control adjustment via slew drives***

'723 Patent at 16:24-32 (emphasis added).

While the paving machine is moving, allowing automatic repositioning of one or more swing legs (inclusive of jacking column and crawler tracks) into new positions provides for the ability to avoid obstacles (e.g., manholes, guard rails, posts, etc.) or large changes in grade. The ***adjustment implemented by the transducers coupled to the swing leg and crawler tracks***

Id. at 16:44-53 (emphasis added); *see also id.* at 6:47-54 (disclosing that the swing leg hydraulic cylinder is actuated to move the swing leg when under load); Bryden Decl., ¶54.

The CIII-Rio combination is incapable of such relocation while the swing leg is moving and under load because the leg is *locked in place* via the anti-swing device (or locking pin). *See* § VII.B, *supra*. Accordingly, because CIII-Rio machine's anti-swing device *prevents any swing leg movement when the machine is moving and under load*, the relocation of the swing leg is *only* performed when the leg is lifted off of the ground. *Id.*; Bryden Decl., ¶55.

In light of the foregoing, Petitioner's argument on swing leg relocation is premised on the faulty belief that the swing leg can be rotated when steering the crawler track. *See* Pet. at 96-97 (alleging that steering the crawler track "would have allowed the swing leg to be rotated."). Petitioner's state-of-the-art-evidence (*i.e.* Littman) provides no recourse because it does not discuss swing leg relocation, much

less how the CIII-Rio combination's current design would be modified to relocate the swing leg as claimed. *See id.*; Bryden Decl., ¶56.

2. Petitioner Fails to Adequately Show Why it Would Have Been Obvious to Relocate CIII-Rio's Swing Leg as Claimed

Petitioner's conclusory allegation that it would have been obvious to modify the CIII-Rio combination to arrive at swing leg relocation suffers from several deficiencies, including (1) being fraught with hindsight because no record evidence exists for such swing leg relocation apart from the '723 Patent itself, and (2) failing to address how the relocation would work given the CIII-Rio design discussed above. *See* Pet. at 97; Bryden Decl., ¶57.

First, as established above, to relocate the swing leg/track, both CIII and Rio teach stopping the machine and raising the track off the ground. Accordingly, neither reference discloses the controls and design required for the swing leg relocation as claimed. Bryden Decl., ¶58.

Littman likewise does not disclose the required controls or design configuration because it simply discloses a stabilizer leg for a prime mover, missing entirely is a swing leg assembly. *See, e.g.*, Littman at Figs 2-3. With no evidence on record, Petitioner uses the '723 Patent itself as a guide to allege that it would have been obvious to modify the CIII-Rio combination in the way claimed, which constitutes impermissible hindsight. *See Otsuka Pharm.*, 678 F.3d at 1296; Bryden Decl., ¶59.

Second, Petitioner does not address how Rio's controls would (or even could) relocate CIII-Rio's swing leg when moving and under load given that the *swing leg is locked and incapable of any movement*. The swing leg is only unlocked and pivoted to another location when stopped and the track raised, as the CIII-Rio design is intended to work. See Pet. at 37 (CIII-Rio combination uses CIII's hydraulic pivot cylinder/Rio's actuator to move the swing leg when the machine is stopped and the track non-load bearing); *id.* at 38 (CIII-Rio combination uses Rio's anti-swing device which is only deactivated when the machine is stopped and the crawler track is non-load bearing); Bryden Decl., ¶60. Where, as here, the record lacks a "clear, evidence-supported account" of "how the combination" would work to achieve the claimed invention, a petitioner's obviousness allegation is improper. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017); *LG Elecs., Inc. v. Constellation Designs, LLC*, No. IPR2023-00228, Paper 10 at 15-16 (P.T.A.B. Jul. 11, 2023).

* * *

In view of the foregoing, Petitioner fails to show that its proposed CIII-Rio-Files combination discloses or renders obvious the swing leg relocation limitation. Bryden Decl., ¶61.

VIII. GROUND 2: THE CIII-RIO-FILES-TAX COMBINATION DOES NOT TEACH NOR RENDER OBVIOUS THE SWING LEG RELOCATION LIMITATION

Petitioner's addition of Tax also fails to show that CIII-Rio combination renders obvious the swing leg relocation limitation and does not rectify the abovementioned deficiencies. *See* § VII.C, *supra*; Bryden Decl., ¶62.

Here again, Petitioner relies on the '723 Patent as a guide because Tax does not disclose a paver swing leg assembly, let alone one that relocates the swing leg when moving and under load. Instead, Tax discloses a *crane vehicle* that includes four arms that are each respectively attached to a *wheel*. *See* Tax at 4:30-37 (describing the crane's arms), Fig. 2; *see also id.* at 2:38-44 (depicting the conventional crane). Indeed, those skilled in the art would not have looked to Tax's crane for guidance in constructing a paving machine. Ex. 2007 at 1 (industry expert expressing skepticism of G&Z's [REDACTED]

[REDACTED]) (July 14, 2009 message from David Pope, President of Kinematics Manufacturing Inc.); Bryden Decl., ¶62.

Therefore, like CIII, Rio, and Littman, Tax provides no path for which a POSITA would have followed to relocate a paving machine's swing leg (with a jacking column/crawler track) in the manner claimed. *See Otsuka Pharm. Co.*, 678 F.3d at 1296. This is further evidenced by the passage of 42 years between Tax and

the claimed invention, which suggests that the inventive swing leg relocation—occurring when moving and load bearing—was not obvious apart from hindsight. *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1356 (Fed. Cir. 2013) (finding that “elapsed time between the prior art and the [patent’s] filing date evinces that the [patent’s] claimed invention was not obvious to try” and further that the “considerable time lapse suggests instead that [one] only traverses the obstacles to this inventive enterprise with a resort to hindsight”); Bryden Decl., ¶62.

Finally, even if a POSITA would have looked to Tax’s teachings (they would not have), the CIII-Rio combination includes design features that dictate relocation only when the machine is stopped and the swing leg/crawler track raised. See § VII.C.2, *supra*. Thus, CIII-Rio combination remains deficient even in view of Tax’s crane teaching, which provides no indication of how to rectify the deficiencies in the CIII-Rio combination. Bryden Decl., ¶63.

IX. GROUND 3: THE “DISPOSED ON” LIMITATION IS SUPPORTED IN THE ’723 PATENT

The ’723 Patent provides written description support under 35 U.S.C. § 112 for “a first angular position transducer . . . disposed on the modular frame or the swing leg to measure an angular position between the swing leg and the modular frame,” as recited in Independent Claim 1. Bryden Decl., ¶64.

G&Z’s SmartLeg/AccuSteer technology represented a major step forward in the paving industry. See § X, *infra*. Rather than locking the paver’s swing legs in

place during operation, G&Z's AccuSteer pavers steer the swing legs and crawler track in together on-the-fly as a function of (1) the frame/swing leg angle and (2) the swing leg/crawler track angle:

To facilitate the required realignment of the crawler tracks, another important aspect of the present invention preferably replaces the turnbuckles with hydraulic actuators and provides ***angular position transducers at the pivot connection for the swing leg at the hinge bracket*** and another such transducer between the jacking column and the crawler track. An onboard computer or other processor receives the outputs from the transducers and generates a signal to ***pivot the crawler track relative to the associated jacking column to keep the crawler tracks oriented in the paving direction when the angular orientation of the swing leg changes***, and also keeps all the crawler tracks' orientations synchronized.

'723 Patent at 6:19-30 (emphasis added).

Those of ordinary skill in the art understand that angular position transducers measure the amount of rotation of one component of a system relative to another. See, e.g., Ex. 2017 at 5; Ex. 2018; Singhose Tr. II at 11:6-12:18. In practice, the transducer is fixed to one component, and it measures the relative rotation of the other. *Id.* It is, generally speaking, a matter of preference and design *which* component the transducer is fixed to and which one it measures. Accordingly, a POSITA understands, in light of the disclosure, that there are only two locations to locate an angular position transducer to “measure an angular position between [a]

swing leg and [a] modular frame”: It would be “disposed on the modular frame or the swing leg,” as claimed. ’723 Patent at Claim 1; Bryden Decl., ¶65.

In accordance with this well-known principle in light of the disclosure, the ’723 Patent discloses placing an “angular position transducer[] at the pivot connection for the swing leg at the hinge bracket.” ’723 Patent at 6:19-25. The hinge bracket is “in a fixed position relative to the bolster and the swing leg,” and the bolster is part of the frame. *Id.* at 6:12-18. The ’723 Patent does not specify which *part* of the pivot connection the transducer must be placed on, and, as discussed directly above, it was well understood that an angular position transducer could be disposed on *either* component to measure the relative angle between them. *Id.* at 6:17-18; Bryden Decl., ¶66.

Petitioner nevertheless argues that there is no written description for an angular position transducer disposed on the frame or swing leg because the specification describes mounting the transducer on the hinge bracket. Pet. at 109-10. This interpretation misreads the specification, which describes the hinge bracket as part of the frame, and adopts an overly narrow interpretation of the phrase “disposed on” that is inconsistent with its plain and ordinary meaning and the intrinsic record. Bryden Decl., ¶¶67-68.

First, because the specification and claims describe the hinge bracket as part of the **frame**, disposing an angular position transducer directly on the hinge bracket

is tantamount to disposing it directly on the frame. As disclosed and as claimed, the paving machine of the '723 Patent has six main parts: (1) a modular frame, (2) a plurality of swing legs, (3) a jacking column secured to each swing leg, (4) a crawler track rotatably coupled to each jacking column, (5) a slew gear secured to the jacking column and crawler track (via a yoke), and (6) angular position transducers for measuring the relative angular positions of the crawler tracks and swing legs. See '723 Patent at Abstract and Claim 1; Bryden Decl., ¶69.

The '723 Patent describes the “hinge bracket” as the portion of the paving machine where each swing leg is “pivotally mounted.” '723 Patent at 5:66-6:2 (“According to a first aspect of the present invention, each bolster swing leg is pivotally mounted on a hinge bracket that is secured to the front (or aft) ends of the side bolsters of the paving machine.”). The Specification consistently describes the hinge bracket as secured to other sections of the frame (*e.g.* the bolster) rather than describing it as secured to the frame itself, which conveys to a POSITA that the hinge bracket is part of the frame, not a separate component. The Challenged Claims recite the “hinge bracket” in the same way. Rather than being introduced as a separate component between the “modular frame” and “swing legs,” it is introduced as the component *through which* each swing leg is coupled to the frame. *Id.* at Claim 1 (“A paving machine comprising: a modular frame; a plurality of swing legs, each

swing leg coupled to a surface of the modular frame via a hinged bracket”); Bryden Decl., ¶70.

Because the claimed hinge bracket is part of the frame, an angular transducer located at the pivot connection between the frame and the swing leg (as disclosed in the '723 Patent) must be “disposed on” either the frame or the swing leg for it to “measure an angular position between the swing leg and the modular frame,” as recited in Claim 1. Bryden Decl., ¶71.

Second, even if the hinge bracket were not considered part of the frame, the Challenged Claims enjoy written description support because the term “disposed on” does not require that the angular position transducer be disposed *directly* on either the swing leg or modular frame, as Petitioner’s written description argument implies. Pet. at 109. Notably, while Petitioner’s written description argument turns on this a very specific, very narrow understanding of the term “disposed on,” it declined to expressly construe the term in the Petition. Pet. at 108-111. The Board should reject Petitioner’s attempt to narrow the claims to require that the angular position transducer be disposed *directly* on the swing leg or modular frame. Bryden Decl., ¶72.

The plain and ordinary meaning of the phrase “disposed on” does not imply *direct* contact. *Id.*, ¶73. During cross-examination, for example, Dr. Singhose agreed that he was “disposed on” his chair even though his clothing separated his

body from the seat. Singhose Tr. II at 34:21-35:2; Bryden Decl., ¶73. The Board has consulted dictionary definitions of “on” to reach a similar conclusion: “a plate would be on the surface of a table even if the plate only made contact with a table cloth...” *LG Elecs., Inc. v. Toshiba Samsung Storage Tech. Korea Corp.*, No. IPR2015-01642, Paper 37 at 18 (P.T.A.B. Jan. 25, 2017) (quoting Ex. 2020 at 1575 (Webster’s Dictionary)).

And while each case is fact-dependent, many other panels have construed “on” and “disposed on” to encompass indirect contact through intervening elements, which *at least* suggests that the plain meaning of the word “on” is broad enough to encompass direct and indirect contact. *Current Light Sols., LLC v. Jiaxing Super Lighting Elec. Appliance Co.*, No. IPR2023-00271, Paper 18 at 16-18 (P.T.A.B. Aug. 16, 2023) (finding that “an element that is **disposed ‘on’** another element does not preclude the presence of one or more intervening elements and the elements need not be directly touching”) (emphasis added); *LG Elecs.*, No. IPR2015-01642, Paper 37 at 9-19 (construing “**on** each of opposite side surfaces” to mean “proximity with respect” and “does not require necessarily that the coils make direct, physical contact with each of the opposite side surfaces”) (emphasis added); *TPK Am., LLC v. Wintek Corp.*, No. IPR2013-00436, Paper 10 at 9-10 (P.T.A.B. Jan. 10, 2014) (construing “**disposed on**” as “allow[ing] intermediate layers to be interposed between the recited layers”) (emphasis added).

Thus, the plain and ordinary meaning of “disposed on” is not limited to *direct* contact, and a patent owner is “entitled to a definition that encompasses ***all consistent meanings***.” *TI Grp. Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C.*, 375 F.3d 1126, 1136 (Fed. Cir. 2004) (additional emphasis added) (citation omitted). The plain and ordinary meaning of “disposed on,” therefore, covers indirect contact, as confirmed by dictionaries, the specification, and other evidence. *See Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1002-03 (Fed. Cir. 2016) (“The ordinary meaning may be determined by reviewing various sources, such as the claims themselves, the specification, the prosecution history, dictionaries, and any other relevant evidence.”) (citation omitted).

Aside from being inconsistent with the plain and ordinary meaning of the term, Petitioner’s interpretation—by design—excludes the preferred embodiments. That is, after all, the reason it argues the claims lack written description. Pet. at 109-10. However, “[a] claim construction that ‘excludes the preferred embodiment is rarely, if ever, correct and would require highly persuasive evidentiary support.’” *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1378-79 (Fed. Cir. 2013) (citation omitted). Petitioner cites no intrinsic or extrinsic support for its overly narrow interpretation, let alone the “highly persuasive evidentiary support” that would be required to support its interpretation of the Challenged Claims. *Id.*

Similarly, to the extent that the Board finds that the “claim is ambiguous, it should be construed to preserve its validity.” *Ruckus Wireless*, 824 F.3d at 1004. In *Ruckus Wireless*, the Federal Circuit limited “communications path” to “wired communication” to preserve claim validity, “[b]ecause the specification makes no mention of wireless communications” and “construing the [] claims to encompass that subject matter would likely render the claims invalid for lack of written description.” *Id.* (citation omitted). Applying the Federal Circuit’s logic, a construction of “disposed on” encompassing indirect contact preserves validity because the specification describes the angular position transducer’s indirect contact with either or both the swing leg and modular frame through the hinge bracket.

For at least the foregoing reasons, Patent Owner respectfully submits that the Challenged Claims are patentable under 35 U.S.C. § 112. Bryden Decl., ¶74.

X. THE OBJECTIVE INDICIA OF NONOBVIOUSNESS CONFIRMS PATENTABILITY OVER THE CIII-RIO COMBINATIONS

A. A Nexus Exists Because the Objective Indicia Evidence is the Direct Result of the Unique Characteristics of the Claimed Invention, Practiced by G&Z’s Paving Machines

“For objective evidence of secondary considerations to be relevant, there must be a nexus between the merits of the claimed invention and the objective evidence.” *Volvo Penta of the Ams., LLC v. Brunswick Corp.*, 81 F.4th 1202, 1210 (Fed. Cir. 2023) (citation omitted). Where the “evidence is a direct result of the unique characteristics of the claimed invention” a nexus exists. *Id.* This is the case here.

The claimed invention is directed to the on-the-fly embodiment with the recitation of, *inter alia*, a “slew gear drive . . . capable of steering the crawler track ***under load without lifting the crawler track***” and “the swing leg is configured to relocate the jacking column with the crawler track ***while moving and under load.***” ’723 Patent at Claims 1, 6 (emphasis added), and 7; *see also* ’749 FWD at 38-40. G&Z’s SmartLeg/AccuSteer technology is directly tied to the claimed on-the-fly embodiment. Bryden Decl., ¶76.

As discussed in detail below, there was at least a decade-long need for a paving machine that could reposition its swing legs and crawler tracks while moving and under load, as the traditional paving machine had to be stopped and the crawler track raised off the ground for any repositioning (*see* Pet. at 16). This need was resolved by G&Z’s S600 paver with SmartLeg/AccuSteer technology:

The S600 is equipped with G&Z’s new and patented AccuSteer: Slew Drive Track Control. ***The AccuSteer slew drives are mounted on top of the track yokes and are used to steer the tracks.*** The AccuSteer drives are powered with hourglass worm technology to give long life, high accuracy and extremely high maneuverability

The S600 is also available with G&Z’s new and patented SmartLeg: Swing Leg System takes on the fly track line adjustments to the next level. Working in tandem with the AccuSteer system, ***The SmartLeg System allows the operator to adjust the swing leg angle on the fly while automatically keeping the track straight ahead.*** This offers a

high level of flexibility for the contractor to maneuver around track line obstacles (e.g. fire hydrants, airport runway lights, etc.) on the fly and without stopping.

Ex. 2014 at 1-2 (emphases added); *see also* Ex. 2019 at 4. Accordingly, G&Z's SmartLeg/AccuSteer technology enabled on-the-fly steering of the swing legs and crawler tracks when moving and under load and represented a significant improvement over traditional paving machines. Bryden Decl., ¶77.

Other evidence of patentability is tied to the claimed on-the-fly features, including, *inter alia*, copying, industry praise, and commercial success. Indeed, GOMACO, as well as other competitors, implemented G&Z's SmartLeg/AccuSteer technology in their paving machines after having access to G&Z's paving machines at trade shows, which evinces both copying and competitor praise as copying is the sincerest form of flattery. The commercial success of G&Z's paving machines was also driven by the claimed on-the-fly features, as evidenced by GOMACO's release of its copycat paving machines and G&Z's concomitant decline in market share. Accordingly, because the objective indicia evidence is a direct result of the claimed invention's unique on-the-fly characteristics, the necessary nexus exists. Bryden Decl., ¶78.

B. G&Z's SmartLeg/AccuSteer Technology Resolved a Decade Long Need For Repositioning the Swing Leg/Crawler Track When Moving and Under Load

G&Z's paving machines' SmartLeg/AccuSteer technology, which embodies the claimed invention's on-the-fly operation, solved the *at least* decade-long need for a paving machine with swing legs and crawler tracks that could be repositioned when moving and under load. *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1332 (Fed. Cir. 2016) ("Evidence of a long felt but unresolved need tends to show non-obviousness because it is reasonable to infer that the need would have not persisted had the solution been obvious.") (citation omitted); Bryden Decl., ¶¶78-81.

A need for on-the-fly swing leg/crawler track repositioning went unresolved for at least a decade until G&Z released its S600 paving machine with SmartLeg/AccuSteer technology in 2010. Ex. 2021 at 5-8 (G&Z Fall 2010 Newsletter announcing the "New S600 Multi-Purpose Slipform Paver"); '723 Patent at (60) (provisional application filed March 2010). By at least the early 2000s, paving jobs transitioned from rural to urban, resulting in a need for a paving machine that could reposition its swing leg/crawler track when moving and under load to maneuver around obstacles as well as quickly relocate the swing legs/crawler tracks from one mode to another to get to the next jobsite. *See Godbersen-Smith Const. Co. v. Guntert & Zimmerman Const. Div., Inc.*, No. IPR2020-01698 ("-01698 IPR"), Ex. 2022 ("Greenwood Decl."), ¶¶ 3, 5 (explaining that a need was felt starting in

the early 2000s); -01698 IPR, Ex. 2023 (“Holley Decl.”), ¶¶ 4-6 (same). Conventional paving machines were incapable of such swing leg/crawler track repositioning when moving and under load because the machine had to be stopped and each swing leg/crawler track raised off the ground, which could easily take at least three hours. Greenwood Decl., ¶¶ 3-4; Holley Decl., ¶¶ 4-5.

Given the transition to urban paving and the drawbacks of the conventional paving machine, the industry required a paving machine that could: (1) reposition each swing leg and crawler track simultaneously while continuing to move in a paving direction; (2) transform from a paving mode to a transport mode while the swing leg/track is under load and moving; and (3) enable a wide range of steering angles regardless of the angular orientation of the swing leg. See Greenwood Decl., ¶ 4. As Mr. Greenwood, a seasoned veteran within the paving industry, articulated “a slipform company that could respond to the industry demands by introducing a slipform paver that can on-the-fly reposition its swing legs and crawler tracks and relocate the crawler tracks to a 90 degree steering position for maneuvering and to walk the slipform paver out from a paving mode and into the transport mode **would have a license [to] print money.**” *Id.* (emphasis added).

Despite the industry demand, this need went unresolved until G&Z released its S600 paving machine with SmartLeg/AccuSteer technology in 2010. Ex. 2021 at 5-8. G&Z’s S600 machine with SmartLeg/AccuSteer technology introduced “on

the fly” swing leg/crawler track repositioning that provides for “high level of flexibility for the contractor to maneuver around track line obstacles (e.g. fire hydrants, airport runway lights, etc)” and the easy transformation of the paving machine from the paving mode to transport mode. Ex. 2014 at 1-2 (depicting SmartLeg/AccuSteer’s combination of swing leg adjustment, wide range of steering angles, and 90-degree steering for “on the fly” repositioning of the leg/track).

Accordingly, G&Z’s SmartLeg/AccuSteer technology met the industry’s demand and received praise recognizing the significant value of the technology. See Holley Decl., ¶ 9 (explaining that G&Z’s SmartLeg/AccuSteer technology tremendously cut down “cost, labor, and setup”); Greenwood Decl., ¶¶ 6-7 (explaining that G&Z’s “SmartLeg/AccuSteer technology was a revolutionary change to the conventional slipform paver” that “was a license to print money.”).

C. The S600’s Use of a Slew Drive for Driving And Steering Under Load Overcame Industry Skepticism

“Doubt or disbelief by skilled artisans regarding the likely success of a combination or solution weighs against the notion that one would combine elements in references to achieve the claimed invention.” *WBIP*, 829 F.3d at 1335 (citations omitted). Here, due to the weight of the paving machines at issue and the forces required to reposition and maintain the crawler track when under load, slew drive manufacturers and even G&Z’s own engineers were skeptical of the use of a slew

drive for repositioning the track when moving and under load. Bryden Decl., ¶¶82-83.

Kinematics is a motion control company that manufactures slew drives. During development of the S600, G&Z approached Kinematics about using their slew drive for a paving machine application. Ex. 2006 (“Guntert Decl.”), ¶¶ 11-13. However, because the [REDACTED] [REDACTED] Kinematics was skeptical that a slew drive would work in a paving machine and would not guarantee anything without Kinematic factory testing of the loads. Ex. 2007 at 1 (July 14, 2009 message email from the President of Kinematics Manufacturing Inc.). Even G&Z’s VP of Engineering expressed doubt in a slew drive design stating that he did not [REDACTED] [REDACTED] Ex. 2024 at 4 (June 19, 2009 e-mail).

After extensive development, testing, and evaluation, G&Z overcame the skepticism of its unique slew drive use for on-the-fly repositioning that resolved the long-felt need, become the new industry standard for paving machines, and was copied by G&Z’s competitors.

D. GOMACO and Other Competitors Copied G&Z’s SmartLeg/AccuSteer Technology

GOMACO copied G&Z’s S600’s technology as the evidence shows that GOMACO had access via trade shows and that its GP3 paving machine is

substantially similar to G&Z's S600. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (“copying . . . may be demonstrated through . . . or access to the patented product combined with substantial similarity to the patented product.”) (citations omitted); Bryden Decl., ¶¶84-89.

1. GOMACO, Among Other Competitors, Had Access to G&Z's S600 Machine

Following the release of the S600 with SmartLeg/AccuSteer technology, G&Z displayed the S600 at a trade show event (ConExpo 2011) that GOMACO attended. Ex. 2025 at 4 (describing that ConExpo 2011 G&Z displayed its S600 machine and demonstrated the machine's ability to navigate around obstacles and transform from paving mode to transport mode):



Guntert Decl., ¶ 14 (depicting G&Z's S600 at ConExpo 2011).

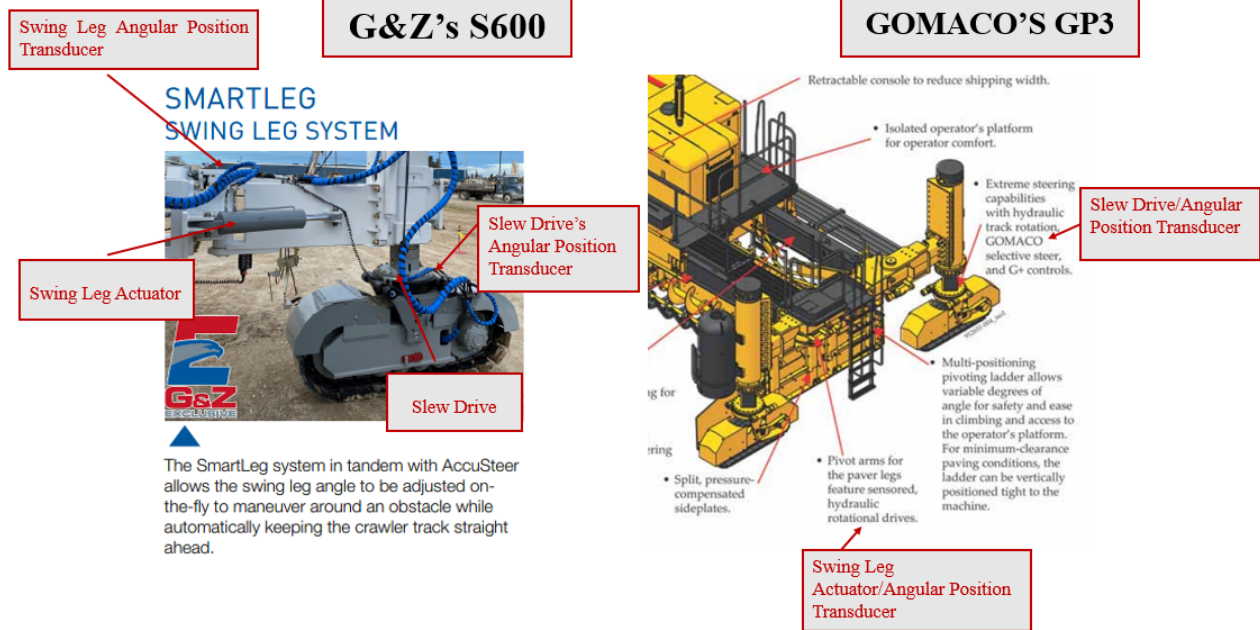
ConExpo bills itself as “the largest construction show in North America” and in 2011 it lived up to its hype. Ex. 2027. The 2011 ConExpo attracted nearly

120,000 attendees from all over the globe, 2,400 exhibitors, and held hundreds of industry meeting and educational seminars. Ex. 2026 at 1-2; Ex. 2027 at 1-2.

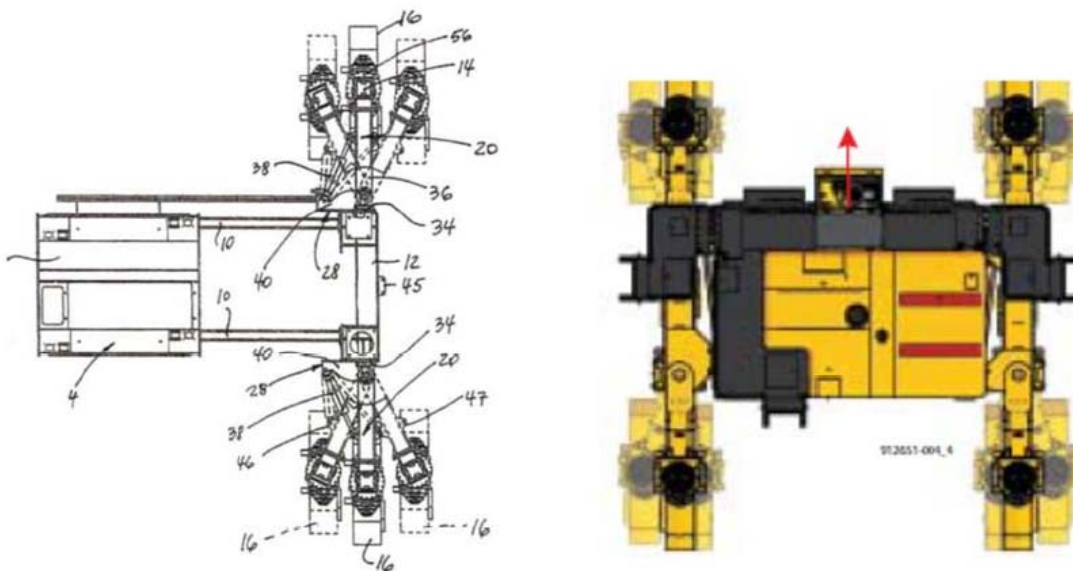
GOMACO was one of the attendees who had access to G&Z's S600. Ex. 2028 at 2. Indeed, GOMACO's VP of Engineering and R&D, [REDACTED] [REDACTED]. Ex. 2010 (Klein Tr.) at 18:17-20:24; *id.* at 16:20-18:3. Accordingly, GOMACO, among other competitors, had access to the design and functionality of G&Z's S600's SmartLeg/AccuSteer technology.

2. GOMACO'S Paving Machine is Substantial Similar to the S600 and its SmartLeg/AccuSteer Technology

GOMACO' GP3 machine was the first of GOMACO'S pavers to include G&Z's SmartLeg/AccuSteer technology—as it likewise used slew drives, angular position transducers, and a swing leg actuator to enable on-the fly repositioning. See Ex. 2029 at 3. The figures reproduced below show the substantial similarity between G&Z's S600 SmartLeg/AccuSteer technology and that of GOMACO's (including the use of a slew drive between the jacking column and crawler track):



Compare Ex. 2019 at 4 (annotated) with Ex. 2029 at 5 (annotated). Implementing G&Z's S600's SmartLeg/AccuSteer technology, GOMACO's GP3 machine (right), like the S600 (left), can reposition its swing leg/crawler track when moving and under load:



Compare '723 Patent at Fig. 2 (The specification drawing depicting the S600 machine's repositioning of the swing leg/crawler track when moving and under load) with Ex. 2029 at 4 (repositioning the leg/track when moving and under load).

GOMACO also copied G&Z's marketing name when introducing GP3's "Smart Leg":

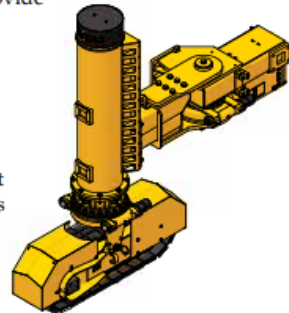
Smart Leg Positioning

Pivot arms for the paver legs feature sensed, hydraulic rotational drives. These Smart Pivots provide the G+ controls with information on the angle of rotation, which coupled with the track rotation sensors, maintain the tracks in the straight-ahead line for steering.

Smart Track Steering

Track steering and rotation is accomplished with sensed, hydraulic rotational drives. This Smart Track Rotation provides the G+ controls with exact track location and position. Extreme steering is now possible with the tracks having the ability to steer farther than ever before.

Smart Leg Pivoting and Smart Track Rotation now lets the G+ system automatically control the direction and speed of each individual track as it travels through a radius.



Ex. 2029 at 3 (annotated). The Smart Leg Positioning/Smart Track Steering (G+ controls) also enables GP3 to, like the S600, transform from the paving mode to the transport mode "within minutes" without stopping the machine and lifting the track off the ground. *Id.*

This is not a case of independent development because GOMACO tried and failed to find a solution to this problem before copying G&Z's design. See *Heidelberger Druckmaschinen AG v. Hantscho Com. Prods., Inc.*, 21 F.3d 1068, 1072 (Fed. Cir. 1994) (expressing that an "argument that an innovation is really quite ordinary carries diminished weight when offered by those who had tried and failed

to solve the same problem, and then promptly adopted the solution that they are now denigrating.”).

When attempting to design a slipform pave that could achieve 90-degree steering and on-the-fly repositioning of the swing leg/crawler track, GOMACO attempted designs including a [REDACTED]. See Exs. 2011, 2012. After several years spent evaluating this option, GOMACO discovered [REDACTED] and shortly thereafter adopted G&Z's claimed solution in its paving machines. Ex. 2012 at 1 (in May 2013, concluding that the [REDACTED]); Ex. 2030 (Guntert -01698 Decl.) at ¶ 23 (the Declaration of G&Z's CEO, Ronald Guntert, submitted in the -01698 IPR establishing that GOMACO introduced its copycat GP3 in 2015). G&Z's other competitors, such as Wirtgen and Paving Powers, also copied G&Z's S600 SmartLeg/AccuSteer technology. See Ex. 2030 at ¶¶ 26-27 (showing that Wirtgen and Power Pavers also introduced copycat paving machines).

E. The Competitor's Praised G&Z's SmartLeg/AccuSteer Technology Through Copying While the Paving Industry in General Praised the Technology Through Recognition of its Significance

G&Z's competitors and the paving industry praised G&Z's SmartLeg/AccuSteer technology through copying and recognition of the significance and value, respectively. *Vulcan Eng'g Co. v. Fata Aluminium, Inc.*, 278

F.3d 1366, 1373 (Fed. Cir. 2002) (establishing that “[a]ppreciation by contemporaries skilled in the field of the invention is a useful indicator of whether the invention would have been obvious to such persons at the time it was made.”) (citation omitted); *see also* Bryden Decl., ¶¶90-91.

As established above, GOMACO and other competitors copied the SmartLeg/AccuSteer technology, which is a “form of flattering praise for inventive features.” *Crocs, Inc. v. Int’l Trade Comm’n*, 598 F.3d 1294, 1311 (Fed. Cir. 2010); § X.D.2, *supra*. The paving industry also praised G&Z’s SmartLeg/AccuSteer technology through appreciation of its significance to the industry. *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1364-65 (Fed. Cir. 2017) (holding that praise from non-competitor industry participants who have evaluated the invention and recognized its “significance and value . . . weighs in favor of nonobviousness.”).

Indeed, the declarations from the fact witnesses (identified above) as well as articles from the paving industry recognized the significance and value of the SmartLeg/AccuSteer technology:

The AccuSteer system allows the operator to independently rotate the tracks almost a full circle, providing ***exceptional maneuverability on site*** and ***rapid swing leg relocation for paving and transport without the need to re-pin steering cylinders***.

Ex. 2014 at 1 (emphasis added).

Working in tandem with the AccuSteer system, the SmartLeg System allows the operator to adjust the swing leg angle on the fly while automatically keeping the track straight ahead. This *offers a high level of flexibility* for the contractor to maneuver around track line obstacles (e.g. fire hydrants, airport runway lights, etc.) ***on the fly and without stopping to make a bolster adjustment.***

Id. at 1-2 (emphasis added).

Using the combination of the ***90 degree steering mode and the SmartLeg feature***, the four swing bolsters and crawler tracks are automatically walked into the outboard, transport position in approximately 30 minutes. ***In this transport configuration, the S600 can easily walk and steer onto a standard 8 ft. wide trailer.*** There is no switching of hoses required on the crawler tracks.

Ex. 2015 at 3 (emphasis added).

The S600 is equipped with G&Z's AccuSteer: slew drive track control. The AccuSteer slew drives are mounted on top of the track yokes and are used to steer the tracks. The AccuSteer drives are powered with hourglass worm technology to give long life, high accuracy and high maneuverability. The hourglass worm engages multiple teeth on the pitch line of the ring gear from the hourglass thread. This engagement ***gives enormous strength and power*** to the gearbox. The AccuSteer system allows the operator to independently rotate the tracks almost a full circle, ***providing maneuverability on site and rapid swing leg relocation for paving and transport without the need to repin steering cylinders.***

Id. at 2 (emphasis added).

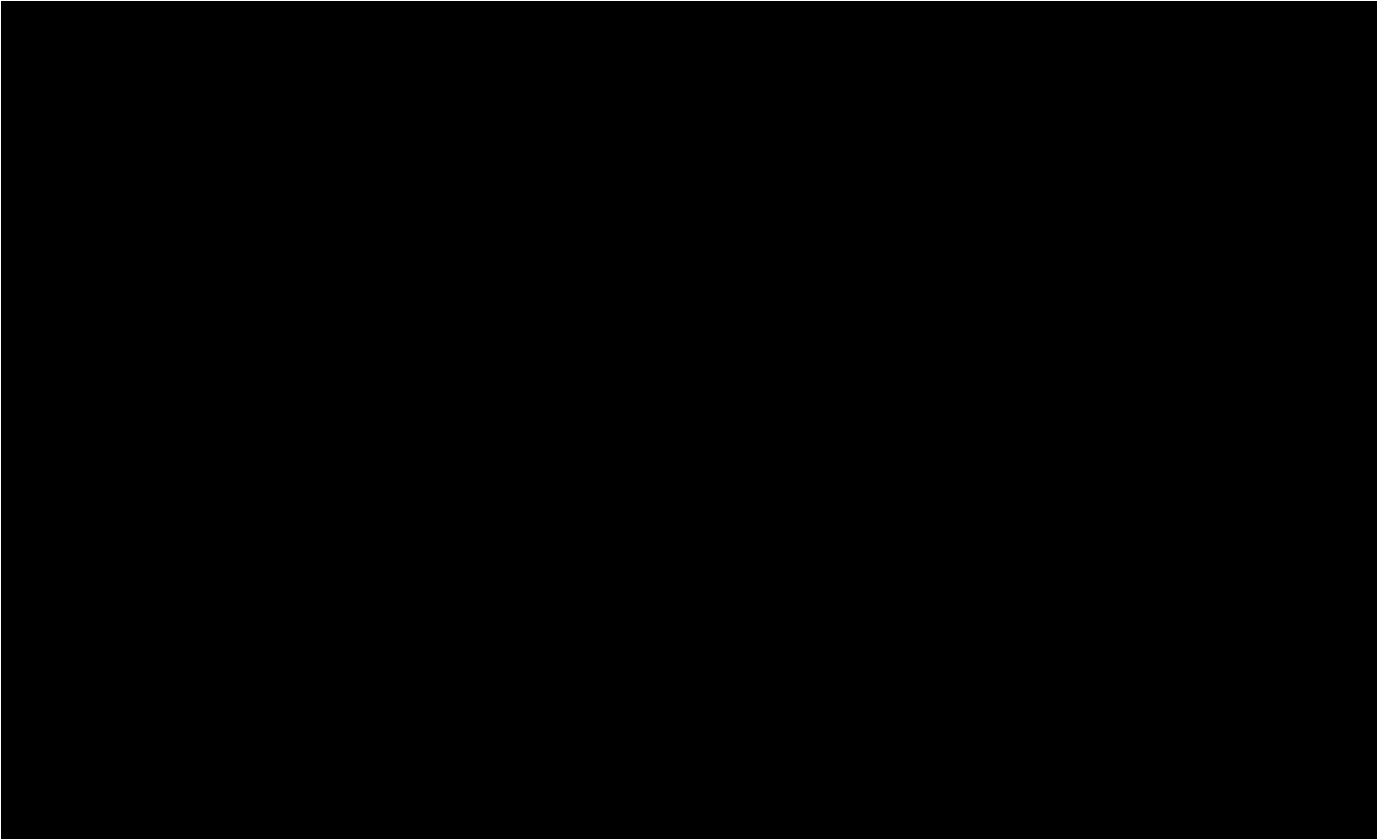
To ***optimize paver manoeuvrability*** at the site, Koss Construction equipped its S600 paver with G&Z's available AccuSteer and SmartLeg systems. These allow the operator to ***manoeuvre the machine around track-line obstacles on the fly*** without having to stop for bolster swing-leg mechanical adjustment or steering transducer resetting.

Ex. 2016 at 4 (emphasis added).

Accordingly, these statements undeniably praise the SmartLeg/AccuSteer technology directly tied to the unique characteristics of the claimed invention's on-the-fly features. Bryden Decl., ¶92.

F. G&Z's S600's SmartLeg/AccuSteer Technology Drove the Commercial Success

Upon hitting the market, G&Z's innovative S600's SmartLeg/AccuSteer technology immediately began paying dividends, with the introduction of these features translating directly into commercial success in the form of significantly increased paving machine sales, driven by those designs equipped with the SmartLeg/AccuSteer technology:



Bryden Decl., ¶93 (citing Ex. 2031).

Once GOMACO entered the market with its copycat version of G&Z's SmartLeg / AccuSteer equipped paving machines, the GP3, G&Z's market share quickly eroded, with G&Z [REDACTED] of its market share between 2014 and 2019 while GOMACO's market share [REDACTED] Bryden Decl., ¶94 (citing Ex. 2035 at 13; Ex. 2036 at 10). GOMACO introduced its GP3 paver in 2015. Ex. 2030 at ¶ 23.

Accordingly, because G&Z demonstrated significant sales of its S600 (and its S400 and S850) paving machines that utilize SmartLeg/AccuSteer, and these “successful product[s] [are] the invention disclosed and claimed in the patent, it is

presumed that the commercial success is due to the patented invention.” *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997) (citation omitted).

* * *

In view of the foregoing, the objective indicia of nonobviousness confirms the patentability of the Challenged Claims over the CIII-Rio combination. Bryden Decl., ¶95.

XI. CONCLUSION

For all of these reasons, the Board should affirm the patentability of the Challenged Claims.

Respectfully submitted,

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This paper complies with the type-volume limitation of 37 C.F.R. § 42.24. The paper includes 13,852 words, excluding the parts of the paper exempted by § 42.24(a).

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CERTIFICATE OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. § 42.6(e), and pursuant to agreement by the parties that filing with the Board through the Patent Trial and Appeal Case Tracking System (P-TACTS) constitutes electronic service, that service was made on the Petitioner as detailed below.

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