

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 IPR2024-00835
U.S. Patent No. 11,535,318

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	Guntert & Zimmerman Brochure, "S850 Mid-Size Slipform Paver"
2002	Guntert & Zimmerman Brochure, "S600 Multi-Purpose Slipform Paver"
2003	Guntert & Zimmerman Brochure, "S400 Multi-Purpose Slipform Paver"
2004	Gomaco Brochure, "GP4 Intelligent Slipform Paver" (2018)
2005	Patent Bots Webpage, Examiner Statistics for Gary S. Hartmann, available at https://www.patentbots.com/stats/examiner/3671-HARTMANN-GARY-S
2006	U.S. Patent No. 6,890,123
2007	Gomaco Webpage, "A Commander III Like No Other..." dated November 2016, available at https://www.gomaco.com/resources/worldstories/world44_1/piccoli.html
2008	Deposition Transcript of William Singhose, Ph.D., <i>Godbersen-Smith Construction Co. d/b/a Gomaco Corp. v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2021-00136 and IPR2020-01698, taken on July 23, 2021
2009	Decision Granting Institution of <i>Inter Partes</i> Review, <i>Godbersen-Smith Construction Co. d/b/a Gomaco Corp. v. Guntert & Zimmerman Const. Div., Inc.</i> , Case No. IPR2020-01698, Paper 24 (P.T.A.B. May 7, 2021)

I. INTRODUCTION

The Board should deny institution of *inter partes* review under 35 U.S.C. § 325(d) because the Examiner considered Petitioner's proposed combination of *CIII* (Ex. 1005) and *Rio* (Ex. 1006) during prosecution of U.S. Patent No. 11,535,318 (Ex. 1001, "the '318 Patent"). Not only did Patent Owner cite *CIII* and *Rio* to the Examiner, they also cited the Petition, Institution Decision, and the Final Written Decision ("FWD") in IPR2020-01698 regarding U.S. Patent. No. 10,029,749 ("'749 Patent"). These documents include exactly the same prior art and arguments recycled by Petitioner in this case, and Petitioner has not established any material error in the Examiner's analysis. The Examiner, Gary Hartmann, is well-versed in the relevant art, having examined and issued multiple patents for G&Z and Petitioner, and Petitioner's suggestion that he failed to do his job is both unsupported and insufficient to establish material error under the *Advanced Bionics* framework. Petition at 83-85.

Consistent with the Examiner's determination, Petitioner fails to show how *CIII* and *Rio* disclose or render obvious "a crawler track rotatably coupled to the jacking column," wherein the coupling is accomplished by "a slew drive coupled to the jacking column and the crawler track [which causes the] rotation of the crawler track relative to the jacking column." Petitioner fails to show a fixed jacking column that can support the rotation of the crawler track using a slew

drive. Petitioner also fails to put forth a showing for how a person of ordinary skill in the art (“POSITA”) would modify the alleged processors of *CIII* with *Rio* to support such functionality in a paving machine configured to move in a paving direction.

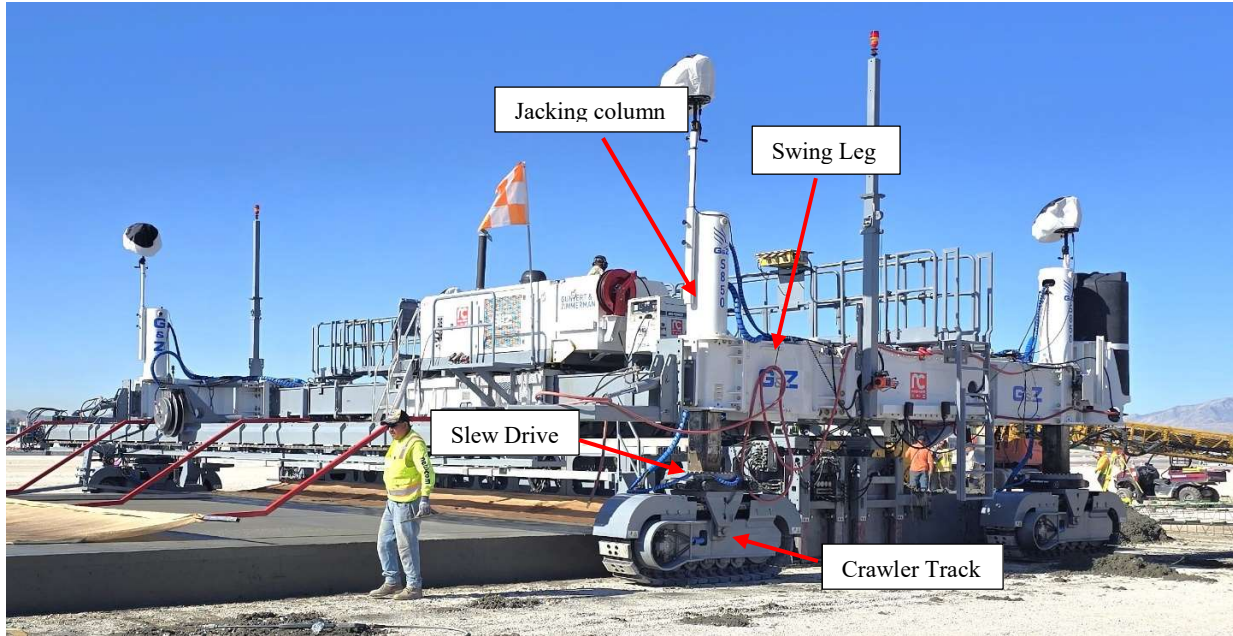
II. FACTUAL BACKGROUND

A. Overview and History of G&Z

G&Z is an innovative, family-owned company spanning three generations. G&Z was founded in 1942 and contributed to the war effort by building floating crane barges, landing crafts, steel tugboats, and inter-island supply vessels for the U.S. Navy and U.S. Army Transportation Corp. After the war, G&Z focused on the design and fabrication of canal construction equipment, supplying its first set of canal machines in 1946 which were used in many major projects, including the Grand Coulee Dam project in Washington and the Delta Mendota Canal Project in California. In 1956, G&Z began converting its canal lining equipment onto crawler tracks and built the first viable crawler track-mounted concrete slipform paver for highway and airfield paving with automatic line and grade control in reference to a stringline. These machines were used to build the Orly airfield in Paris, Dallas-Fort Worth Airport, shuttle landing strip at Cape Kennedy, and the Chek Lap Kok Airport in Hong Kong. Today, G&Z is renowned in the industry for continuing to innovate in the slipform paver industry resulting in numerous

patents for its various designs which have been blatantly copied by its only significant competitor in the United States, Gomaco Corp. (“Petitioner” or “Gomaco”). This copying forced G&Z to sue Gomaco for patent infringement and to seek an injunction prohibiting Gomaco from piggybacking off of G&Z’s extensive research and development.

This case involves G&Z’s innovative, patented, swing leg and power drive design which G&Z incorporated in its concrete pavers starting in 2010. In the image below, G&Z’s S850 concrete paver is moving in its paving direction (left to right) and the view is from the back of the paver. The swing legs are positioned on each side of the paver which contain a slew drive between the jacking column and the crawler track. This design provides a number of benefits, including the ability to steer and reconfigure the machine without any manual labor or having to stop and disengage the crawler with the ground.



See Ex. 2001 (S850 Product Brochure); Ex. 2002 (S600 Product Brochure); Ex. 2003 (S400 Product Brochure).

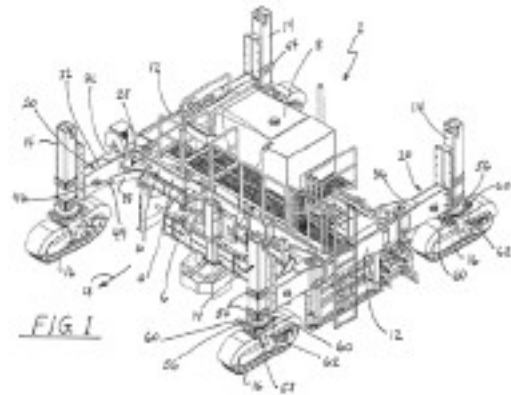
The industry exploded with praise for G&Z's novel design as contractors around the world saw the incredible value that G&Z's patented "SmartLeg / AccuSteer" technology brought to them. In fact, G&Z was seeing potential customers abandoning their existing slipform paver before the end of the approximate ten to fifteen year life cycle and purchasing G&Z's SmartLeg / AccuSteer slipform paver machine. For G&Z's customers, the SmartLeg / AccuSteer technology dramatically improved productivity because it made possible, for the first time ever, to move the swing leg and crawler track position on a concrete slipform paver while continuing to spread, level, and finish the concrete form and avoid obstacles in the machine's path. It also allowed a wide

degree of steering angles from any swing leg angle to speed maneuvering of the machine for tight radius paving and reduced hand paving. It also permitted the narrowing of the machine to move through smaller spaces, such as a bridge, or quickly prepare the paver machine for transport to another location. It allows paving ramps away from the mainline without the need for cribbing. Previously, repositioning the crawler tracks took hours or up to half a day, and it could take a full day just to get the paver machine ready to transport. With SmartLeg / AccuSteer technology, these tasks were reduced to minutes and worst case less than 30 minutes.

With all of the praise for G&Z's design in the industry, Gomaco decided to copy it in 2015 after realizing that there was no other viable way to provide all of the benefits that G&Z was providing to its customers. As shown below, Gomaco started to release slipform paver models with the same swing legs and slew drives and are almost an identical copy of G&Z's machines:



In fact, even a cursory view of Gomaco's GP4 slipform paver (left) compared to Figure 1 of the '318 Patent (right) demonstrates that Gomaco copied G&Z's entire design:

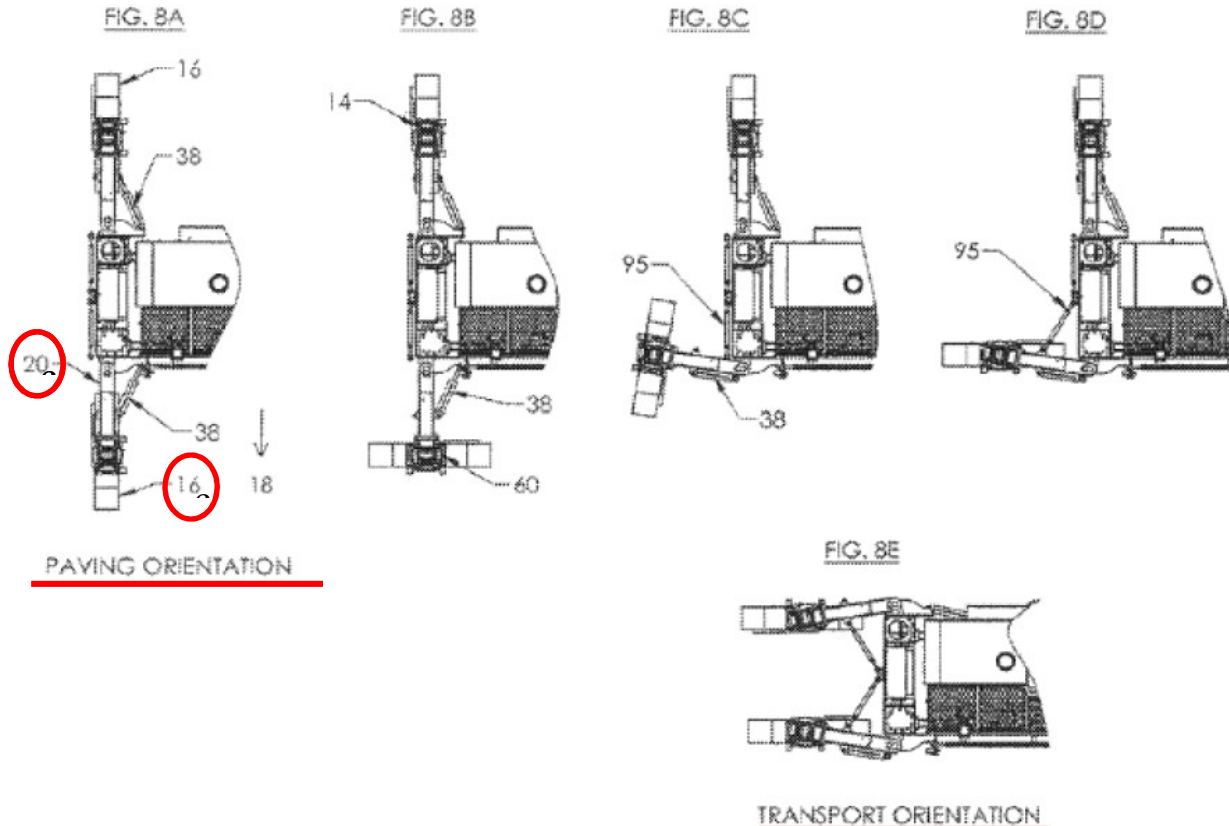


Ex. 2004 (GP4 Brochure) at 3; '318 Patent, FIG. 1.

B. Overview of the '318 Patent

G&Z's '318 Patent is directed to a specialized swing leg assembly for a slipform paver, which allows an operator to easily and quickly reorientate the angle of the swing legs and crawler tracks. This arrangement enables a broad range of steering angles, a groundbreaking feature that did not exist before 2010. Figures 8A-E of the '318 Patent illustrate partial overhead views of a slipform paver having pivotable swing legs (20) supporting crawler tracks (16). In contrast with the conventional slipform pavers discussed above, these '318 Patent swing leg assemblies move swiftly from the "Paving Orientation" to the "Transport

Orientation” without the need to individually lift, adjust, and repin the swing legs and crawler tracks, thereby eradicating costly time delays:



'318 Patent, FIGS. 8A-E (annotated).

Each swing leg assembly includes a jacking column (14), which is responsible for raising and lowering its associated crawler track. *Id.* at 8:53-65, 9:30-32. The crawler tracks are rotatably coupled to the lower ends of the jacking column and are used each time the swing leg is pivoted inwardly or outwardly relative to the machine frame. *Id.* at 8:65-9:2, 10:52-11:19. Several transducers send the position data for each leg, including the angular position of the swing leg with respect to the frame and the position of the crawler track with respect to the

jacking column, to a processor. *See id.* at 6:23-28, 18:11-19. The processor then determines the necessary adjustments to ensure the crawler tracks are orientated as intended. *Id.*; *see also id.* at 20:38-42, FIG. 12A (Figure 12A with angular transducers identified as 78).

A slew drive is coupled to the “jacking column and crawler track” that “allows for a wide range of steering angles while in 90-degree steering mode to make the machine highly maneuverable on site.” *Id.* at Abstract; *id.* at 7:6-9. Using this novel design, the '318 Patent solved a longstanding problem with conventional slipform paver machines—namely, the time-consuming and expensive process required to manually maneuver the swing legs during concrete paving and transportation of the paver machines. *Id.* at 7:9-28; *see also id.* at 6:53-65 (specialized swing leg assembly permits the crawler track positions to be relocated without any manual mechanical or electronic adjustments); *see also, e.g., id.* at 5:38-41 (previous approach does not permit moving the paver from one site to another quickly and efficiently).

The maneuverability allowed by the '318 Patent's swing leg assembly enables large, heavy pavers to avoid obstacles easily while maintaining a consistent paving direction and surface for the concrete. *Id.* at 6:17-35, 15:63-16:19, 16:42-57. The '318 Patent's swing leg assembly also ensures that the paver can be narrowed enough for transport over ordinary highways and through

crowded construction sites while significantly reducing the time necessary to make these adjustments. *Id.* at 7:6-28. For these reasons and those stated below, the '318 Patent's swing leg assembly marked a significant improvement upon the state of the art, markedly improving the maneuverability of these large and immensely heavy slip form pavers. Thus, Petitioner's collateral estoppel argument does not apply to these proceedings because the claims of the '318 Patent present new issues of validity from those of the previous proceeding.

C. Prosecution History

The '318 Patent issued on December 27, 2022, from an application filed on March 16, 2020. *See* '318 Patent at Cover.

During prosecution of the '318 Patent, the Examiner explicitly considered the U.S. Patent Nos. 7,523,995 (*Rio* (Ex. 1006)) and 6,481,924 (*Smolders* (Ex. 1021)) and a number of Other Publications, specifically the Commander III New Generation Trimmer / Paver Operator / Service Manual G21 Controls (*CIII* (Ex. 1005)) and the Final Written Decision from IPR2020-01698 ("749 FWD" (Ex. 1036)), all now relied on by Petitioner. *See* '318 Patent at 2-3. All the references and decisions were listed on the IDS, and initialed by the Office. Specifically, *Rio* and *Smolders* were signed for and considered on March 2, 2021, *CIII* was signed for and considered on January 10, 2022, and the '749 FWD was signed for and considered on August 16, 2022. Ex. 1004 at 226-227, 321-322, and 557-558. The

Examiner expressly notes that on April 14, 2021, he “[r]eviewed all documents for [the] PTAB Proceeding[s]” which would include not only *Rio* and Smolders but also the petition for *inter partes* review of the ’749 Patent and its institution decision. *Id.* at 222; ’318 Patent at 2-3. On August 16, 2022, the Examiner allowed all claims of the ’318 Patent. Ex. 1004 at 548-551.

The Examiner in this case, Gary Hartmann is a GS-14 with 28 years of service to the PTO examining patents directed to heavy machinery, road, earth working. Ex. 2005 (Hartmann profile). Mr. Hartmann examined, among others, U.S. Patent No. 6,890,123 (“Piccoli”), which discloses a steering cylinder design for pivoting a crawler track that is at least cumulative, if not identical, to the design of *CIII* used by Petitioner. *See* Ex. 2006 (“Piccoli”); Ex. 1005. Gomaco has previously marketed its now 40-year close relationship with N. Piccoli Construction Ltd. who also uses the “newest Commander III” machine with “rotary-sensored slew drives on each of the three tracks” for slipforming a “24-inch (610 mm) radius” and “new radius software that allows the operator to program the size of the radius” so the operator only “flips a switch activating the tight radius program and the machine slipforms around the radius.” Ex. 2007 (Gomaco Piccoli Article) at 1; Ex. 2006 (“Piccoli”) at 1 (Assignee: N. Piccoli Construction). Indeed, Gomaco has a history of creating features for its machines premised upon the patents of N. Piccoli Construction Ltd. Ex. 2007 at 5. Notably,

Piccoli is also cited by the Mr. Harmann in the '318 Patent. '318 Patent at 2.

Thus, it is clear that Mr. Hartmann had substantial knowledge of the swing leg assemblies Petitioner claims now invalidate the '318 Patent.

III. COLLATERAL ESTOPPEL DOES NOT APPLY

Petitioner's claim that the Board should apply collateral estoppel to this entire proceeding based on the '749 FWD is inconsistent with Federal Circuit precedent because material differences between the claims of the '318 and '749 Patents present materially different issues of patentability. *Google LLC v. Hammond Dev. Int'l, Inc.*, 54 F.4th 1377, 1381 (Fed. Cir. 2022) (collateral estoppel requires the issues of patentability be identical) (citing *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013)).

Claim 1 of '318 Patent recites at least the following limitations that are not found in the '749 Patent: (1) a crawler track rotatably coupled to the jacking column, wherein the crawler track is configured to rotate about a second axis to a second angular orientation relative to the jacking column; (2) a slew drive coupled to the jacking column and the crawler track, wherein the slew drive is configured to cause rotation of the crawler track relative to the jacking column; and (3) a processor configured to: (i) receive the first signal from the first sensor, and the second signal from the second sensor, (ii) determine a change of the first angular orientation based on the first signal, (iii) in response to determining the change of

the first angular orientation, determine a target second angular orientation based on the determined change of the first angular orientation and the second angular orientation based on the second signal, and (iv) send a control signal to the slew drive in order to cause the second angular orientation of the crawler track to rotate to the target second angular orientation. *Compare* '318 Patent at Claim 1 *with* Ex. 1033 ("’749 Patent") at Claim 17.

These additional limitations materially alter claim scope and, with it, the invalidity analysis of the '318 Patent, because they require additional modifications not addressed in the '749 FWD. *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); *Mobile Tech, Inc. v. Sennco Solutions Inc.*, No. IPR 2018-01218, Paper 32 at 28 (P.T.A.B. Jan. 15, 2020) (collateral estoppel does not apply because "the panel in IPR2017-02200 did not address the issue of whether [the references] could have been combined in the manner Petitioner contends in this case").

IV. LEVEL OF ORDINARY SKILL IN THE ART

For the purpose of this preliminary response, 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." Petition at 8-9. "Additional experience could substitute for a formal degree, and an advanced degree could substitute for experience." *Id.*

V. OVERVIEW OF THE PRIOR ART

A. *CIII*

CIII is the operator's manual for Gomaco's *CIII* machine, which exemplified the conventional slipform paver at the time of the invention. Petition at 10-20 (citing Ex. 1005, *CIII*). Notably, the *CIII* machine's hydraulic steering cylinder and jacking column configuration is the same configuration described and distinguished in the '318 Patent. '318 Patent, 4:20-36 (the hydraulic steering cylinder located on the jacking column, as in *CIII*, is undesirable because it does "not allow the crawler tracks to be rotated 90 [degrees] from their normal operating orientation without the time-consuming repining or repositioning of the steering."). As described by Petitioner, *CIII*'s "jacking column includes a lower guide tube that telescopes in and out of the upper guide tube to raise or lower the track or frame."

'749 FWD at 65 (referencing *CIII* at 3-17, 5-15, 5-35). Petitioner further contends that *CIII*'s steering cylinder rotates "the track and guide tubes relative to the outer cylinder of the jacking column." *Id.* (referencing *CIII* at 5-7, 5-35, 8-71-72); *see also CIII* at 7-2-4, 8-75-76.

The *CIII* machine's hydraulic steering cylinder is attached to the jacking column and requires, at the least, manual repositioning and repining of the steering cylinder to the torque arm to approach a 90-degree steering position or maneuver around obstacles. *See CIII* at 3-18; Ex. 2008 (the deposition transcript of Petitioner's expert Dr. Singhose in IPR2020-01698 ("Singhose Tr. Vol. II") at 18:12-19:4, 16:2-23 (describing the "physical limits" of the jacking column steering cylinder configuration); *id.* at 28:21-29:2. In other words, the *CIII* machine cannot quickly and easily reposition its crawler tracks to offset changes in the positioning of the swing leg. Instead, these tasks require that the operator stop the *CIII* machine and manually repin and reposition the swing leg and hydraulic steering cylinder for each track, individually, which can take up to a full shift. *CIII* at 3-18; Singhose Tr. Vol. II at 12:15-13:21 (testifying that this whole process is "quite extensive" and may take as long as a day to set up).

The '318 Patent eliminates the *CIII* machine's extensive repositioning process by describing and claiming a slipform paver that can reposition its swing legs and crawler tracks without individually lifting each crawler track before

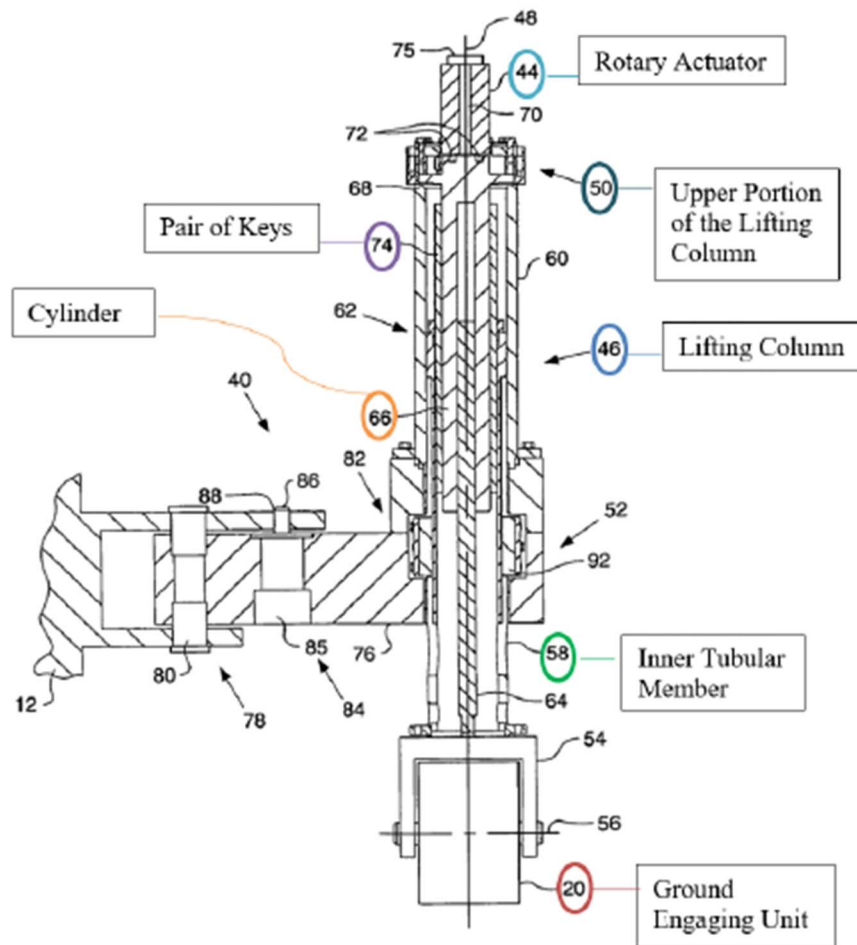
repining the swing leg. These improvements over the *CIII* and other conventional slipform pavers are made possible using a crawler track rotatably coupled to the jacking column with a slew drive for causing rotation of the crawler track relative to the slew drive. '318 Patent at 6:66-7:28; *id.* at Claim 1.

B. *Rio*

Ex. 1006 ("*Rio*") discloses a road-milling machine with a rotary actuator located on top of a lifting column, which maintains the direction of the associated ground engaging unit in either the retracted or projecting positions. *Rio* at Abstract; *id.* at 5:11-16. Like the *CIII* machine, *Rio* teaches that an operator must stop the machine to raise the lifting column (46), which lifts the ground-engaging unit from the ground so that it may be repositioned to either the retracted or projecting position. *See, e.g., Rio* at 6:43-50; *id.* at 7:62-8:59. Moreover, unlike the '318 Patent, which describes a wide range of swing leg orientations relative to the machine frame allowing for adjustment of the swing leg orientation to 180 degrees from its initial position ('318 Patent, 20:52-21:6; *id.* at Claim 7), *Rio*'s retracted and projecting positions do not enable its swing leg to change orientation by up to 180 degrees relative to the module frame.

Rio discloses placing a rotary actuator 44 at the upper portion 50 of the lifting column so that it is spaced apart from other mechanical devices such to "avoid[] problems caused by an accumulation of mechanical devices at a single

location on the lifting column 46,” as illustrated in the figure below. *Rio* at 5:11-16.



Rio, FIG. 2 (annotated). In fact, *Rio* goes to great lengths and expense to place actuator 44 on the upper portion of the lifting column 46, as *Rio* teaches that the lifting column 46 includes a series of key pairs 74 that slide into the longitudinal keyways of the inner tubular member 58, which transmit the torque generated by the rotary actuator through the lifting column to rotate the lower portion of the

lifting column and the fixedly attached ground engaging unit. *See id.* at 5:54-6:6, 5:8-16.

VI. THE BOARD SHOULD DENY THE PETITION UNDER 35 U.S.C. § 325(D)

The Board “may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). As the Board explained in *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GmbH* (“*Advanced Bionics*”):

[U]nder § 325(d), the Board uses the following two-part framework: (1) whether the same or substantially similar art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.[] If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.

No. IPR2019-01469, 2020 WL 740292, at *3 (P.T.A.B. Feb. 13, 2020)

(precedential). “At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*

A. *Advanced Bionics* Step 1 (*Becton, Dickinson* Factors (a), (b), and (d)): The same or substantially the same prior art was previously presented to the USPTO.

The first prong of the *Advanced Bionics* framework is satisfied because Petitioner's arguments regarding the *CIII*, *Rio*, Smolders, and the previous IPR Final Written Decisions—all critical to the grounds raised in the Petition—were traversed during the prosecution of the application that led to the '318 Patent. *See Advanced Bionics*, 2020 WL 740292, at *3 ("Previously presented art includes ***art made of record by the Examiner***, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent.") (emphasis added).

The first prong of the *Advanced Bionics* framework is satisfied when an examiner signs an IDS indicating that the art and arguments were considered. *See Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, No. IPR2021-01270, Paper 10 at 13-14 (P.T.A.B. Jan. 24, 2022) (denying institution because the examiner's signature on the IDS indicated that the examiner had considered the previous IPR petitions including the same art and arguments); *GlaxoSmithKline Consumer Healthcare Holdings (US) LLC v. Cipla Ltd.*, No. IPR2020-00371, Paper 7 at 12-14 (P.T.A.B. July 31, 2020) (denying institution based in part on an IDS listing a previous IPR petition, which included the same art, that the examiner considered); *see also BMW of N. Am., LLC v. Stragent, LLC*, No. IPR2021-00419, Paper 21 at 5

(P.T.A.B. Mar. 12, 2022) (denying petitioner's request for rehearing because the examiner's signature of the IDS indicated that the references were considered); *Sonos, Inc. v. Google, LLC*, No. IPR2021-00963, Paper 9 at 9-10 (P.T.A.B. Nov. 9, 2021) (denying institution because the examiner's signature on the IDS indicated that the references were considered).

Here, the same art and arguments relied on in the Petition were presented to and considered by the Office. The '318 Patent lists among its References Cited all the art relied upon in the Petition, including:

- 7,523,995 B2 4/2009 Rio et al.;
- 6,481,924 BI 11/2002 Smolders et al.;
- Gomaco; The Worldwide Leader in Concrete Paving Technology, Commander III New Generation Trimmer/PaverOperator/Service Manual G21 Controls, Gomaco Exhibit 1005; 452 pages; and
- *Gomaco Corporation v. Guntert & Zimmerman Cons. Div., Inc.*, IPR2020-01698, Paper 80.

See '318 Patent at References Cited. Thus, the first prong of the *Advanced Bionics* framework is satisfied. *Gator Bio, Inc. v. Sartorius Bioanalytical Insts., Inc.*, No. IPR2023-00215, Paper 19 at 17-19, 22 (P.T.A.B. June 20, 2023) (denying institution where the challenges set forth in the Petition are based on the same or substantially the same prior art or arguments previously presented to the Office during patent examination for each of the asserted grounds).

B. *Advanced Bionics* Step 2 (*Becton, Dickinson* Factors (c), (e), and (f)): Petitioner has made no showing of material examiner error.

The second prong of *Advanced Bionics* is satisfied because Petitioner does not show that the Examiner erred in a manner material to patentability. *Gator Bio*, Paper 19 at 7-8, 17-22. It is the Petitioner's burden to affirmatively demonstrate that the Office committed material error in issuing the challenged patent. *See, e.g., Dir., Office of Workers' Comp. Programs, Dep't of Labor v. Greenwich Collieries*, 512 U.S. 267, 276 (1994) (consistent with the Administrative Procedure Act (APA), the proponent of a claim has the burden of persuasion); *Fanduel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1341 (Fed. Cir. 2020) ("the burden of proving invalidity in an IPR remains on the petitioner throughout the proceeding") (citations omitted).

The Board consistently exercises its discretion to deny institution in circumstances where a petitioner does not address whether the Office materially erred. *See Wolfspeed, Inc. v. The Trustees of Purdue Univ.*, No. IPR2022-00761, Paper 9 at 14-15 (P.T.A.B. Nov. 8, 2022) (exercising its discretion under Section 325(d) to not institute IPR because the proffered art was cumulative to or substantially the same as art previously presented to the Office and petitioner did not address whether the Office materially erred); *see also Darfon Elecs. Corp. v. Shipman*, No. IPR2022-01008, Paper 11 at 14 (P.T.A.B. Dec. 2, 2022) (same).

Instead of establishing material error, Petitioner asserts that the Examiner did not specifically discuss *CIII*, *Rio*, Smolders, or the '749 FWD. Petition at 83-85. However, the Examiner confirmed that he “[r]eviewed all documents for [the] PTAB Proceeding[s],” which would include not only *Rio* and Smolders but also the petition for *inter partes* review of the '749 Patent and its institution decision. *See* Ex. 1004 at 555. Furthermore, it would be unreasonable to conclude that the Examiner did not consider the FWDs because Applicant cited them in three separate Information Disclosure Sheets leading to several different Notices of Allowance. *Id.* at 328-29, 415-21, 432-33, 478-83, 532-33, 544-58, 561. In any case, silence regarding references presented to and considered during prosecution does not establish material error by the Examiner. *Microsoft Corp. v. ThroughPuter, Inc.*, No. IPR2022-00757, Paper 10 at 21 (P.T.A.B. Nov. 1, 2022) (denying institution and rejecting petitioner’s argument that the Office did not take substantive action showing consideration of cited art because “the lack of a rejection itself is not dispositive of whether there was material error”).

While a Petitioner may establish material error by showing that the Examiner overlooked relevant teachings in *CIII*, *Rio*, Smolders, or the '749 FWD, Petitioner failed to do so here. *Advanced Bionics*, 2020 WL 740292, at *8 (“Petitioner must demonstrate that the Examiner erred in the evaluation of the prior art, for example, by showing that the Examiner misapprehended or overlooked

specific teachings in the relevant prior art such that the error by the Office was material to the patentability of the challenged claims.”). Rather than identify any teachings the Examiner allegedly overlooked, Petitioner alleges error based on its self-serving statement that “[t]he Petition sufficiently demonstrates how CIII and Rio render each claim of the ’318 patent obvious.” Petition at 85. This bare assertion confuses Petitioner’s burden to explain why the Office should not “defer to previous evaluations of the evidence of record” with its burden to establish a reasonable likelihood that any claim of the ’318 Patent is unpatentable. *Advanced Bionics*, 2020 WL 740292, at *3.

Petitioner’s attempt to rely on collateral estoppel to establish material error also fails because each of the issues raised herein concerns material differences between the ’749 and ’318 Patents. Petition at 85. Indeed, even if one assumes (albeit incorrectly) that *CIII*, *Rio*, and/or Smolders disclose all elements of the challenged claims, this alone does not demonstrate material error. During prosecution, the Examiner allowed Claim 1 because none of the prior art of record discloses or suggests the claimed features in combination. *See* Ex. 1004 at 485, 548-550. The Examiner therefore did not find Claim 1 patentable because the Examiner overlooked *Rio*, *CIII*, or the ’749 FWD disclosing any one or more features now relied on in the Petition. Instead, the Examiner found the claims

nonobvious over the prior art (including *Rio*, *CIII*, and Smolders) in any proper combination. Petitioner identifies no error in the Examiner's analysis.

Petitioner presents *CIII*, *Rio*, Smolders, and the '749 Patent on obviousness grounds, but Petitioner provides no assertion that the Examiner made a material error when it found the claims of the '318 Patent nonobvious over *CIII*, *Rio*, Smolders, '749 FWD and the other prior art of record and the knowledge of a POSITA. *Ivantis, Inc. v. Sight Scis., Inc.*, No. IPR2022-01533, Paper 14 at 18-19 (P.T.A.B. Mar. 27, 2023) (exercising §325(d) discretion to deny petition where petitioner argued the references in the record were not discussed by the Examiner); *Google LLC v. Valtrus Innovations Ltd.*, No. IPR2022-01197, Paper 9 at 23 (P.T.A.B. Jan. 3, 2023) (exercising §325(d) discretion to deny petition where petitioner made a "mere two sentence assertion regarding § 325(d)" and failed to discuss with specificity how the examiner erred with respect to reference); *Eyenovia, Inc. v. Sydnexis*, No. IPR2022-00963, Paper 7 at 19 (P.T.A.B. Nov. 8, 2022) (exercising § 325(d) discretion to deny petition where petitioner failed to show material error as no rejection was issued over IPR references while each was before examiner or cumulative).

In this case, the Examiner acknowledged the cited references and decisions and included them upon the face of the '318 Patent. Given that Petitioner has not established material error, the Board should defer to the Examiner's evaluation of

the same evidence asserted here and exercise its discretion to deny institution.

Advanced Bionics, 2020 WL 740292, at *3, 8 (indicating that the Board should exercise discretion to deny institution if the petitioner fails to make a showing of material error because “this framework reflects a commitment to defer to previous Office evaluations of the evidence of record”).

Petitioner also asserts that even though *CIII*, *Rio*, Smolders, and the '749 FWD were previously considered by the Examiner, the Petitioner's attorney argument and paid expert declaration submitted from an alleged (“POSITA”) explains why G&Z is estopped from arguing against obviousness here. But the Examiner is considered a POSITA while evaluating references, including the '749 FWD, during prosecution, and allegation does not show how the examiner erred or why additional evidence or facts in the petition warrant reconsideration. *Advanced Bionics*, 2020 WL 740292, at *3 (“If the petitioner fails to show that the Office erred, the Director may exercise his discretion not to institute *inter partes* review.”); *St. Clair Intell. Prop. Consultants, Inc. v. Canon Inc.*, 412 F. App'x 270, 276 (Fed. Cir. 2011) (stating that the examiner is considered one of ordinary skill in the art and his opinions of the claims carries significant weight).

As discussed above, the Examiner was intimately familiar with the art, including the steering cylinder design of *CIII*. It follows that the Petitioner's attorney argument and declaration regarding estoppel does not add anything to

what the Examiner presumptively knew as a POSITA when considering *CIII*, *Rio*, Smolders, '749 FWD, and the other references in the record during prosecution. Moreover, if simply adding attorney argument and a declaration from a POSITA regarding references and decisions that were previously considered by the Examiner is enough to meet *Advanced Bionics* Step Two, then discretionary denials under § 325(d) would be nonexistent.

Because the Petition presents only the same and substantially the same prior art as previously presented during prosecution, and because Petitioner has failed to make any showing of error by the USPTO, the Board should exercise its discretion and deny institution under 35 U.S.C. § 325(d). *Advanced Bionics*, 2020 WL 740292, at *2-3 (describing a two-part framework demonstrating “a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown”).

VII. GROUND 1: CLAIMS 1-8 ARE PATENTABLE OVER *CIII* AND *RIO*

A. Petitioner's Proposed *CIII* or *Rio* Combination Does Not Disclose “a crawler track rotatably coupled to the jacking column”

Neither *CIII* nor *Rio* discloses a swing leg assembly coupled to a paving machine wherein the crawler track is rotatably coupled to a jacking column such that only the crawler track is configured to rotate about an axis relative to the jacking column. Instead, *CIII* and *Rio* both disclose leg assemblies that rely upon the rotation of components within the jacking column itself, such that the crawler

track does not rotate relative to the jacking column because the jacking column is also rotating. *CIII* at 8-76 (“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).

The '318 Patent makes clear that a jacking column consists of both the inner and outer tubes. '318 Patent at 11:20-39. Any rotation of the inner tube would be inconsistent with the claim's requirement that the crawler track must rotate relative to the jacking column.

In support of its claim, the Petition points to the discussion in the '749 FWD for element in claim 17 of the '749 Patent that discloses “an upright jacking column secured to the swing leg, having a rotary connection between the jacking column and the crawler track permitting relative rotational movements of the crawler track and the jacking column” as support that *CIII* and *Rio* meet this element. Petition at 42-43. However, the Board in the '749 FWD, not only did not construe “rotary connection” but also only considered *CIII* for this element finding *CIII* satisfies the “‘jacking column’ limitation” whereupon *CIII*'s steering cylinder rotates “the track **and guide tubes**” relative only to the “outer cylinder of the jacking column.” '749 FWD at 36-37, 64-65 (emphasis added); Ex. 2009 ('749 Patent Institution Decision) at 23-26 (providing two interpretations for the term

“between” regarding the element “a power drive between the jacking column and the crawler track, configured for translating relative rotational movements between the jacking column and the crawler track”); Petition at 43-45. Thus, the Board clearly applied its broad functional meaning of “between” in the ’749 FWD, whereas here, Claim 1 of the ’318 Patent requires that ***only the crawler track rotate relative to the jacking column***. *Google*, 54 F.4th at 1381 (“[C]ollateral estoppel requires that the issues of patentability be identical.”) (citation omitted).

The Petition’s reliance in this action upon *Rio* does not cure *CIII*’s failings. Petition at 45 (arguing that it would have been obvious to “modify each of *CIII*’s swing-leg assemblies by positioning *Rio*’s rotary actuator 44 between the jacking column and crawler track”). As the Board found, *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.” ’749 FWD at 11-12, 77; *Rio* at 5:25-6:2. Therefore, the rotation of both *CIII* and *Rio*’s crawler tracks, as presented in the Petition, does not disclose rotation relative to the jacking column because the jacking column itself is also rotating with the track.

The Petition does not address how or why a POSITA would be motivated to combine two references that disclose complex jacking columns containing

rotational lifting tubes and develop a non-rotational jacking column wherein the crawler track is rotatably coupled in the manner suggested by Petitioner. *See* Petition at 31 (arguing that it would be routine for a POSITA to “fix the upper guide tube to the nonrotatable outer cylinder” or “combine the outer cylinder and upper guide tube into one unitary component that allows the lower guide tube to telescope vertically”); *see also id.* at 43-45; *Mobile Tech*, Paper 32 at 28 (collateral estoppel does not apply because “the panel in IPR2017-02200 did not address the issue of whether [the references] could have been combined in the manner Petitioner contends in this case.”). As such, the Petition fails to show a reasonable likelihood *CIII* and *Rio* render this element obvious.

B. Petitioner's Proposed *CIII* or *Rio* Combination Does Not Disclose “a slew drive coupled to the jacking column and the crawler track, wherein the slew drive is configured to cause rotation of the crawler track relative to the jacking column”

Neither *CIII* or *Rio* disclose the use of a slew drive coupled to a jacking column ***and a crawler track*** that causes the rotation of only the crawler track relative to the jacking column. Indeed, both *CIII* and *Rio* are silent as to the use of a slew drive coupled to both the jacking column and crawler track configured to cause only rotation of the crawler track relative to the jacking column, which is left unaddressed by the Petition. Petition at 46-47.

The Petition's reliance upon *Rio* to modify the leg assembly of *CIII* is misplaced because *Rio* does not disclose coupling its worm gear to both the jacking

column and crawler track, but instead discloses connecting the “inner tubular member 58” to the “bracket 54” which supports the “ground engaging unit.” *Rio* at 5:25-53. There the inner tubular member 58 of the jacking column is rotated using the second actuator 44 that “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.” *Id.* at 4:56-60. Furthermore, *Rio* identifies to a POSITA that it is preferable that “the second actuator 44 is located at an upper portion 50 of the lifting column 46” such that a POSITA would not be motivated to couple the rotary actuator to both to the jacking column and crawler track as suggested by Petitioner. *Id.* at 5:11-14. Thus, *Rio* provides no disclosure that would motivate a POSITA to couple a slew drive to the jacking column and crawler track such that only the crawler track was rotated and no other portion of the jacking column rotated.

The Petition's attempt to equate this element to that determined in the '749 FWD fails because in the '749 FWD the Board relied upon the broader interpretation of “between” for a power drive configured for translating relative rotational movements between the jacking column and the crawler track, as discussed above. Petition at 27-31 (describing alleged motivation to connect *Rio*'s rotary actuator to the bottom of the lower guide tube only); *id.* at 46-47. Conversely, Claim 1 of the '318 Patent requires the slew drive to cause the rotation

of the crawler track relative to the jacking column such that only the crawler track rotates and no components within the jacking column are affected. '318 Patent at Claim 1. Thus, the differences between the unadjudicated '318 Patent claims and the adjudicated '749 Patent claims, materially alter the question of invalidity, and collateral estoppel does not apply. *Google*, 54 F.4th at 1381 (collateral estoppel may apply only when “the differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question of invalidity.”) (citation omitted); *C.R. Bard*, Paper 102 at 54 (“The material differences in the claims, alone, and thus the issues previously decided, precludes a finding of collateral estoppel.”).

Because of its failure to address the coupling of a slew drive to both a jacking column and crawler track, the Petition fails to show a reasonable likelihood *CIII* and *Rio* render this element obvious.

C. Petitioner's Proposed *CIII* or *Rio* Combination Does Not Disclose the Claimed Processor

Neither *CIII* nor *Rio* disclose a processor used to determine a target angular orientation for the crawler track based upon changes in the angular orientation of the swing leg and neither use a control signal sent to a slew drive to match the orientation of the crawler track to the target angular orientation determined by the processor. Contrary to the Petition, a POSITA would not find it obvious to replace *CIII*'s processor with *Rio*'s control system because *CIII* uses only relies upon its

processor without manual intervention when in STRING STEER to maintain the crawler tracks along the guide line while *Rio* only discloses using its controller for limited steering of only one of the four ground engaging unit preferably while the machine is stopped and its track raised off the ground.

CIII does not determine the orientation of the crawler track relative to the swing leg or jacking column but instead uses preset positions that do not determine the necessary change in track orientation based on the orientation changes in the swing leg. Indeed, for an operator to make adjustments to the crawler track to match the changes in the swing leg, it is a manual operation that is entirely divorced from the steering controls of *CIII*:

To swing the assembly to the left from any position, remove the locking pin from the frame end of the mount and move the swing control switch to extend the swing cylinder, swinging the leg to the left, until the locking pin can be inserted in the desired position. Make certain the pin is fully inserted.

Remove the locking pin from the track end of the mount and move the swing control switch to retract the swing cylinder, turning the leg mount, until the locking pin can be installed in a position that corresponds to the rear pin position. The front track mounting plate must be parallel to the front of the machine frame.

CIII at 3-18; *see also id.* at 3-15-18 (manual procedures for Lateral Positioning).

The above process can only occur when the machine is supported and the jacking column cylinder is used to lift the crawler track off the ground.

CIII's processor is only for slight steering adjustments, at best, so that the machine holds the paving direction while the swing leg and jacking column are in a fixed position. *CIII*'s "smart steer controls" consist of five steering modes: "STRING STEER," "COORD STEER," "CRAB STEER," "FRONT STEER," and "REAR STEER." *Id.* at 2-16. Of its five steering modes, the only one that is not manual steering is "STRING STEER." *Id.* (identifying *CIII*'s smart steer controls must be in automatic mode which is designated as "STRING STEER."). However, in STRING STEER, *CIII* needs to have a guideline mounted to the machine for use with its sensor wands. *Id.* at 2-26-27, 3-44-45, 7-15-19 (discussing the mounting of the string guideline to the machine and sensor wands). Thus, *CIII*'s processor, while in Automatic mode, only makes minor adjustments to the crawler tracks based upon determination of the sensor wand's relation to the guideline and not changes in the angular orientation of the swing leg. Further, if the swing leg angle is changed, the crawler track angle must also be reset, and the smart cylinder nulled, to reset the electronics. *Id.* at 2-24.

Rio's controller does not fix the deficiencies of *CIII* as Petitioner suggests. Petition at 32-35 (stating "[a] POSITA would have been motivated to implement

Rio's control system in the CIII machine *to automate rotation of each swing leg and crawler track*") (emphasis added); *id.* at 52-59. *Rio*'s disclosure teaches that its controller (processor) is configured to control the angular rotation of a lone crawler track relative to the swing arm only when the machine is stopped and the crawler track is raised off the ground. *Rio* at 7:61-8:37. Additionally, *Rio* shows that neither its processor, sensors, or steering actuators disclosed are sufficient to "rotate and steer each wheel or track section either independently or in coordination with each other" as this requires the "addition of sufficient rotation sensors and actuators" not disclosed by *Rio*. *Id.* at 9:15-42 (discussing the steering limitations of the "one ground engaging unit 20 using the second actuator"). Therefore, the road milling machine of *Rio*, does not determine or control the angular orientation of all crawler tracks relative to the changing orientation of the swing arm as suggested by the Petition.

Thus, the Petition fails to show a reasonable likelihood that the combination of *CIII* and *Rio* render this element obvious.

VIII. CONCLUSION

Petitioner has not established a reasonable likelihood that it will prevail in establishing that Claims 1-8 of the '318 Patent are invalid. Patent Owner accordingly requests that the Board deny institution of *inter partes* review of the '318 Patent.

Patent Owner's Preliminary Response
IPR2024-00835 (U.S. Patent No. 11,535,318)

Respectfully submitted,

Dated: August 22, 2024

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(Case No. IPR2024-00835)

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 has 7,246 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using the Microsoft Word word-processing system used to prepare this paper.

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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.

<i>Date of service</i>	August 22, 2024
<i>Manner of service</i>	Electronic Filing with the Board
<i>Documents served</i>	PATENT OWNER'S PRELIMINARY RESPONSE
<i>Persons Served</i>	Finnegan, Henderson, Farabow, Garrett & Dunner, LLP: Jason E. Stach Luke J. McCammon David K. Mroz Sonja W. Sahlsten Robert K. High

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